



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION IV  
1600 E LAMAR BLVD  
ARLINGTON, TX 76011-4511

February 12, 2015

Louis P. Cortopassi, Site Vice President  
Omaha Public Power District  
Fort Calhoun Station  
P.O. Box 550  
Fort Calhoun, NE 68023-0550

Subject: FORT CALHOUN - NRC INTEGRATED INSPECTION REPORT  
NUMBER 05000285/2014005

Dear Mr. Cortopassi:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Fort Calhoun Station (FCS). On January 13, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The 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. These findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs), consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violation or the significance of either NCV, then 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 Fort Calhoun Station.

If you disagree with either cross-cutting aspect assignment, then 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 Fort Calhoun Station.

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

L. Cortopassi

-2-

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agency wide 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/*

Michael C. Hay  
Chief, Project Branch D  
Division of Reactor Projects

Docket: 50-285  
License: DPR-40

Enclosure:  
NRC Inspection Report 05000285/2014005  
w/Attachment: Supplemental Information

Document Room or from the Publicly Available Records (PARS) component of the NRC's Agency wide 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/*

Michael C. Hay  
Chief, Project Branch D  
Division of Reactor Projects

Docket: 50-285  
License: DPR-40

Enclosure:  
NRC Inspection Report 05000285/2014005  
w/Attachment: Supplemental Information

DISTRIBUTION: See next page

ADAMS ACCESSION NUMBER: ML15043A423

<input checked="" type="checkbox"/> SUNSI Review By:		ADAMS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	DRP: BC	DRP:SPE	DRP: SRI	DRP: RI	DRS: BC	DRS: BC	DRS: BC
NAME	MHay	BHagar	MSchneider	BCummings	GMiller	GWerner	VGaddy
SIGNATURE	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/	/RA/
DATE	2/10/15	1/15/15	1/20/15	2/6/15	1/16/15	1/20/15	1/20/15
OFFICE	DRS: BC	DRS: BC	DRS: BC	DRP:BC			
NAME	EReusch	MHaire	HGepford	MHay			
SIGNATURE	/RA/	/RA/	/RA/	/RA/			
DATE	1/13/15	1/13/15	1/20/15	2/11/15			

**OFFICIAL RECORD COPY**

Letter to Louis P. Cortopassi signed by Michael C. Hay, dated February 12, 2014

Subject: FORT CALHOUN - NRC INTEGRATED INSPECTION REPORT  
NUMBER 05000285/2014005

DISTRIBUTION:

Regional Administrator (Marc.Dapas@nrc.gov)  
Deputy Regional Administrator (Kriss.Kennedy@nrc.gov)  
DRP Director (Troy.Pruett@nrc.gov)  
Acting DRP Deputy Director (Thomas.Farnholtz@nrc.gov)  
DRS Director (Anton.Vegel@nrc.gov)  
DRS Deputy Director (Jeff.Clark@nrc.gov)  
Senior Resident Inspector (Max.Schneider@nrc.gov)  
Resident Inspector (Brian.Cummings@nrc.gov)  
Senior Project Engineer, DRP/D (Bob.Hagar@nrc.gov)  
FCS Administrative Assistant (Janise.Schwee@nrc.gov)  
RIV Public Affairs Officer (Victor.Dricks@nrc.gov)  
RIV Public Affairs Officer (Lara.Uselding@nrc.gov)  
NRR Project Manager (Fred.Lyon@nrc.gov)  
RIV Branch Chief, DRS/TSB (Geoffrey.Miller@nrc.gov)  
RIV RITS Coordinator (Marisa.Herrera@nrc.gov)  
RIV Regional Counsel (Karla.Fuller@nrc.gov)  
Congressional Affairs Officer (Jenny.Weil@nrc.gov)  
RIV Congressional Affairs Officer (Angel.Moreno@nrc.gov)  
OEWEB Resource (Sue.Bogle@nrc.gov)  
Technical Support Assistant (Loretta.Williams@nrc.gov)  
RIV/ETA: OEDO (Michael.Waters@nrc.gov)  
RIV RSLO (Bill.Maier@nrc.gov)  
ACES (R4Enforcement.Resource@nrc.gov)  
MC 0350 Panel Chairman (Anton.Vegel@nrc.gov)  
MC 0350 Panel Vice Chairman (Louise.Lund@nrc.gov)  
MC 0350 Panel Member (Michael.Balazik@nrc.gov)  
MC 0350 Panel Member (Michael.Markley@nrc.gov)  
ROPreports

Electronic Distribution via Listserv for Fort Calhoun Station

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 50-285  
License: DPR-40  
Report: 05000285/2014005  
Licensee: Omaha Public Power District  
Facility: Fort Calhoun Station  
Location: 9610 Power Lane  
Blair, NE 68008  
Dates: October 1 through December 31, 2014  
Inspectors: S. Schneider, Senior Resident Inspector  
B. Cummings, Resident Inspector  
B. Hagar, Senior Project Engineer  
R. Azua, Senior Project Engineer  
P. Elkmann, Senior Emergency Preparedness Inspector  
T. Buchanan, Operations Engineer  
S. Hedger, Operations Engineer  
F. Thomas, Project Engineer  
C. Roque-Cruz, Reactor Systems Engineer, Japan Lessons Learned  
Division  
Approved By: Michael C. Hay, Chief, Projects Branch D  
Division of Reactor Projects

## SUMMARY

IR 05000285/2014005; 10/01/2014 – 12/31/2014; Fort Calhoun Station, Maintenance Effectiveness, Maintenance of Emergency Preparedness

The inspection activities described in this report were performed between October 1 and December 31, 2014, by the resident inspectors at FCS, inspectors from the NRC's Region IV office, inspectors from the Region IV office, and inspectors at the office of Nuclear Reactor Regulation. Two findings of very low safety significance (Green) are documented in this report. These findings involved violations 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, "Aspects 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 an NCV of very low safety significance of 10 CFR 50.65 paragraph (a)(2) "Requirements for Monitoring the Effectiveness of Maintenance of Nuclear Power Plants," because the licensee did not demonstrate that performance of a component was being effectively controlled through appropriate preventive maintenance, and did not monitor the performance of the component against licensee-established goals to provide reasonable assurance that the component was capable of fulfilling its intended function. Specifically, the licensee failed to demonstrate that the performance of raw water system valve HCV-2875A was being effectively controlled through appropriate preventive maintenance and failed to monitor the valve's performance against licensee established goals when performance criteria were exceeded. Corrective actions taken for this violation included revising the Maintenance Rule performance criteria assessment for this component, classifying the component as 10 CFR 50.65 (a)(1), and specifying goals, corrective actions, and additional monitoring for the component.

The licensee's failure to demonstrate component performance through appropriate preventive maintenance, and the failure to identify that system performance criteria had been exceeded, and as a result, the failure to perform an evaluation of the system for 50.65 (a)(1) goals, corrective actions, and monitoring, was a performance deficiency within the licensee's ability to foresee and correct. The finding is more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the Cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to identify that valve HCV-2875A performance criteria had been exceeded resulted in a delayed assessment of this component and additional failures occurred in the intervening timeframe which adversely affected the overall reliability of the raw water system.

The inspectors screened the finding in accordance with NRC IMC 0609, Appendix A, “the Significance Determination Process (SDP) for Findings at Power.” Using IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” dated July 1, 2012, this finding is of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating system (2) did not represent a loss of system and/or function, (3) did not represent an actual loss of function of at least a single train or two separate safety systems out-of-service for greater than its TS allowed outage time; and (4) does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee’s maintenance rule program for greater than 24 hours. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution and the Evaluation aspect because the licensee failed to appropriately evaluate the preventive maintenance for valve HCV-2875A to demonstrate component performance and failed to correctly evaluate a functional failure against system performance criteria to ensure system goals, corrective actions, and monitoring were identified (P.2). (Section 1R12)

- Green. The NRC identified a Green non-cited violation for the licensee’s failure to determine the availability of year 2013 state and local population data in estimating annual changes in the plume exposure emergency planning zone population. The failure to determine whether State and/or local population data was available for 2013 was a performance deficiency within the licensee’s ability to foresee and correct. Appendix E to 10 CFR Part 50, Section IV.5, states, in part, that during the years between decennial censuses, nuclear power reactor licensees shall estimate emergency planning zone permanent resident population changes once a year using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. Contrary to the above, Fort Calhoun Station failed in 2013 to estimate emergency planning zone permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. Specifically, Fort Calhoun Station failed to determine whether State and local government population data was available prior to performing the analysis. The issue was entered into the licensee’s corrective action system as Condition Report 2014-12474.

This finding is more than minor because the issue is associated with procedure quality and offsite Emergency Preparedness cornerstone attributes and adversely affected the Emergency Preparedness cornerstone objective. The finding was evaluated using Manual Chapter 0609, Appendix B, “Emergency Preparedness Significance Determination Process,” dated February 24, 2014, and was determined to be of very low safety significance (Green) because it was a failure to comply with NRC requirements, was not a loss of planning standard function, and was not a degraded planning standard function. The planning standard function was not degraded because including state and local 2013 data would not have required the current emergency planning zone time estimate to be updated. There are no immediate safety or security concerns associated with this finding. This finding was assigned a cross-cutting aspect in the area of human performance associated with work management because the licensee failed to understand the scope of work performed by a contractor on their behalf, and failed to ensure the contractor fully complied with regulatory requirements (H.5). (Section 1EP5)

## PLANT STATUS

The unit began the inspection period at approximately 100 percent power. On December 17, 2014, the unit experienced an automatic reactor trip as a result of a loss of the main turbine generator. On December 20, operators performed a reactor startup and placed the unit on the grid on December 21. The unit achieved approximately 100 percent power on December 22, and operated at that power level for the remainder of the inspection period.

## REPORT DETAILS

### 1. REACTOR SAFETY

#### Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness for Seasonal Extreme Weather Conditions

###### a. Inspection Scope

On December 4, the inspectors completed an inspection of the station's readiness for seasonal extreme (cold) weather conditions. The inspectors reviewed the licensee's adverse weather procedures for seasonal low temperatures and evaluated the licensee's implementation of these procedures. The inspectors verified that prior to the onset of cold weather, the licensee had corrected weather-related equipment deficiencies identified during the previous cold-weather season.

The inspectors selected the following two risk-significant components that were required to be protected from cold-weather conditions:

- diesel-driven auxiliary feedwater pump
- boric acid storage tanks

The inspectors reviewed the licensee's procedures and design information to ensure the components would remain functional when challenged by cold weather. The inspectors verified that operator actions described in the licensee's procedures were adequate to maintain readiness of these systems. The inspectors walked down portions of these systems to verify the physical condition of the adverse weather protection features.

These activities constituted one sample of readiness for seasonal adverse weather, 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:

- October 3, emergency diesel generator #2 following maintenance
- October 28, steam driven auxiliary feedwater pump
- November 11, diesel driven auxiliary feedwater pump with the motor driven auxiliary feedwater pump out of service

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 systems 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 November 20, the inspectors performed a complete system walk-down inspection of the auxiliary feedwater (AFW) system. The inspectors reviewed the licensee's procedures and system design information to determine the correct AFW 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 accessible portions of the system were correctly aligned for the existing plant configuration.

This activity 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)**

### **.1 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 six plant areas important to safety:

- October 21, Room 15, shutdown cooling heat exchanger #1, Fire Area 6.6
- October 21, Room 14, shutdown cooling heat exchanger #2, Fire Area 6.5
- October 29, Room 54, battery room #1, Fire Area 37
- October 29, Room 55, battery room #2, Fire Area 38
- October 29, Room 41, cable spreading room, Fire Area 41
- December 4, Room 5, charging pump area, Fire Area 10

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 constituted six quarterly 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 December 3, 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 one plant area containing risk-significant structures, systems, and components that were susceptible to flooding:

- Room 22, safety injection pump room

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas 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.

This activity constitutes completion of one internal flood protection measures sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

**1R07 Heat Sink Performance (71111.07)**

a. Inspection Scope

On December 5, the inspectors completed an inspection of the readiness and availability of a risk-significant heat exchanger. The inspectors reviewed the data from a performance test for raw water/component cooling water heat exchanger AC-1D.

The inspectors reviewed the raw water / component cooling water heat exchanger AC-1D to determine its readiness and availability to perform safety functions. The inspectors reviewed the design basis for the components and verified Fort Calhoun's commitments to NRC Generic Letter 89-13, "Service Water Problems Affecting Safety Related Equipment." The inspectors reviewed the results of testing and cleaning of the heat exchanger. The inspectors reviewed the system health reports and verified the accuracy of those reports by reviewing data from recent testing and work orders associated with the heat exchanger. The inspectors verified that Fort Calhoun initiated appropriate corrective actions for identified deficiencies.

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 November 10, the inspectors observed an evaluated simulator scenario performed by an operating crew. 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 scenario.

This activity constitutes 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

For the plant activities listed below, 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 activity as described below. The inspectors observed the operators' performance of the following activities:

- October 13, performance of functional checks of steam generator low pressure bistable trips and safety injection loop valve contactor operating voltage checks
- November 22, performance of testing of the "B" safety injection/containment spray recirculation actuation systems
- December 20-21, performance of a reactor and plant startup and power ascension

In addition, the inspectors assessed the operators' adherence to plant procedures, including the conduct of operations procedure and other operations department policies.

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

b. Findings

No findings were identified.

.3 Biennial Review

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included 12 job performance measures and 1 scenario that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of 8 licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for 3 operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors", Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity, and existing logs of simulator deficiencies.

The licensee completed the required requalification examination on December 12, 2014, but will not have final results in time to meet the reporting requirements for the 2014005 resident inspectors report. The final results will be reported in January 2015 and will be included in the 2015001 resident inspectors report. Additionally, the inspectors are continuing to review operating test quality and simulator fidelity. The inspectors will compare the final inspection and examination results to the Appendix I, "Licensed Operator Requalification Significance Determination Process," values and determine if there are findings based on these results.

The inspectors completed one inspection sample of the biennial licensed operator requalification program, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

## 1R12 Maintenance Effectiveness (71111.12)

### a. Inspection Scope

The inspectors reviewed two instances of degraded performance or condition of safety-related structures, systems, and components (SSCs):

- November, 22, raw water discharge header isolation valve failure to open functional failure evaluation and Maintenance Rule (a)(1) determination
- December 4, component cooling water pumps, Maintenance Rule (a)(1) action plan

The inspectors reviewed the extent of condition of possible common cause SSC 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 SSCs. 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 two maintenance effectiveness samples, as defined in Inspection Procedure 71111.12

### b. Findings

Introduction. The inspectors identified an NCV of very low safety significance (Green) of 10 CFR 50.65 paragraph (a)(2), "Requirements for Monitoring the Effectiveness of Maintenance of Nuclear Power Plants," because the licensee did not demonstrate that performance of a component was being effectively controlled through appropriate preventive maintenance, and did not monitor the performance of the component against licensee-established goals to provide reasonable assurance that the component was capable of fulfilling its intended function. Specifically, the licensee failed to demonstrate that performance of valve HCV-2875A was being effectively controlled through the performance of appropriate preventive maintenance and did not monitor HCV-2875A performance against licensee-established goals when performance criteria were exceeded.

Description. On October 8, 2013, raw water system cross connect isolation valve HCV-2875A on the raw water pump discharge header failed to open on demand and the licensee initiated condition report (CR) 2013-18995. In that CR, the licensee concluded that the failure had been due to sand build-up, which they presumed to have been flushed away on subsequent valve manipulations. The licensee closed the CR on January 22, 2014. On January 26, 2014, HCV-2875A again failed to open on demand and the licensee initiated CR 2014-1159. HCV-2875A subsequently failed to open on demand on February 11, March 12, and July 17, 2014. On February 11, 2014, and in CR 2014-1159, the licensee concluded that the failure of HCV-2875A to open had been

a functional failure. However, the licensee did not conclude that this functional failure had exceeded the performance criteria, of zero allowed failures, contained in the raw water system Maintenance Rule scoping documents. Following the July 17, 2014 failure of HCV-2875A, the inspectors reviewed the performance history of the valve, including the functional failure evaluation documented in CR 2014-1159. The inspectors determined that this condition would have exceeded the performance criteria discussed in the raw water system Maintenance Rule scoping documents, and informed the licensee. The licensee re-evaluated the functional failure against the system performance criteria and determined that they should evaluate the system for 10 CFR 50.65 (a)(1) applicability, and presented this issue to the Maintenance Rule expert panel for review. On September 26, 2014, the licensee convened a Maintenance Rule expert panel, and the panel concluded that the system should be placed in 10 CFR 50.65 (a)(1) status, and that they should not only establish goals and corrective actions, but also specify system monitoring.

Analysis. The licensee's failure to demonstrate component performance through appropriate preventive maintenance and the failure to identify that system performance criteria had been exceeded and, as a result, the failure to perform an evaluation of the system for 10 CFR 50.65 (a)(1) goals, corrective actions, and monitoring, was a performance deficiency that was within the licensee's ability to foresee and correct. This performance deficiency is more than minor and is therefore a finding because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to demonstrate valve HCV-2875A performance through appropriate preventive maintenance had a direct impact on the valve's performance and the reliability of the raw water system. In addition, the failure to identify that HCV-2875A performance criteria had been exceeded and the associated failure to evaluate 10 CFR 50.65 (a)(1) goals and specify corrective actions and implement monitoring when the functional failure was first identified, resulted in a delayed assessment of this component. During that delay, additional failures occurred which adversely affected the reliability of the raw water system.

The inspectors initially screened the finding in accordance with NRC IMC 0609, Appendix A, "the Significance Determination Process (SDP) for Findings at Power." Using IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated July 1, 2012, the inspectors determined that this finding is of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating system (2) did not represent a loss of system and/or function, (3) did not represent an actual loss of function of at least a single train or two separate safety systems out-of-service for greater than its TS allowed outage time; and (4) does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution and the Evaluation aspect because the licensee failed to appropriately evaluate the preventive maintenance for valve HCV-2875A to demonstrate component performance and failed to correctly

evaluate a functional failure against system performance criteria to ensure system goals, corrective actions, and monitoring were identified (P.2).

Enforcement. 10 CFR 50.65(a)(1) requires, in part, that the holders of an operating license shall monitor the performance or condition of structures, systems, or components (SSCs) within the scope of the rule as defined by 10CFR 50.65(b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. 10 CFR 50.65 (a)(2) states, in part, that monitoring as specified in 10 CFR 50.65 (a)(1) is not required where it has been demonstrated that the performance or condition of an SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function.

Contrary to the above, after the licensee failed to demonstrate that the performance of valve HCV-2875A was being effectively controlled through the performance of appropriate preventive maintenance, the licensee did not appropriately monitor the component performance against licensee-established goals. Specifically, on February 11, 2014, after a functional failure of valve HCV-2875A, the licensee failed to identify that a raw water system performance criterion had been exceeded and that a 10 CFR 50.65(a)(1) evaluation was warranted. After the inspectors identified these issues, the licensee evaluated the raw water system for this functional failure and performance criteria exceedance and determined that goal setting, corrective actions, and monitoring under 10 CFR 50.65 (a)(1) was required. Corrective actions taken for this violation included revising the Maintenance Rule performance criteria assessment for this SSC, classifying the SSC as 10 CFR 50.65 (a)(1), and specifying goals, corrective actions (the licensee is currently evaluating HCV-2875A relay performance as a possible cause) and monitoring for the system. Because this violation was of very low safety significance and was entered into the licensee's corrective action program (CR 2014-1159 and 2014-9536), this violation is being treated as an NCV, consistent with section 2.3.2 of the NRC's Enforcement Policy. (NCV 05000285/2014005-01, Failure to Establish Appropriate Preventive Maintenance and Failure to Identify Raw Water SSC Maintenance Rule Performance Criteria Exceeded and thereby establish Monitoring requirements for the SSC).

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

#### **a. Inspection Scope**

The inspectors reviewed six 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:

- October 7, yellow risk during performance of backflow preventer maintenance on the potable water system
- October 9, yellow risk during performance of the diesel driven auxiliary feedwater pump performance test



- November 6, yellow risk due to a scheduled performance of the diesel driven auxiliary feedwater pump monthly full flow operability verification
- November 11, yellow risk associated with the No. 1 emergency diesel generator and the motor driven auxiliary feedwater pump being out of service for maintenance
- November 22, yellow risk during channel “B” safety injection, containment spray, and recirculation actuation signal test
- November 24, yellow risk during raw water system “B” strainer maintenance

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 based on the result of the assessments.

These activities constitute completion of six maintenance risk assessment 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 eight operability determinations and functionality assessments that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- October 15, operability determination of safety injection tank fill/drain line isolation valve SI-410 for containment integrity following discovery of inadequate testing
- October 3, functionality assessment of steam dump and bypass valve fast acting solenoids wired incorrectly
- November 5, operability determination of QualTech NP/EGS “Grayboot” connectors with shortened qualified lives
- November 7, operability determination of pinhole leak in the raw water piping pressure boundary

- November 14, operability determination of the component cooling water surge tank manual refill compensatory measures
- December 15, operability determination of chemical and volume control system charging pump CH-1C following abnormal metallic noise
- December 22, operability determination of auxiliary feedwater inboard isolation valve leakage
- December 30, operability determination of the “B” raw water strainer following discovery of no oil level indicated in reservoir.

The inspectors reviewed the timeliness and technical adequacy of the licensee’s evaluations. Where the licensee determined the degraded SSC 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 SSC.

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

b. Findings

No findings were identified.

**1R18 Plant Modifications (71111.18)**

a. Inspection Scope

The inspectors reviewed two temporary plant modifications that affected risk-significant structures, systems, and components (SSCs):

- October 30, containment spray pump discharge valves, HCV-2958, HCV-2968 and HCV-2978, temporarily throttled to limit flow and prevent run out of the containment spray pumps SI-3A, SI-3B, and SI-3C.
- December 2, temporary heating needed to maintain radiation monitors 50 and 51 operable.

The inspectors verified that the licensee had installed these temporary modifications in accordance with technically adequate design documents. The inspectors verified that these modifications did not adversely impact the operability or availability of affected SSCs. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

b. Findings

No findings were identified.

**1R19 Post-Maintenance Testing (71111.19)**

a. Inspection Scope

The inspectors reviewed four post-maintenance testing activities that affected risk-significant SSCs:

- October 9, emergency diesel generator No. 2 jacket water immersion heater repair
- October 10-20, emergency diesel generator No. 2, 12 year preventative maintenance including fuel oil pump replacement
- October 24, "A" component cooling water pump rebuild
- December 1, "A" charging pump cylinder block replacement

The inspectors reviewed licensing and design basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests and/or reviewed the test results 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 SSCs.

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

b. Findings

No findings were identified.

**1R20 Refueling and Other Outage Activities (71111.20)**

a. Inspection Scope

During the forced outage that concluded on December 22, 2014, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed personnel fatigue, and developed mitigation strategies for key safety functions. This verification included the following:

- Review of the licensee's outage plan
- Monitoring of shut-down activities

- Verification that the licensee maintained defense-in-depth during outage activities
- Monitoring of startup and power ascension activities

This activity constituted completion of one outage activities sample as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

The inspectors observed nine risk-significant surveillance tests and/or reviewed the test results to verify that these tests adequately demonstrated that the SSCs were capable of performing their safety functions:

In-service tests:

- October 8, raw water instrument air check valve test
- November 24, raw water system category A and B valve tests

Containment isolation valve surveillance tests:

- November 24, component cooling water category A and B valve exercise test (for the C and D Valves) – Containment Isolation Valve (CIV) Test
- December 1, Auxiliary feedwater system quarterly category A and B valve CIV test

Reactor coolant system leak detection tests:

- November 17, reactor coolant system leak rate test

Other surveillance tests:

- October 6, emergency diesel generator No. 2 surveillance test
- October 30, auxiliary feedwater pump, steam isolation valve and check valve tests
- November 11, diesel driven auxiliary feedwater pump operability verification

- November 22, channel “B” safety injection, containment spray and recirculation actuation signal 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 SSCs following testing.

These activities constitute completion of nine 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 inspector verified the adequacy of the licensee’s methods for testing the primary and backup alert and notification system (ANS). The inspector interviewed licensee personnel responsible for the maintenance of the primary and backup ANS and reviewed a sample of corrective action system reports written for ANS problems. The inspector compared the licensee’s alert and notification system maintenance and testing programs 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, “Omaha Public Power District Updated Design Report to FEMA for the Outdoor Public Warning System and Backup Alert and Notification,” dated April 29, 2013. Specifically, the inspector reviewed the licensee’s replacement of siren radio systems.

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 inspector verified the licensee’s emergency response organization on-shift and

augmentation staffing levels were in accordance with the licensee's emergency plan commitments. The inspector 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 inspector 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.

**1EP5 Maintenance of Emergency Preparedness (71114.05)**

a. Inspection Scope

The inspector reviewed the licensee's program for maintaining site emergency preparedness capabilities for the period December 2012 through September 2014 including,

- 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

The inspector reviewed summaries of 831 corrective action program reports associated with emergency preparedness and selected 18 to review against program requirements, to determine the licensee's ability to identify, evaluate, and correct problems in

accordance with the requirements of planning standard 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E, IV.F. The inspector verified that the licensee accurately and appropriately identified and corrected emergency preparedness weaknesses during critiques and assessments.

The inspector reviewed summaries of 154 licensee evaluations of the impact of changes to the emergency plan and implementing procedures 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 10 CFR 50.54(q)(4).

The inspector verified that the licensee had properly implemented an alternate facility for mustering in the event that access to the site was not available in accordance with the requirements of Appendix E to 10 CFR Part 50, Section IV.E(d). The inspector verified that the licensee had implemented a process for determining protective action recommendations for the public which considered the results of Evacuation Time Estimate studies in accordance with the requirements of Appendix E to 10 CFR Part 50, Section IV.3. The inspector verified that the licensee had performed an analysis of the duties of on-shift emergency response organization personnel in accordance with the requirements of Appendix E to 10 CFR Part 50, Section IV.A(9), and properly maintained that analysis. The inspector verified that the licensee had determined whether an update to the current Emergency Planning Zone (EPZ) evacuation time-estimate study was required in accordance with the requirements of Appendix E to 10 CFR Part 50, Section IV.5.

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

Introduction. The inspector identified a Green non-cited violation for the licensee's failure to determine the availability of 2013 state and local population data for use in estimating annual changes in the plume exposure EPZ (emergency planning zone) population, as required by Appendix E to 10 CFR 50, Section IV.5.

Description. The NRC identified that Fort Calhoun Station failed to determine the availability of 2013 state and local population data for use in estimating annual changes in the plume exposure EPZ population.

The inspector performed an on-site review of the 2013 population update analysis performed for Fort Calhoun Station by KLD Engineering, Inc., document KLD TR-602, dated December 15, 2013, and determined that the contractor had estimated the 2013 population of the plume exposure EPZ using 2010 U.S. Census Bureau data and the most recent county and municipality population estimates available on the U.S. Census Bureau QuickFacts website. The contractor's report stated that the most recent population estimates available from the Census Bureau in December 2013 were for the period April 2010 through July 2012. The inspector interviewed the licensee's

emergency preparedness manager and Emergency Preparedness Supervisor and determined that the licensee was unaware of any contacts between the licensee's contractor and EPZ counties or municipalities made for the purpose of obtaining current 2013 population data. The Emergency Preparedness Manager subsequently requested information from the contractor about their efforts in 2013 to obtain current population information for EPZ counties and municipalities, and was informed that the contractor made no effort in 2013 to determine whether current population data was available from local sources. Therefore, the licensee's contractor performed the 2013 analysis using data that was approximately 18 months out-of-date.

The inspector determined that Appendix E to 10 CFR 50, Section IV.5 stated that the licensee shall estimate EPZ permanent resident population changes once a year using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. Therefore, consideration of State/local population data is required whenever such data is available. A licensee may not rely exclusively on Census Bureau data, especially when the Census Bureau data is not current to the year for which the population is being estimated. The inspector concluded that the licensee's failure to determine whether State/local data was available prevented the licensee from considering such data as required by the regulation.

Analysis. The failure to determine the availability of state and local population data for use in estimating annual changes in the plume exposure EPZ population is a performance deficiency within the licensee's ability to foresee and correct. This finding is more than minor because the issue is associated with procedure quality and offsite EP cornerstone attributes and adversely affected the Emergency Preparedness cornerstone objective. The licensee may not be capable of implementing adequate measures to protect the health and safety of the public if EPZ evacuation time estimates are not properly maintained because licensee protective action strategies are informed by, and consider, EPZ evacuation times. This finding was evaluated using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated February 24, 2014, and was determined to be of very low safety significance (Green) because it was a failure to comply with NRC requirements, was not a loss of planning standard function, and was not a degraded planning standard function. The planning standard function was not degraded because including state and local 2013 data would not have required the current EPZ time estimate to be updated. This finding was assigned a cross-cutting aspect in the area of human performance associated with work management because the licensee failed to understand the scope of work performed by a contractor on their behalf, and failed to ensure the contractor fully complied with regulatory requirements (H.5).

Enforcement. Appendix E to 10 CFR 50, Section IV.5, states, in part, that during the years between decennial censuses, nuclear power reactor licensees shall estimate EPZ permanent resident population changes once a year using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. Contrary to the above, Fort Calhoun Station failed in 2013 to estimate EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if



available. Specifically, Fort Calhoun Station failed to determine whether State and local government population data was available prior to performing the analysis. Because this failure is of very low safety significance and has been entered into the licensee's corrective action system as Condition Report 2014-12474, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy, Section 2.3.2.a: NCV 05000285/2014005-02, "Failure to determine the availability of local population data for use in estimating changes in the EPZ population."

#### **1EP6 Drill Evaluation (71114.06)**

##### Training Evolution Observation

###### a. Inspection Scope

On November 10, the inspectors observed simulator-based licensed operator requalification training that included implementation of the licensee's emergency plan. The inspectors verified that the licensee's emergency classification and off-site notifications were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the evaluators and entered into the corrective action program for resolution.

This activity constituted completion of one training observation sample, as defined in Inspection Procedure 71114.06

###### b. Findings

No findings were identified.

#### **4OA1 Performance Indicator Verification (71151)**

##### **.1 Drill/Exercise Performance (EP01)**

###### a. Inspection Scope

The inspector reviewed the licensee's evaluated exercises, emergency plan implementations, and selected drill and training evolutions that occurred between July 2013 and September 2014 to verify the accuracy of the licensee's data for classification, notification, and protective action recommendation (PAR) opportunities. The inspector reviewed a sample of the licensee's completed classifications, notifications, and PARs to verify their timeliness and accuracy. The inspector used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data. The specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.2 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspector reviewed the licensee's records for the participation of key emergency response organization members in drill and training evolutions between July 2013 and September 2014 to verify the accuracy of the licensee's data for drill participation opportunities. The inspector verified that all members of the licensee's emergency response organization (ERO) in the identified key positions had been counted in the reported performance indicator data. The inspector reviewed the licensee's basis for reporting the percentage of ERO members who participated in a drill, reviewed drill attendance records, and verified a sample of those reported as participating. The inspector used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported. The specific documents reviewed are described in the attachment to this report.

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.

.3 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspector reviewed the licensee's records of Alert and Notification System tests conducted between July 2013 and September 2014 to verify the accuracy of the licensee's data for siren system testing opportunities. The inspector reviewed procedural guidance on assessing Alert and Notification System opportunities and the results of periodic alert and notification system operability tests. The inspector used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported. The specific documents reviewed are described in the attachment to this report.

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.

## 40A2 Problem Identification and Resolution

### .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

The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, nuclear oversight 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.

This activity constituted completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

#### b. Observations and Assessments

The inspectors identified a declining trend in Maintenance Rule program performance and a continuing need for improvement in design control, operability determination quality, and corrective action program implementation. The inspectors also identified an improving trend in the risk assessment process implementation and management.

#### c. Findings

No findings were identified.

### .3 Annual Follow-up of Selected Issues: Modifications to Protect Equipment from Tornado Missiles

a. Inspection Scope

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

- On December 3, modifications to the emergency diesel generator fuel oil tank to adequately protect it from tornado missiles.

The inspectors assessed the licensee's problem identification threshold, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to protect the emergency diesel generator fuel oil tank from tornado missiles.

b. Findings

No findings were identified.

**40A3 Follow-up of Events and Notices of Enforcement Discretion**

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems as applicable. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in Inspection Manual Chapter 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that the licensee made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed the licensee's follow-up actions related to the events to assure that the licensee implemented appropriate corrective actions commensurate with their safety significance.

- On December 17, 2014, the Fort Calhoun Station experienced an unplanned reactor trip from 100 percent power due to loss of the turbine generator. The inspectors responded to the control room and verified that the plant systems responded as designed and that the operators stabilized the plant in accordance with station procedures. The cause of the reactor trip was a generator lockout/turbine trip caused by actuation of a sudden pressure relay on the unit auxiliary transformer T1A-2. The actuation of the sudden pressure relay resulted in a loss of 345 kV line feeding the unit auxiliary transformers T1A-1 and T1A-2.
- On October 23, 2014, the Fort Calhoun Station entered an unplanned 12 hour technical specification shutdown action statement for having both Reactor Protection System B and D inverters inoperable at the same time.

These activities constitute completion of two event follow-up samples, as defined in Inspection Procedure 71153.

b. Findings

No findings were identified.

**40A4 IMC 0350 Inspection Activities (92702)**

.1 Flooding Recovery action Plan Items

On December 17, 2013, the Nuclear Regulatory Commission issued a Confirmatory Action Letter to FCS (ML13351A395). The Confirmatory Action Letter confirms the commitments in the December 2, 2013, Omaha Public Power District (OPPD), "Integrated Report to Support Restart of FCS and Post-Restart Commitments for Sustained Improvement." In the report, OPPD committed to take actions following restart of the FCS to ensure the improvements realized during the extended outage remain in place and performance continues to improve at the facility. Included in the commitments are completing actions detailed in the Flooding Recovery Action Plan.

Flooding Recovery Action Plan items 4.4.3.1 (Gather flood response lessons learned through CR reviews to determine if procedure or strategy changes should be implemented), 4.4.3.2 (Review flood design basis and determine if the 2011 flood event provides additional information that should drive design basis changes), and 4.4.3.3 (Implement procedure and strategy changes as indicated by the lessons learned review conducted) were reviewed as part of this inspection activity. The purpose of these three action items was to gather information to determine if changes to the flood design basis and procedures were necessary, and implement those changes. All three action items were determined to be long term action items following reactor startup.

In section 40A4.1 of NRC inspection report 05000285/2014004, the NRC closed the subject action items to the actions detailed in NRC Order EA-12-049 (ML12056A045). However, the NRC recently acquired information that indicated that the licensee has completed the subject action items and were ready for NRC review.

Therefore, the NRC has decided to re-open action items 4.4.3.1, 4.4.3.2, and 4.3.3.3 as described in the Flood Recovery Action Plan and the December 17, 2013, Confirmatory Action Letter. The NRC plans to inspect the licensee's response to the subject action items in the near future, and to close those items, if warranted, in a future inspection report(s).

**40A5 Other Activities**

.1 Temporary Instruction 2515/190 – Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations.

The inspectors completed a partial verification that the licensee's interim actions would perform their intended function for some beyond-design-basis flooding events. However, the licensee has determined that additional flooding mitigation strategies and equipment

will be necessary to address the full spectrum of potential beyond-design-basis flooding events at the Fort Calhoun Station. As a result, the NRC plans to perform an additional inspection activity using TI 2515/190 following the completion of the licensee's review, to verify that the additional strategies and equipment will perform their intended function for flooding mitigation.

The inspectors independently verified that the licensee's proposed interim actions would perform their intended function for flooding mitigation for some beyond design basis flooding events.

- Visual inspection of the flood protection equipment was performed.
- Simulations of flooding mitigation strategies were observed including a tabletop exercise conducted by operations personnel.
- Flood protection feature equipment functionality was determined using visual observations and/or by review of procedures and design documents.

The inspectors verified that issues identified during this inspection were entered into the licensee's corrective action program.

#### **4OA6 Meetings, Including Exit**

##### Exit Meeting Summary

On October 10, the inspector presented the results of the on-site inspection of the emergency preparedness program to Mr. E. Dean, Plant Manager, 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 November 20, the inspectors briefed Sonny Dean, Plant Manager, and other members of the licensee's staff of the preliminary results of the licensed operator requalification program inspection. An exit will be conducted telephonically with members of the licensee staff once results of the operating tests and written exams are submitted in January. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 13, 2015, the inspectors presented the integrated inspection results to Mr. Lou Cortopassi and other members of the licensee's staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

S. Anderson, Manager, Design Engineering  
D. Bakalar, Manager, Security  
J. Bousum, Manager, Emergency Planning and Administration  
C. Cameron, Supervisor Regulatory Compliance  
L. Cortopassi, Site Vice President  
E. Dean, Plant Manager  
S. Fatora, Director, Site Work Management  
M. Ferm, Manager, System Engineering  
H. Goodman, Director, Site Engineering  
R. Hugenroth, Supervisor Nuclear Oversight  
K. Ihnen, Manager, Site Nuclear Oversight  
S. Kalra, Acting Manager, System Engineering  
K. Kingston, Manager, Chemistry  
J. Lindsey, Director, Training  
R. Lowery, Senior Operations Training Instructor  
K. Maassen, Program Engineer, GL 89-13  
T. Maine, Manager, Radiation Protection  
E. Matzke, Senior Licensing Engineer  
J. McManis, Manager Engineering Programs  
T. Nguyen, Senior Engineer, Systems Engineering  
T. Palan, Director, Maintenance  
R. Peter, Licensing Coordinator  
C. Scofield, Senior Nuclear Design Engineer-Mechanical  
S. Shea, Manager, Operations Training  
J. Short, Manager, Instrument and Control Maintenance  
T. Simpkin, Manager, Site Regulatory Assurance  
S. Swanson, Director, Operations  
T. Uehling, Assistant Plant Manager  
C. Verdoni, Supervisor, Operations Training (Requal)

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000285/2014005-01	NCV	Failure to establish Appropriate Preventive Maintenance and Failure to Identify Raw Water SSC Maintenance Rule Performance Criteria Exceeded and thereby establish Monitoring Requirements for the SSC (Section 1R12)
05000295/2014005-02	NCV	Failure to determine the availability of local population data for use in estimating changes in the EPZ population (Section 1EP5)

## LIST OF DOCUMENTS REVIEWED

### Section 1R01: Adverse Weather Protection

#### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
WC-AA-107	Seasonal Readiness	13
OI-EW-1	Extreme Weather	29

#### Condition Reports (CRs)

2013-20276	2014-04328	2014-11806	2014-12439
2014-13524	2014-13657		

#### Work Orders

515673 01	518296 01
-----------	-----------

### Section 1R04: Equipment Alignment

#### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OI-AFW-1	Auxiliary Feedwater Actuation System Normal Operation	83
OI-AFW-4	Auxiliary Feedwater Startup and System Operation	88
USAR 9.4	Auxiliary Feedwater System	22



Condition Reports (CRs)

2014-01919

<u>Drawings</u>	<u>Title</u>	<u>Revision</u>
11405-M-252	Sh. 1, Flow Diagram Steam P&ID	113
11405-M-253	Sh. 4, Steam Generator Feedwater and Blowdown P&ID	41
11405-M-254	Sh. 2, Condensate P&ID	41

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	System Health Report Q3 AFW System	
	AFW Functional Scoping Data Sheets	
	List of Open System Work Orders for AFW System	
	List of Open Condition Reports for AFW System	

**Section 1R05: Fire Protection**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
FHA-EA-97-001	Fire Hazards Analysis (FHA) Manual	17
SO-G-28	Station Fire Plan	87
SO-G-91	Control and Transportation of Combustible Material	30
USAR 9.11	Fire Protection System	25

<u>Drawings</u>	<u>Title</u>	<u>Revision</u>
B-4347	Sh. 1, Penetration Typical Piping thru Sleeve	6
B-4347	Sh. 2, Penetration Typical Conduit/Tubing/Piping	2

Condition Reports (CRs)

2014-12117

## Section 1R06: Flood Protection Measures

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EA08-010	Internal Flooding	0
ALION-REP- OPPD-3173-027	Engineering Analysis for OPPD Internal Flooding Design Bases	0

## Section 1R07: Heat Sink Performance

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SE-ND-HX-0100	Eddy Current Testing of Heat Exchanger Tubes	4
PE-ER-CCW- 0100	Disassembly, Clean and Repair of CCW Heat Exchanger	38

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
LIC-90-0050	OPPD Response to Generic Letter 89-13	
NOD-QP-34	Ongoing Commitment Program	
LIC-92-330	Generic Letter 89-13 Completion of Recommended Actions	
USAR 9.7	Component Cooling Water System	16

### Condition Reports (CRs)

2014-04094

### Work Orders

416585            494834            469475

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	System Health Report Q3 Raw Water System	
	System Health Report Q3 CCW System	

**Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
84209C	Simulator Evaluation Guide	
TQ-AA-150	Operator Training Programs	10
TQ-AA-155	Conduct of Simulator Training and Evaluation	3
OPD-3-11	License Activation and Watchstation maintenance	19
SO-G-64	Medical Examination Program for worker qualification	35
SO-O-42	Notification to the NRC of Licensed Personnel Disability, Permanent Reassignment, or Termination	8
OP-AA-105-102	NRC Active License Maintenance	11
TQ-FC-JA-201-01	Appendix B – Initial and Annual NRC Exam, In-Plant Security Checklist	0
TQ-JA-150-03	JPM Briefing Job Aid	3
TQ-AA-201-F-02	Exam Proctor Checklist	4
TQ-JA-150-22	LORT Written Exam Briefing	3
TQ-AA-224	Exelon Nuclear Training – Implementation Phase	8
FC-1300A	Instructions for Completing Medical Examinations	6
TQ-JA-150-20	LORT Annual Exam Development Job Aid	7
TQ-AA-201	Exam Security and Administration	15
TQ-AA-306	Simulator Management	7
OPD-3-11	License Activation and Watchstation maintenance	19

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u> <u>Date</u>
Test No. 14.5.3.3.4	Steady State accuracy test at 30 Percent Power	December 16, 2014
JPM Number P- 0719	Startup Hydrogen Purge system	14
JPM Number P- 450-F1	Emergency start of the diesel power pump – alternate path	10

JPM Number S-0006-F5	SPTA with a loss of all CCW (Faulted)	0 (2013, Crew B)
JPM Number S-0785	AOP – 18 Raw water leak on east header	0 (2013, Crew B)
JPM Number A-0362-15	No ATWS-Rx trip from clutch power Supply breakers	0 (2013, Crew B)
JPM- Number P-0030F	Respond to loss of instrument air	0 (2013, Crew B)
JPM Number P--0028	AOP-9. High radioactivity local operation	0 (2013, Crew B)
TQ-FC-302-0110	Fort Calhoun Simulator Transient Testing (TR-5), Trip of Any Single Reactor Coolant Pump	November 13, 2014
TQ-FC-302-0115	Fort Calhoun Simulator Transient Testing (TR-10), Slow Primary System Depressurization to Saturated Condition using Pressurizer Relief Stuck Open	November 13, 2014
TQ-FC-302-0111	Fort Calhoun Simulator Transient Testing (TR-6), Turbine Trip From Maximum Power Level Does Not Result in Immediate Reactor Trip	November 13, 2014
TQ-FC-302-0116	Fort Calhoun Simulator Transient Testing (TR-11), Maximum Design Load Rejection	November 13, 2014
CR 2014-06086		June 24, 2014
Test No: 14.5.4.11	Loss of Load	December 19, 2014
CR 2014-01672	Fort Calhoun Station Corrective Action Program Apparent Cause Analysis Report, Tier 1m, INPO Operations CPE AFI (OP.1), Shift managers Not Effectively Implementing the Emergency Plan in Dynamic Situations	March 20, 2014
RQCT-1423	Emergency Plan “High Intensity Training”	0
TQ-FC-302-0116	Fort Calhoun Simulator Transient Testing (TR-1), Manual Reactor Trip	November 13, 2014
TQ-FC-302-0108-	Fort Calhoun Simulator Transient Testing (TR-3), Simultaneous Closure of Both main Steam Isolation Valves	November 13, 2014
TQ-FC-302-0109	Fort Calhoun Simulator Transient Testing (TR-4), Simultaneous Trip of All Reactor Coolant Pumps	November 13, 2014
TQ-FC-302-0110	Fort Calhoun Simulator Transient Testing (TR-5), Trip of Any Single Reactor Coolant Pump	November 13, 2014

TQ-FC-302-0115	Fort Calhoun Simulator Transient Testing (TR-10), Slow Primary System Depressurization to Saturated Condition Using Pressurizer Relief Stuck Open	November 13, 2014
TQ-FC-302-0107	Fort Calhoun Simulator Transient Testing (TR-2), Simultaneous Trip of All main Feedwater Pumps	November 13, 2014
TQ-FC-302-0111	Fort Calhoun Simulator Transient Testing (TR-6), Turbine Trip From maximum Power Level Does Not Result in Immediate Reactor Trip	November 13, 2014
TQ-FC-302-0116	Fort Calhoun Simulator Transient Testing (TR-11), Maximum Design Load Rejection	November 13, 2014
CR 2014-06086	Fort Calhoun Station Corrective Action Program Apparent Cause Analysis Report, Tier 1, Simulator Testing and Fidelity NOS Finding	June 24, 2014
Test no: 14.5.4.11	Loss of Load	December 19, 2012
CR 2014-01672	Fort Calhoun Station Corrective Action Program Apparent Cause Analysis Report, Tier 1, INPO Operations CPE AFI (OP 1), Shift Managers Not Effectively Implementing the Emergency Plan in Dynamic Situations	March 20, 2014
RQCT-1423	Emergency Plan "High Intensity Training"	0
TQ-FC-302-0106	Fort Calhoun Simulator Transient Testing (TR-1), manual Reactor Trip	November 13, 2014
TQ-FC-302-0108	Fort Calhoun Simulator Transient Testing (TR-3), Simultaneous Closure of Both main Steam Isolation Valves	November 13, 2014
TQ-FC-302-0109	Fort Calhoun Simulator Transient Testing (TR-4), Simultaneous Trip of All Reactor Coolant Pumps	November 13, 2014
TQ-FC-302-0112	Fort Calhoun Simulator Transient Testing (TR-7), Maximum Rate Power Ramp 100 Percent to 75 Percent to 100 Percent	November 13, 2014
TQ-FC-302-0113	Fort Calhoun Simulator Transient Testing (TR-8), Maximum Size Reactor Coolant System Rupture Combined with a Loss of All Offsite Power	November 13, 2014
TQ-FC-302-0114	Fort Calhoun Simulator Transient Testing (TR-9), Maximum Size Unisolable Main Steam line Rupture	November 13, 2014
TQ-AA-306-F-20	Simulator Scenario Based Testing Checklist Licensed Operator Requalification Simulator Scenario Emergency Plan Implementing Procedures	1

	Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline	7
RA 2013-3620	Focused Area Self-Assessment: 71111.11b Compliance	October 31, 2014
	Week 1 RO Written Examination	
	Week 1 SO Written Examination	
	Week 2 Simulator Scenario	September 18, 2014
	Sniff Test Completion Dates/Results	
	Computer Usage Expectation for Operations Training Exam	June 23, 2014
	Licensed Operator Remediation Packages	
	Licensed Operator Reactivation Packages	

Condition Reports (CRs)

2013-05070	2013-05570	2013-16631	2013-19712	2013-23048
2014-01221	2014-01671	2014-01672	2014-05108	2014-06806
2014-09826	2014-11190	2014-11379	2014-11493	2014-12933
2014-14104	2014-14105	2014-14148	2014-14190	

**Section 1R12: Maintenance Effectiveness**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
ER-AA-310-1005	Attachment 3, (a)(1) Action Plan Development and Action Plan (Monitoring) Goal setting template, for component cooling water system	7

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
	Raw Water System Maintenance Rule Scoping Document	
	Maintenance Rule Expert Panel Meeting Minutes	

Condition Reports (CRs)

2014-1159            2014-09533            2014-9536            2014-14203  
2014-11045

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
WC-AA-104	Integrated Risk Management	21
WC-AA-101	On-Line Work Control Process	23
FCSG-19	Performing Risk Assessments	17
SO-G-123	Protected Equipment Program	8
WC-AA-101	On-Line Work Control Process	23
OP-ST-ESF-0010	Channel "B" Safety Injection, Containment Spray and Recirculated Activation Signal Test	
RG 1.160	Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	39
OP-PM-AFW-004	Third Auxiliary Feedwater Pump Operability Verification	39
ER-AA-600-1011	Risk Management Program	13
NUMARC 93-01	Evaluation of Systems to be Removed from Service	2

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Diesel Generator No. #1 Maintenance Outage Risk Assessment Plan	
	Equipment Out of Service Quantitative Risk Assessment Tool	
	Work Schedule for the Week commencing 11/24/14	

Condition Reports (CRs)

2014-13817

Work Orders

513901            4772531

**Section 1R15: Operability Determinations and Functionality Assessments**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MM-RR-CCW-0001	Inspection and Overhaul of Component Cooling Water Pumps	0A
OP-ST-Cont-0002	Secured Closed, Containment Penetration Isolation Verification	8
SO-O-44	Administrative Controls for locking of Components	118
K-ST-AE-3122	Type C local Leak Rate Test of Penetration M-22	26
OEC-14983	Operability Evaluation of M-22 Containment Penetration	
OP-FC-108-115	Operability Determinations	0A
EA 08-20	Design, Licensing Basis of the Component Cooling Water System Surge Tank	2
ER-AA-1200	Critical Component Failure Clock	11
ARP-CB-1,2,3	AZ, Fort Calhoun Station Annual Star Response Procedure	
OP-ST-AFW-3010	Auxiliary Feedwater System Quarterly Category A and B Valve Exercise Test	11
SE-ST-CONT-0003	Compilation and Evaluation of Type B and Type C Local Leak Rate Test Results	3a

Condition Reports

2014-13370	2014-13509	2014-11888	2014-13678	2014-12420
2014-12700	2014-12708	2014-14502	2014-14624	2014-14641
2014-15474	2014-15336	2013-21956	2013-21969	2014-15671
2014-15742				

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
USAR-5.9	Containment Penetration	15



<u>Number</u>	<u>Title</u>	<u>Revision</u>
USAR-5.1	Containment Structure	4
USAR 9.2	Chemical and Volume Control System	27
USAR 9.4	Auxiliary Feedwater System	22
USAR 9.8	Raw Water System	34
Regulatory Guide 1.163	Performance Based Leak Test Program	
OPPD Memo dated April 17, 1973	Type C Containment Isolation Valve Testing	
OPPD Letter dated February 13, 1987	Review and Acceptance of Amendment 95 to Facility Operating License DPR-40	
10 CFR 50, Appendix J	Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors	
FC-SURV-001	Risk Assessment for Missed Surveillance Containment Penetrations M-90, -91, -92, and -95	1
TS 3.5	Containment Test  Engineering Analysis of Condition described in CR 2014- 11888  Main Steam Safety Valve Setpoint Testing  Steam Generator Pressure Traces following the March 17, 2014 Plant Trip  Operability Evaluation for CR 2014-13370  Code Case N513-3 Calculations	
LIC-14-0117	OPPD Letter  Operability Evaluation for Condition Reports  Summary of Auxiliary Feedwater Inlet Valve (HCV- 1108A) Leakage	October 20, 2014

Drawings

E-23866-210-130 Safety Injection + CSS flow diagram

## Section 1R18: Plant Modifications

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SO-G-91	Control and Transportation of Combustible Materials	30
PED-GEI-7.1	Test Requirement Summary, EC 63149	0
SO-O-25	Temporary Modification Control	85

### Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Temporary Modification Control Form, Engineering Change 63149 Install Temporary Heaters for Radiation Monitors RM-50/51	
50.59	Review Form for EC63149, Install Temporary Heaters for Radiation Monitors RM-050/051	

### Condition Reports (CRs)

2013-21168      2014-00566      2014-14629      2014-14638

## Section 1R19: Post-Maintenance Testing

### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MM-RR-CCW-0001	Inspection and Overhaul of Component Cooling Water pumps	
WC-AA-104	Integrated Risk Screening	
SE-ST-CCW-3002	CCW Pump Base Line Curve Procedure	
MM-PM-DG-0002	Preventive maintenance Diesel Generator DG-2 Inspection	
MM-RR-CH-0001	Inspection and Repair of charging pump hydraulic section	10
PED-GEI-55.7	Documentation for an ASME, Section XI Repair/Replacement Activity, 14-7-018	13
MA-AA-716-012	Post maintenance testing	19
OP-ST-CH-3003A	Chemical and volume control system pump/Check valve In-Service Test for "A train"	

Condition Reports (CRs)

2014-12231      2014-12232

Work Orders

00466197-02      00346711      00468663      00535104      00536660  
00537249      00537545      00537480      00537545

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
B120F14501	Sheet 1, Schematic Engine Control,	14
D12628	Leakage collection chamber kit	3
DW-4252	Sheet 6 of 6, charging pipe drawing	

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
USAR-9.7	Component Cooling Water System	
TDB 111.26A	Diesel Generator Loading Curve	
USAR 8.4	Electrical Systems, Emergency Power Sources	
TS 2.7	Electrical Systems	
TS 3.7	Emergency Power System Periodic Tests	
MAL	Maintenance Alteration Log	9/30/2014
Lifted Lead	Lifted Lead Log	9/30/2014

Work Orders

00346711

**Section 1R20: Refueling and Other Outage Activities**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP-AA-106-101-1006	Issue Resolution Documentation form for transformer T1A-2 resolution	14
EC 65152	Remove sudden pressure trip function of 63FPXA/T1A-2 and 63F8 Seal-In relay "A"	

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SO-O-46	Post trip reviews	18
EC 65142	Remove the time delay function from T1A-2 Asco switch	
OP-4	Load change and normal power operation	51
OP-1	Master checklist for plant start-up	114
OP-2A	Plant startup	118

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
USAR 5.9	Containment Penetration	15

Condition Reports (CRs)

2014-15502	2014-15528	2014-15533	2014-15539	2014-15471
2014-15250	2014-15324	2014-15332	2014-15313	2014-15316
2014-15320	2014-15321	2014-15325	2014-15327	2014-15327
2014-15336	2014-15339	2014-15343	2014-15365	2014-15377
2014-15400	2014-15363	2014-15391	2014-15416	2014-15417
2014-15420	2014-15423	2014-15431	2014-15433	2014-15449
2014-15463	2014-15469			

**Section 1R22: Surveillance Testing**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
IC-ST-IA-3003C	Raw Water Instrument Air Accumulator Check Valve Operability Test	
OP-ST-DG-0002	Emergency Diesel Generator #2 Check	77
OP-PM-AFW-0004	Third Auxilliary Feedwater Pump Operability Verification	39
OP-ST-RC-3001	Reactor Coolant System Leak Rate Test	37
ER-AP-331-1003	Reactor Coolant System Leakage Monitoring and Action Plan	

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP-ST-AFW-3011	Auxiliary Feedwater Pump FW-10, Steam Isolation Valve and Check Valve Tests	22
OP-ST-RW-3002B	Raw Water System Category A and B Exercise Test	15
OP-ST-CCW-3006B	Component Cooling Water Category A and B Exercise Test	0a
OP-ST-ESF-0010	Channel B Safety Injection, Containment Spray, and Recirculation Actuation Signal Test	58
OP-ST-AFW-3010	Auxiliary Feedwater System Quarterly Category A and B Valve Exercise Test	11

Condition Reports (CRs)

2008-2744	2014-01460	2014-06662	2014-11700	2014-13994
2014-13659	2014-11887	2013-22023	2014-11898	2014-09478
2014-00072	2014-10076	2013-22757	2014-7614	2013-19478
2012-15755	2014-14065	2014-13150	2014-14312	

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u> <u>Date</u>
USAR 4.5.6.5	ISI Program	
USAR 9.8	Raw Water System	30
USAR 4.5	Reactor Coolant System	23

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u> <u>Date</u>
11405-M-100	Sh. 1, Raw Water System Flow Diagram P&ID	103
11405-M-40	Sh. 1, Component Cooling System Diagram P&ID	36

Work Orders

516518	00519018	51761801
--------	----------	----------

## Section 1EP2: Alert and Notification System Testing

### Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision/ Date</u>
EP-FC-121-AD-F-03	Alert Notification System Silent Test	0
EP-FC-121-AD-F-04	Alert Notification System Growl Test	1
EP-FC-121-AD-F-05	Alert Notification Complete Cycle Test	0
EP-FC-121-AD-F-06	Alert Notification System Monthly Battery Test	0
EP-FC-12071-AD-F-	Alet Notification System Annual Inspection	0
EPIP-EOF-24	EOF Backup Alert Notification System Activation	6, 7
	Fort Calhoun Nuclear Power Plant Siren Alert Notification System Design Evaluation	May 2004
	Letter from Mr. Ron McCabe, Chief, Technological Hazards Branch, FEMA Region VII, to Mr. Joshua Bousum, Manager, Emergency Preparedness, Fort Calhoun Station	July 15, 2013
	Letter from Mr. Ron McCabe, Chief, Technological Hazards Branch, FEMA Region VII, to Mr. Al Bernt, Assistant Director, Nebraska Emergency Management Agency	December 17, 2012
	Letter from Mr. Ron McCabe, Chief, Technological Hazards Branch, FEMA Region VII, to Mr. Mark Schouten, Administrator, Iowa Homeland Security and Emergency Management	December 17, 2012

### Condition Reports (CRs)

2012-12571	2012-13559	2012-14591	2012-16727	2012-18493	2012-18853
2012-20731	2013-01335	2013-01554	2013-02457	2013-08001	2013-09471
2013-11525	2013-16955	2014-00173	2014-05680	2014-10864	2014-11645

### **Section 1EP3: Emergency Response Organization Staffing and Augmentation System**

#### Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision/ Date</u>
EP-FC-120-AD-F-02	Emergency Response Organization Duty Roster	0
EP-FC-120-AD-F-19	Verify Minimum Staffing Capability	0
EP-FC-121-1001	Automated Call-Out System Maintenance	0
EP-14-012	After Action Report for the Drive-In Drill Conducted September 10, 2014	September 11, 2014
EPIP-OSC-2	Command and Control Position Actions/Notification	57, 58
EPIP-OSC-15	Communicator Actions	30
2012-153	EPT-34, Notification and Augmentation Drills	September 28, 2012
2012-154	EPT-34, Notification and Augmentation Drills	December 18, 2012
2013-151	EPT-34, Notification and Augmentation Drills	March 25, 2013
2013-152	EPT-34, Notification and Augmentation Drills	June 26, 2013
2013-153	EPT-34, Notification and Augmentation Drills	September 26, 2013
2013-154	EPT-34, Notification and Augmentation Drills	December 16, 2013
2014-148	EPT-34, Notification and Augmentation Drills	February 28, 2014

### **Section 1EP5: Maintenance of Emergency Preparedness**

#### Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
EP-AA-125	Emergency Preparedness Self Evaluation Process	8
EP-FC-1	Nuclear Policy – Emergency Preparedness	May 21, 2014
EP-FC-10	Emergency Preparedness Program Description	0
EP-FC-1101	Emergency Preparedness Fundamentals	0

Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
EP-FC-1102	Emergency Response Organization Fundamentals	0
EP-FC-1104	Drill-Exercise Emergency Response Organization Team Participation and Preparation Expectations	0
EP-FC-120	Emergency Plan Administration	0
EP-FC-120-1001	10 CFR 50.54(q) Change Evaluation	0
EP-FC-120-1004	Emergency Preparedness Advisory Committee	0
EP-FC-120-F-04	Audit of Emergency Plan	0
EP-FC-120-AD-F-07	Verification of Siren Warning Signs	0
EP-FC-120-AD-F-16	EPZ Demography	0
EP-FC-121	Emergency Response Facilities and Equipment Readiness	0
EP-FC-122	Drills and Exercise Program	0
EP-FC-123	Computer Programs	0
EPT-56	Real Event Reports	2
EP-13-018	Summary Report: Notification of Unusual Event, August 6, 2013	August 6, 2013
PI-AA-120	Issue Identification and Screening Process	1
PI-AA-125	Corrective Action Program Procedure	1
EPT-14	Environmental Monitoring Drill Conducted November 13, 2012	November 13, 2012
EP-13-008	After-Action Report for the Exercise Conducted March 5, 2013	March 14, 2013
EP-13-011	After-Action Report for the Exercise Conducted May 7, 2013	June 4, 2013
EPT-49	After-Action Report for the On-site Medical Drill Conducted May 7, 2013	May 7, 2013
EPT-12	After-Action Report for the Radiation Protection Drill Conducted May 7, 2013	May 7, 2013
EP-13-013	After-Action Report for the ERO Accountability Drill Conducted June 9, 2013	June 9, 2013



Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
EP-13-015	After-Action Report for the Exercise Conducted June 18, 2013	July 8, 2013
EP-13-047	After-Action Report for the Exercise Conducted November 5, 2013	November 20, 2013
EPT-14	After-Action Report for the Environmental Monitoring Drill Conducted November 6, 2013	November 6, 2013
EP-13-49	After-Action Report for the Exercise Conducted December 3, 2013	December 13, 2013
EP-14-005	After-Action Report for the Exercise Conducted February 25, 2014	March 17, 2014
EP-14-014	After-Action Report for the Radiation Protection Drill Conducted February 25, 2014	February 25, 2014
EP-14-008	After-Action Report for the Exercise Conducted May 13, 2014	June 10, 2014
EP-14-009	After-Action Report for the Accountability Drill Conducted July 19, 2014	July 19, 2014
EP-14-010	After-Action Report for the Exercise Conducted July 22, 2014	August 14, 2014
EP-14-011	After-Action Report for the Environmental Drill Conducted August 19, 2014	August 22, 2014
EP-14-012	After Action Report for the Drive-In Drill Conducted September 10, 2014	September 11, 2014
RA-13-008	Methodology for Development of Radiological Effluent Emergency Action Levels	
	Apparent Cause Analysis Report: Three Areas Identified as Contributing to poor Emergency Response Organization Drill Performance	July 9, 2013
13-NOS-029	NOS Audit Report 4: Emergency Preparedness	March 13, 2013
NOSA-FCS-14-03	Emergency Preparedness Functional Area Audit Report	March 28, 2014
EPT-70	Verify Emergency Planning Zone Demography	December 17, 2013
EPT-67	Coordinating Drill Schedule and Participation with Offsite Agencies	0

Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision Date</u>
NOSCPA-FC-13-18	Station Emergency Preparedness Performance Report	November 11, 2013
	Fort Calhoun Tri-Annual Performance Report	January 20, 2014
NOSSCP-FC-14-08	Station Emergency Preparedness Performance Report	May 14, 2014
	Fort Calhoun Tri-Annual Performance Report	May 22, 2014
	Fort Calhoun Tri-Annual Performance Report	September 22, 2014
PI-AA-126-1005-F-01	Check-In Self Assessment, Siren Testing and Maintenance	July 29, 2014
PI-AA-126-1005-F-01	Check-In Self Assessment, Fort Calhoun Rulemaking	August 25, 2014

Condition Reports (CRs)

2012-10400	2012-11104	2012-12622	2012-13069	2012-18619	2013-00125
2013-04353	2013-04363	2013-10223	2013-10367	2013-12408	2013-20771
2013-22249	2013-22265	2014-09233	2014-00055	2014-03614	2014-03621
2014-07929	2014-10545	2014-11645	2014-12404	2014-12426	2014-12427
2014-12433	2014-12474	2014-12499	2014-12532	2014-12533	2014-12534

**Section 1EP6: Drill Evaluation**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Nuclear Energy Institute (EI) 99-02, Regulatory Assessment Performance Indicator Guideline	7
	Emergency Plan Implementing Procedures	
	Licensed Operator Requalification Simulator Scenario	
	Emergency Planning Performance Indicator Data Sheets	

**Section 40A1: Performance Indicator Verification**

Procedures and Documents

<u>Number</u>	<u>Title</u>	<u>Revision(s)</u>
EP-FC-121-AD-F-03	Alert Notification System Silent Test	0
EP-FC-121-AD-F-04	Alert Notification System Growl Test	1
EP-FC-121-AD-F-05	Alert Notification Complete Cycle Test	0
EPIP-OSC-1	Emergency Classification	48, 48A
EPIP-OSC-1	Emergency Classification Technical Basis Document	
EPIP-OSC-2	Command and Control Position Actions/Notification	57, 58
EPIP-OSC-15	Communicator Actions	30
EPIP-EOF-7	Protective Action Guides	25

**Section 40A2: Problem Identification and Resolution**

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
FC08261	Tornado Protection for Fuel Oil Storage Tanks FO-1 and FO-010	25
61753	Modify the FO-1 and FO-10 Vent Stacks, the FO-1 Fill Line and the FO-10 Sample Line to Provide Tornado Missile Protection	0
60137	Fuel Oil Storage Tank FO-1 and FO-10 Missile Protection	0
CC-AA-103	Configuration Change Control for Permanent Physical Plant Changes	25

Condition Reports (CRs)

2012-02063	2013-04266	2013-14117	2014-05384
2013-03839	2013-14246	2013-16494	2014-12169

### Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

#### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Control Room Logs		
TS 2.7	Electrical Systems	

#### Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
11405-E9,	Sheet 1 and 2, 120 Volt AC Instrument Buses	

#### Condition Reports (CRs)

2014-15363      2014-15316      2014-15325      2014-15313

#### Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Figure 8.1.1	Simplified Diagram Plant Electrical System P&ID	145
161F532	Main Breaker Control – 4.16 kV	25
138C5369	Elementary Diagram T1A-1, T1A-2, T1A3, and T1A-1	

### Section 4OA5: Other Activities

#### Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OCAG-2	Operational Contingency Action Guideline for Dam failure or Predicted Flood Greater than 1014 Feet MSL	4
PE-RR-AE-1004	Installation of Emergency Portable Equipment for Flooding	1
OCAG-2	Operational Contingency Action Guideline for Dam Failure or Predicted Flood Greater than 1014 feet MSL	
PE-AR-AE-1004	Installation of Emergency Portable Equipment for Flooding	1

#### Condition Reports (CRs)

2014-13651      2014-13731      2014-13653

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u> <u>Date</u>
TI 2515/190	Inspection of the Licensee's Proposed Interim Actions as a Result of the Near Term Task Force Recommendation 2.1, Flooding Re-evaluation  Reevaluated Flooding Hazard Interim Actions for Fort Calhoun  Fort Calhoun Flooding Actions Timeline Study  Fort Calhoun Beyond Design Basis Flooding Strategy Gap Analysis	July 24, 2014
NTTF 2.1	Flooding Interim Actions Review Category II Sites	
ILD-ISG-2012-05	Guidance for Performing the Integrated Assessment for Flooding	
SL-011805	Transmittal of Final Sargent and Lundy Report, Evaluation of Alternate Coolant Sources for Use in Beyond Design Basis External Events dated July 11, 2013	0
CN-TDA-13-4	Analysis of Extended Loss of AC Power Conditions Under Design Basis Flooding at Fort Calhoun Station Nuclear Power Plant	
EC60571-EA-13-017	Evaluation of Auxiliary Building Roof Framing for Temporary Fuel Oil Storage	
EA 13-015	Beyond Design Basis Flood Mitigation Strategies	
EC No. EC60571	Beyond Design Basis Flood Mitigation Strategies	

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
GHDR 11405-A-13	Primary Plant Section A-A	13