



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

October 28, 2014

Cheryl A. Gayheart
Vice President - Farley
Southern Nuclear Operating Company, Inc.
7388 North State Highway 95
Columbia, AL 36319

**SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION
REPORT 05000348/2014004; AND 05000364/2014004**

Dear Ms. Gayheart:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Joseph M. Farley Nuclear Plant, Units 1 and 2. On October 21, 2014, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

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

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

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC resident inspector at Joseph M. Farley Nuclear Plant.

C. Gayheart

2

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

Sincerely,

/RA/

Mark Franke, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos.: 50-348, 50-364
License No.: NPF-2, NPF-8

Enclosure: Inspection Report 05000348/2014004; and 05000364/2014004
w/Attachment: Supplemental Information

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C. Gayheart

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C. Gayheart

3

Letter to Cheryl A. Gayheart from Mark Franke dated October 28, 2014.

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION
REPORT 05000348/2014004; AND 05000364/2014004

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-348, 50-364

License Nos.: NPF-2, NPF-8

Report No.: 05000348/2014004; and 05000364/2014004

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Joseph M. Farley Nuclear Plant, Units 1 and 2

Location: Columbia, AL

Dates: July 1, 2014 through September 30, 2014

Inspectors: P. Niebaum, Senior Resident Inspector
K. Miller, Resident Inspector
J. Sowa, Resident Inspector

Approved by: Mark Franke, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000348/2014004; and 05000364/2014004, July 1, 2014, through September 30, 2014; Joseph M. Farley Nuclear Plant, Units 1 and 2, Operability Determinations and Functionality Assessments

The report covered a 3-month period of inspection by the resident inspectors. There was one NRC-identified violation documented in this report. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP), dated June 2, 2011. The cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas," dated January 1, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated January 28, 2013 and revised July 9, 2013. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Mitigating Systems

- Green. A NRC-identified non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was identified for the licensee's failure to include appropriate quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, licensee procedures FNP-1-STP-1.0 and FNP-2-STP-1.0, "Operations Daily and Shift Surveillance Requirements," did not contain adequate acceptance criteria for steam generator (SG) steam flow channel checks. As a corrective action the licensee removed the inadequate quantitative acceptance criteria from both procedures FNP-1-STP-1.0 and FNP-2-STP-1.0. The licensee entered this issue in their corrective action program as condition reports (CRs) 814962, 838289 and 840501.

The failure to provide adequate acceptance criteria for the steam flow instruments channel check surveillance was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the acceptance criteria allowed by Figure 1 of licensee procedure FNP-1-STP-1.0 and FNP-2-STP-1.0 for the SG steam flow channel check impacted the licensee's determination of operability of the Unit 2 "B" SG steam flow instrument channels during low power operations in Mode 1 between May 17 and 18. This finding was evaluated using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012. This finding screened to Green using Exhibit 2 – "Mitigating Systems Screening Questions," because it did not represent an actual loss of function of a single train for greater than its TS allowed outage time. Redundant instruments were available to actuate the main steam isolation function at the required setpoint. The inspectors determined the finding had a cross-cutting aspect of "conservative bias" in the human performance area, because the procedures that allowed the larger tolerance associated with the steam flow channel checks at low power levels were not questioned, but used by the operators to rationalize a satisfactory channel check. [H.14] (Section 1R15)

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Violations of very low safety significance that were identified by the licensee have been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 maintained approximately 100 percent rated thermal power (RTP) during the report period.

Unit 2 started the report period at approximately 100 percent RTP. On July 21, Unit 2 initiated a down power to 95 percent due to closure of the "5A" feedwater heater extraction steam isolation valve. Repairs were completed on July 23 and power was raised to 100 percent RTP on July 24. Unit 2 began coasting down on September 26 and reactor power was approximately 95 percent RTP at the end of the reporting period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial Walkdown

The inspectors verified that critical portions of the selected systems were correctly aligned by performing partial walkdowns. The inspectors selected systems for assessment because they were a redundant or backup system or train, were important for mitigating risk for the current plant conditions, had been recently realigned, or were a single-train system. The inspectors determined the correct system lineup by reviewing plant procedures and drawings. Documents reviewed are listed in the Attachment.

The inspectors selected the following two systems or trains to inspect:

- Unit 1 "A" train motor driven auxiliary feedwater (AFW) system
- Unit 2 "A" train charging pump "2A" while "2C" charging pump OOS

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05AQ)

a. Inspection Scope

Quarterly Inspection

The inspectors evaluated the adequacy of selected fire plans by comparing the fire plans to the defined hazards and defense-in-depth features specified in the fire protection program. In evaluating the fire plans, the inspectors assessed the following items:

Enclosure

- control of transient combustibles and ignition sources
- fire detection systems
- water-based fire suppression systems
- gaseous fire suppression systems
- manual firefighting equipment and capability
- passive fire protection features
- compensatory measures and fire watches
- issues related to fire protection contained in the licensee's corrective action program

The inspectors toured the following four fire areas to assess material condition and operational status of fire protection equipment. Documents reviewed are listed in the Attachment.

- Common, "1-2A" EDG Room, fire zone 61
- Unit 1, "1B" EDG Room, fire zone 58
- Unit 2, "2B" EDG Room, fire zone 59
- Common, "2C" EDG Room, fire zone 57

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

.1 Internal Flooding

The inspectors reviewed related flood analysis documents and walked down the areas listed below containing risk-significant structures, systems, and components susceptible to flooding. The inspectors verified that plant design features and plant procedures for flood mitigation were consistent with design requirements and internal flooding analysis assumptions. The inspectors also assessed the condition of flood protection barriers and drain systems. In addition, the inspectors verified the licensee was identifying and properly addressing issues using the corrective action program. Documents reviewed are listed in the Attachment.

- Unit 2 Auxiliary Building Lower Equipment Room and Auxiliary Feed Pump Rooms
100' elevation

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)a. Inspection Scope.1 Annual Review

The inspectors verified the readiness and availability of the “2A” component cooling water (CCW) heat exchanger to perform its design function by reviewing reports of those tests, verifying the licensee uses the periodic maintenance method outlined in the plant specific commitment and verifying critical operating parameters through direct observation or by reviewing operating data. Additionally, the inspectors verified that the licensee had entered any significant heat exchanger performance problems into the corrective action program and that the licensee’s corrective actions were appropriate. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)a. Inspection Scope.1 Resident Inspector Quarterly Review of Licensed Operator Requalification

The inspectors observed an evaluated simulator scenario administered to an operating crew conducted in accordance with the licensee’s accredited requalification training program.

The inspectors assessed the following:

- licensed operator performance
- the ability of the licensee to administer the scenario and evaluate the operators
- the quality of the post-scenario critique
- simulator performance

Documents reviewed are listed in the Attachment.

.2 Resident Inspector Quarterly Review of Licensed Operator Performance

The inspectors observed licensed operator performance in the main control room during “A” train reactor trip breaker testing on Unit 2.

The inspectors assessed the following:

- use of plant procedures
- control board manipulations
- communications between crew members
- use and interpretation of instruments, indications, and alarms
- use of human error prevention techniques
- documentation of activities
- management and supervision

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors assessed the licensee's treatment of the two issues listed below to verify the licensee appropriately addressed equipment problems within the scope of the maintenance rule (10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"). The inspectors reviewed procedures and records to evaluate the licensee's identification, assessment, and characterization of the problems as well as their corrective actions for returning the equipment to a satisfactory condition. The inspectors also interviewed system engineers and the maintenance rule coordinator to assess the accuracy of performance deficiencies and extent of condition. Documents reviewed are listed in the Attachment.

- Unit 2, 120 volt vital distribution system, plan to return to a(2) status from a(1)
- Unit 2, "5A" feedwater heater extraction steam isolation valve closure

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the three maintenance activities listed below to verify that the licensee assessed and managed plant risk as required by 10 CFR 50.65(a)(4) and licensee procedures. The inspectors assessed the adequacy of the licensee's risk assessments and implementation of risk management actions. The inspectors also verified that the licensee was identifying and resolving problems with assessing and managing maintenance-related risk using the corrective action program. Additionally, for

Enclosure

maintenance resulting from unforeseen situations, the inspectors assessed the effectiveness of the licensee's planning and control of emergent work activities. Documents reviewed are listed in the Attachment.

- Unit 2, July 21-23, 2014, "5A" feedwater heater extraction steam isolation valve troubleshooting and repair activities
- Unit 1, September 10, 2014, performance of FNP-1-FSP-307.0B, "Smoke Detector-Biennial Operability and Adjustment"
- Unit 2, September 17, 2014, elevated green risk condition associated with maintenance activity on EDG "2C" and on "2C" charging pump replacement

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors selected the five operability determinations or functionality evaluations listed below for review based on the risk-significance of the associated components and systems. The inspectors reviewed the technical adequacy of the determinations to ensure that technical specification operability was properly justified and the components or systems remained capable of performing their design functions. To verify whether components or systems were operable, the inspectors compared the operability and design criteria in the appropriate sections of the technical specification and updated final safety analysis report to the licensee's evaluations. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

- Unit 1, tendon oil/grease leak from containment in 139' electrical penetration room, CR 835703
- Unit 2, "2C" Main Steam Atmospheric Relief Valve Isolation Valve Q2N11V004F bonnet has a through-wall pinhole leak, CR 840984
- Unit 2, "2B" motor driven auxiliary feedwater pump surveillance test equipment, CR 844672
- Unit 1 "1B" RHR pump motor breaker has broken washer on main roller assembly, CR 854215
- Unit 2 "2B" erratic steam flow channel indications at low power, CR 814962

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to include appropriate quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, licensee procedures FNP-1-STP-1.0 and FNP-2-STP-1.0, "Operations Daily and Shift Surveillance Requirements," did not contain adequate acceptance criteria for steam generator (SG) steam flow channel checks.

Description: Technical Specification (TS) Limiting Condition of Operation (LCO) 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," requires two steam flow channels per steam line to be operable in Mode 1, and in Modes 2 and 3 except when one main steam isolation valve (MSIV) is closed in each steam line. The steam flow channel function is to isolate the main steam lines in the event of a steam line break. The TS required the trip setpoint of this function to be less than or equal to the differential pressure corresponding to 40 percent full steam flow below 20 percent load. Between May 17 and 18, Unit 2 was operating in Mode 1 between approximately 13 percent and 17 percent RTP (below 20 percent load), on-shift operations staff observed erratic indications on both "B" SG steam flow instrument channels, FT-484B and FT-485B. The licensee wrote CR 814962 to evaluate what was described as noisy and erratic steam flow indications. In the initial operability determination, the licensee concluded that the erratic indications were within the prescribed tolerance band of Figure 1 of FNP-2-STP-1.0, Version 98.0. Figure 1 is a curve that is used when power levels are less than 95 percent reactor power to determine the allowable error between the steam flow channels in each loop. The inspectors challenged this conclusion because, at the lower reactor power levels (between approximately 575,000 pounds-mass per hour (lbm/hr) and 625,000 lbm/hr steam flow), the allowable error according to Figure 1, was approximately 825,000 lbm/hr steam flow. This acceptance criteria is inadequate because a steam flow instrument channel could be failed and indicating low at the bottom of the indicating range and still be a satisfactory TS channel check. The licensee used licensee procedure FNP-2-STP-1.0 Version 98.0 to perform the required channel check as required by TS surveillance requirement (SR) 3.3.2.1.

Analysis: The failure to provide adequate acceptance criteria for the steam flow instruments channel check surveillance was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the acceptance criteria allowed by Figure 1 of licensee procedure FNP-1-STP-1.0 and FNP-2-STP-1.0 for the SG steam flow channel check impacted the licensee's determination of operability of the Unit 2 "B" SG steam flow instrument channels during low power operations in Mode 1 between May 17 and 18. This finding was evaluated using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012. This finding screened to Green using Exhibit 2 – "Mitigating Systems Screening Questions," because it did not represent an actual loss of function of a single train for greater than its TS allowed outage time. Redundant instruments were available to actuate the main steam isolation function at the required

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setpoint. The inspectors determined the finding had a cross-cutting aspect of “conservative bias” in the human performance area, because the procedures that allowed the larger tolerance associated with the steam flow channel checks at low power levels were not questioned, but used by the operators to rationalize a satisfactory channel check.

Enforcement: 10 CFR Part 50, Appendix B, Criterion V “Instructions, Procedures and Drawings,” required in part, that instructions, procedures or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. The licensee used procedures FNP-1-STP-1.0 and FNP-2-STP-1.0, “Operations Daily and Shift Surveillance Requirements,” to perform the TS required channel check surveillance. Contrary to the above, licensee procedures FNP-1-STP-1.0 and FNP-2-STP-1.0 did not include appropriate quantitative or qualitative acceptance criteria for the SG steam flow instruments channel checks for power levels less than 95 percent reactor power. This violation has existed since April 28, 2005 with Revision 81.0 of FNP-1-STP-1.0 and with Revision 69 of FNP-2-STP-1.0. As corrective action, the licensee removed Figure 1 from both procedures FNP-1-STP-1.0 and FNP-2-STP-1.0. The licensee entered this issue in their corrective action program as CRs 814962, 838289 and 840501. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. (NCV 05000348 and 364/2014004-01, “Inadequate Acceptance Criteria for Steam Generator Steam Flow Channel Checks”).

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors verified that the two plant modifications listed below did not affect the safety functions of important safety systems. The inspectors confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk significant structures, systems and components. The inspectors also verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition. Additionally, the inspectors evaluated whether system operability and availability, configuration control, post-installation test activities, and changes to documents, such as drawings, procedures, and operator training materials, complied with licensee standards and NRC requirements. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications. Documents reviewed are listed in the Attachment.

- Work Order SNC588167, Installation of backup sprinklers on the Unit 1 isophase bus ducts
- Work Order SNC511467, Defeat the duct detectors in the Unit 2 containment per minor design change (MDC)-SNC511270

b. Findings

No findings were identified.

Enclosure

1R19 Post-Maintenance Testing (71111.19)a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the five maintenance activities listed below to verify the work performed was completed correctly and the test activities were adequate to verify system operability and functional capability.

- WO SNC541402, Calibration of Unit 1 Refueling Water Storage Tank (RWST) level switches, LS0507 & LS0508 per FNP-1-IMP-221.1, "Refueling Water Storage Tank ECCS Valve Low Level Switches Loop Calibration and Operational Check", following level switch replacement
- WO SNC593723, Fast start of EDG 1C per FNP-0-SOP-38.0-1C, "1C Diesel Generator and Auxiliaries", following replacement of a K1 contactor relay mounting screw flat washer in a 1C EDG local control cabinet
- WO SNC591433, Replace 2D Service Water Pump Motor
- WO SNC595489, 1B residual heat removal (RHR) pump 4kV breaker swap and inspection
- WO SNC602422, 7300 NCT Card, N2C22FS0484, Resistor R564-1 Inspection

The inspectors evaluated these activities for the following:

- Acceptance criteria were clear and demonstrated operational readiness.
- Effects of testing on the plant were adequately addressed.
- Test instrumentation was appropriate.
- Tests were performed in accordance with approved procedures.
- Equipment was returned to its operational status following testing.
- Test documentation was properly evaluated.

Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with post-maintenance testing. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)a. Inspection Scope

The inspectors reviewed the four surveillance tests listed below and either observed the test or reviewed test results to verify testing adequately demonstrated equipment operability and met technical specification and licensee procedural requirements. The inspectors evaluated the test activities to assess for preconditioning of equipment,

Enclosure

procedure adherence, and equipment alignment following completion of the surveillance. Additionally, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with surveillance testing. Documents reviewed are listed in the Attachment.

Routine Surveillance Tests

- FNP-0-STP-24.17, "Diesel Generator Service Water Valves Remote Position Indications Inservice Test", Ver. 9.0
- FNP-2-STP-23.3, "2C Component Cooling Water Pump Quarterly Inservice Test", Ver 38.2
- FNP-2-STP-22.2, "2B Auxiliary Feedwater Pump Quarterly Inservice Test", Ver. 30.0

In-Service Tests (IST)

- FNP-1-STP-23.1, "1A Component Cooling Water Pump Quarterly Inservice Test", Ver. 38.3.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the emergency preparedness drill conducted on August 20, 2014. The inspectors observed licensee activities in the simulator and/or technical support center to evaluate implementation of the emergency plan, including event classification, notification, and protective action recommendations. The inspectors evaluated the licensee's performance against criteria established in the licensee's procedures. Additionally, the inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the corrective action program. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the Unit 1 and Unit 2 PIs listed below. The inspectors reviewed plant records compiled between September 2013 and September 2014 to verify the accuracy and completeness of the data reported for the station. The inspectors verified that the PI data complied with guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures. The inspectors verified the accuracy of reported data that were used to calculate the value of each PI. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with PI data. Documents reviewed are listed in the Attachment.

Cornerstone: Barrier Integrity

- reactor coolant system leak rate
- reactor coolant system specific activity

Cornerstone: Mitigating Systems

- safety system functional failures

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

The inspectors screened items entered into the licensee's corrective action program in order to identify repetitive equipment failures or specific human performance issues for follow-up. The inspectors reviewed condition reports, attended screening meetings, or accessed the licensee's computerized corrective action database.

.2 Annual Follow-up of Selected Issues

a. Inspection Scope

1. The inspectors conducted a detailed review of condition report CR 771533, 1-2A diesel generator start time failure.

The inspectors evaluated the following attributes of the licensee's actions:

- complete and accurate identification of the problem in a timely manner

Enclosure

- evaluation and disposition of operability and reportability issues
- consideration of extent of condition, generic implications, common cause, and previous occurrences
- classification and prioritization of the problem
- identification of root and contributing causes of the problem
- identification of any additional condition reports
- completion of corrective actions in a timely manner

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA3 Follow-up of Events (71153)

.1 (Closed) Licensee Event Report 05000348/2014-002-00, -01 and -02, B-Train RHR Inoperable for Longer Than Allowed by Technical Specifications due to Misadjusted Flow Control Valve Linkage

a. Inspection Scope

The inspectors reviewed this licensee event report (LER), the cause determination report (CAR 209437) and discussed the issue with licensee staff. On February 28, 2014, lower than expected flow rates were observed during performance of the “B” train residual heat removal (RHR) system surveillance test conducted in accordance with licensee procedure FNP-1-STP-11.2. Investigation of this condition determined that the reduced flow rates were the results of a previous maintenance activity performed on October 13, 2013. The maintenance activity replaced an actuator linkage on the “B” train RHR heat exchanger discharge valve, Q1E11HCV603B. Evaluation of the February 28, 2014 test results determined that the “B” train RHR system flow rate was less than the minimum allowed by TS, rendering the “B” train RHR system inoperable. On March 1, 2014, adjustments were made to the heat exchanger discharge valve linkage to return the “B” train RHR system flow rate to acceptable values. Following completion of the corrective maintenance, the “B” RHR train was returned to operable status on March 1, 2014. Licensee Event Reports 05000348/2014-002-00, -01 and -02 are closed.

b. Findings

The enforcement aspects of this finding are discussed in Section 4OA7.

40A5 Other Activities

.1 Operation of an Independent Spent Fuel Storage Installation (60855.1)

a. Inspection Scope

The inspectors performed a walkdown of the onsite independent spent fuel storage installation (ISFSI) and monitored the activities associated with normal operations, radiation protection and surveillances. The inspectors reviewed the licensee's most recent revision to licensee procedure FNP-0-STP-63.7, "Spent Fuel Storage Cask Heat Removal System Monitoring." The inspectors also reviewed surveillance records to verify that daily surveillance requirements were performed as required by technical specifications. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

On October 21, 2014, the resident inspectors presented the inspection results to Ms. Cheryl Gayheart and other members of the licensee's staff. The inspectors confirmed that proprietary information provided or examined during the inspection period was properly controlled.

40A7 Licensee-Identified Violations

The following violations of very low safety significance (Green) or Severity Level IV were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation.

- Technical Specification 3.5.2, "Emergency Core Cooling Systems (ECCS) – Operating" required that two ECCS trains shall be operable in Modes 1, 2 and 3. When one or more trains is inoperable and at least 100 percent ECCS flow equivalent to a single operable ECCS train available, Condition A is entered and the required Action A.1 is to restore the train(s) to operable status within 72 hours. Contrary to the above, between October 24, 2013 (when Unit 1 entered Mode 3) and March 1, 2014, the Unit 1 "B" train of the residual heat removal system was inoperable due to a valve actuator maintenance activity that resulted in less than adequate flow rate needed to support "B" train operability. The maintenance activity replaced an actuator linkage on the "B" train RHR heat exchanger discharge valve, Q1E11HCV603B. Following a RHR flow rate surveillance test conducted on Feb. 28, 2014, the reduced flow rate was identified. This issue was captured in the licensee's corrective action program as CR 741001. The low flow condition was corrected by adjusting the full-open position of the Q1E11HCV603B valve and the train was restored to an operable status on March 1, 2014. Using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power, the inspectors determined that the performance deficiency represented an actual loss of a single

Enclosure

train of RHR for greater than its TS allowed outage time. A detailed risk assessment was performed by a regional Senior Reactor Analyst in accordance with IMC 0609 Appendix A using the NRC Farley SPAR risk model. The performance deficiency resulted in reduced RHR train "B" flow however, the resultant flow met accident analysis requirements except for the large loss of coolant accident (LLOCA). The detailed risk assessment determined that the PD resulted in a core damage frequency increase of $<1 \text{ E-6/year}$, a GREEN finding of very low safety significance. This violation is associated with LERs 05000348/2014-002-00, -01 and -02.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee:

J. Andrews, Maintenance Director
E. Berry, Site Systems Manager
T. Burdeshaw, Engineering Supervisor
J. Carroll, Shift Operations Manager
J. Collier, Licensing Engineer
H. Cooper, Engineering Programs Supervisor
D. Drawbaugh, EP Supervisor
D. Enfinger, Corrective Action Program Supervisor
C. Gayheart, Site Vice President
S. Henry, Operations Director
R. Herrin, Operations Outage Manager
D. Hobson, Shift Operations Manager
J. Hutto, Plant Manager
V. Locke, Performance Improvement Supervisor
R. Martin, Regulatory Affairs Manager
J. McLean, Licensing Engineer
K. Miller, Performance Improvement
D. Reed, Operations Support Manager
L. Shaffield, Assistant Maintenance Director
B. Taylor, Nuclear Oversight Supervisor
C. Thornell, Site Projects Manager
C. Westberry, Engineering Project Manager
T. Youngblood, Engineering Director

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

05000348,364/2014004-01	NCV	Inadequate Acceptance Criteria for Steam Generator Steam Flow Channel Checks (Section 1R15)
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Opened

None

Closed

05000348/2014-002-00	LER	B-Train RHR Inoperable for Longer Than Allowed by Technical Specifications due to Misadjusted Flow Control Valve Linkage (Section 4OA3.1)
05000348/2014-002-01	LER	B-Train RHR Inoperable for Longer Than Allowed by Technical Specifications due to Misadjusted Flow Control Valve Linkage (Section 4OA3.1)

05000348/2014-002-02	LER	B-Train RHR Inoperable for Longer Than Allowed by Technical Specifications due to Misadjusted Flow Control Valve Linkage (Section 4OA3.1)
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Discussed
None

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Drawings:

D-175007, Sheet 1, P&ID, Aux. Feedwater System, Ver. 33.0
D-205039, Sheet 6, P&ID Chemical and Volume Control System, Ver. 9.0

Procedures:

FNP-1-STP-22.5, Auxiliary Feedwater System Flow Path Verification, Ver. 26.0
FNP-1-STP-64.0, Safeguards Systems Locked Valve Verification, Ver. 36
FNP-2-STP-10.0, ECCS Subsystem Flow Path Verification Test, Ver. 21.0

Documents:

WO SNC466954

Section 1R05: Fire Protection Annual/Quarterly

Drawings:

A-508651, Fire Zone Data Sheet: Diesel Generator Building (West), Sheet 5, Ver. 7.0
A-508651, Fire Zone Data Sheet: Diesel Generator Building (East), Sheet 6, Ver. 3.0

Section 1R06: Flood Protection Measures

Condition Reports:

832866, 835555, 835461, 835658, 835525

Documents:

Units 1 and 2, Internal Flooding Notebook, PRA Model Revision 9, March 2010
Maintenance Rule Scoping Criteria for V15-F03, auxiliary building watertight doors

Technical Evaluations:

835666

Work Order:

SNC345886

Section 1R07: Heat Sink Performance

Procedures:

NMP-ES-012, Heat Exchanger Program, Ver. 8.0
NMP-ES-012-GL01, Heat Exchanger Program Heat Exchanger Inspection, Testing and Condition Assessment, Ver. 3.0
NMP-ES-024-701, Eddy Current Testing of Heat Exchanger Tubing, Ver. 3.1

Condition Reports:
CR 705047, 870106

Technical Evaluations:
TE 643922

Documents:
NDE Technology Inspection Summary Report for Farley Unit 2, 2A Component Cooling Water Heat Exchanger, August 2014
Farley Unit 2 CCW System 1Q2014 System Health Report
SM-C081865601-001, Heat Exchanger Tube Plugging Criteria, Ver. 6.0

Drawing:
D-205002, P&ID Component Cooling Water System, Sheet 1, Ver. 31.0

Section 1R11: Licensed Operator Regualification Program

Documents:
Operations Training Simulator Exam Scenario As-Found #2 for crew 4, segment 2, dated August 25, 2014
As Found Evaluation Form for crew 4 segment 2, September 29, 2014

Procedures:
NMP-TR-416, Licensed Operator Continuing Training Program Administration, Ver. 5.6
NMP-OS-007, Conduct of Operations, Ver. 10.0
NMP-OS-007-001, Conduct of Operations Standards and Expectations, Ver. 14.3
FNP-0-SOP-0.0, General Instructions to Operations Personnel, Ver. 159.0
FNP-0-TCP-17.3 Licensed Operator Continuing Training Program Administration, Revision 36.0
FNP-0-TCP-17.6 Simulator Training Evaluation / Documentation, Revision 30.0
FNP-0-TCP-25.1 Simulator Fidelity, Revision 3.0
TR-423-F17 Plant Farley Simulator Security Checklist, Revision 4
NMP-TR-416, Licensed Operator Continuing Training Program Administration, Revision 1.1
NMP-TR-424, License Operator Continuing Training Exam Development, Revision 2.0
NMP-TR-424-001, Operator License Regulatory Exam Security Administration, Revision 1.0

Condition Reports:
873173

Section 1R12: Maintenance Effectiveness

Condition Reports:
PMCR 66135, 621617, 622259, 624135, 625747, 701930, 702680, 708884, 859405, 842721, 853880, 843069

Technical Evaluations:
641466, 642687, 707775, 844332

Documents:
Maintenance Rule Expert Panel (MREP) Meeting #14-12 Agenda, August 21, 2014
Maintenance Rule Manager Report (a)(1) status and goals, September 19, 2014

Procedures:

NMP-ES-027-001, Maintenance Rule Implementation, Ver. 4.0

Work Orders:

SNC427845

Section 1R13: Maintenance Risk Assessments and Emergent Work EvaluationProcedures:

NMP-GM-031, On-Line Configuration Risk Management Program, Ver. 2.0

NMP-GM-031-001, Online Maintenance Rule (a)(4) Risk Calculations, Ver. 2.0

FNP-1-FSP-307.0, Smoke Detector-Biennial Operability and Adjustment, Ver. 17.0

Condition Reports:

843082, 842721, 843006, 864313

Other:

Integrated plant computer printout, July 22, 2014

EOOS Operator's Risk Report for July 22, 2014

Engineering troubleshooting fault tree for 5A feedwater extraction steam valve, July 22, 2014

IRT Activation Checklist for CR 864313

Section 1R15: Operability Determinations and Functionality AssessmentsCondition Reports:

835703, 840984, 849124, 844672, 814962, 840501, 838289, 854215

Drawings:

U-280658, Velan 6" 600# Pressure-Seal Gate Valve, Ver. 8.0

Documents:

Letter from Precision Surveillance, Reference: Containment Tendons, dated October 5, 2011

MWR 219480, Tendon Grease Leak, July 31, 1991

NMP-GM-020-001-F01, IRT Activation Checklist for CR 835703, July 4, 2014

A-181007, Reactor Protection System Functional System Description, Ver. 18.0

Procedures:

NMP-AD-012, Operability Determination and Functionality Assessments, Ver. 12.3

FNP-1-STP-609.0, Containment Tendon Surveillance Test, Ver. 22.0

FNP-1-STP-167.0, Containment Integrity Examination, Ver. 3

FNP-2-STP-1.0, Operations Daily and Shift Surveillance Requirements, Ver. 98 and 104

FNP-2-STP-1.0, Operations Daily and Shift Surveillance Requirements, Ver. 98 dated
May 18, 2014

FNP-2-STP-1.0, Operations Daily and Shift Surveillance Requirements, Ver. 98 dated
May 17, 2014

FNP-1-IMP-213.16, Data Collection for Bistable Scaling of Steam Flow, Steam Pressure and
Impulse Pressure Instruments, Ver. 13.0

FNP-0-EMP-1313.19, Inspection and Adjustment of Cutler Hammer 4.16kV Circuit Breakers
Type MA-VR350, Ver. 14.1

Technical Evaluations:
849277, 840778, 854282

Other:
CAR 211067, Immediate Determination of Operability for CR 835703
TE841036 - Immediate Determination of Operability for CR 840984
CAR 210426, 2B SG steam flow indications while on steam dumps
CAR 210428, Equipment Reliability Checklist for 2E steam dump swinging in manual

Section 1R18: Plant Modifications

Procedures:
FNP-0-AP-13, Control of Temporary Alterations, Ver. 7.0
NMP-AD-008, Applicability Determinations, Ver. 17.1
NMP-AD-010, 10 CFR 50.59 Screenings and Evaluations, Ver. 13.0
FNP-0-AP-8.0, Design Modification Control, Ver. 49.0
NMP-ES-054, Temporary Modifications, Ver. 3.0

Condition Reports:
SNC511270

Documents:
Temporary Modification SNC511270, Temporary Modification Form, NMP-ES-054-F01, Ver. 3.0
As-Built Notice (ABN) ABN-F03268, Version 1.0, NMP-ES-026-F01, Ver. 3.0
Applicability Determination SNC511270, Version 1.0. NMP-AD-008-F01, Ver. 9.0
10 CFR 50.59 Screening/Evaluation SNC511270, Version 1.0, NMP-AD-010-F01, Ver. 9.0
Fire Protection Program and Safe Shutdown Analysis Checklist, TM-SNC511270, Version 1.0,
NMP-ES-035-006-F01, Ver. 4.1
Detailed Fire Protection Program Review, EM-SNC511270, Version 1.0, NMP-ES-035-006-F02,
Ver. 2.0
10 CFR 50.54(q) Screening/Evaluation, TM-SNC511270 and EM-SNC511270, 10 CFR 50.54(q)
Screening/Evaluation No. FNP-14-012-01, Version 1 and 1, NMP-AD-008-F04, Ver. 4.1

Drawings:
D-508991, Sheet 1, Wiring Diagram – Fire Protection System Smoke Det. Indicating Units and
Relay PNLs, Ver. 1.0
D-204673, Sheet 1, Primary Containment Bldg – Unit 2 Smoke Detect. Conduit Layout EI 155' &
222', Ver. 18.0

Procedures:
NMP-ES-054, Temporary Modifications, Ver. 3.0

Work Orders:
SNC511467

Section 1R19: Post Maintenance Testing

Condition Reports:
856239, 854215, 854184, 853891, 853767

Procedures:

FNP-1-IMP-221.1, Refueling Water Storage Tank ECCS Valve Low Level Switches Loop Calibration and Operational Check, Ver. 4.0
 FNP-0-SOP-38.0-1C, 1C Diesel Generator and Auxiliaries, Ver. 12.2
 FNP-2-STP-24.2, 2C, 2D and 2E Service Water Pump Quarterly Inservice Test, Ver. 70.3
 NMP-MA-014-001, Post Maintenance Testing Guidance, Ver. 3.0
 FNP-1-STP-11.2, 1B RHR Pump Comprehensive Inservice Test & Preservice Test Appendix, Ver. 59.0
 FNP-2-STP-213.21, Steam Generator 2B Q2C22FT0484 Loop Calibration and Operational Test, Ver. 47.0

Work Orders:

WO SNC541402, Replace RWST Level Switches Q1F16LS0507 and Q1F16LS 0508
 WO SNC592514, Perform Calibration of RWST Level Switches, LS0507 & 0508 Per FNP-1-IMP-221.1. "A" Train Only
 WO SNC593723, Replacement of a K1 contactor relay mounting screw flat washer in a 1C EDG local control cabinet
 WO SNC591433, Replace 2D Service Water Pump Motor
 WO SNC508646, FNP-2-STP-24.2, 2C, 2D and 2E Service Water Pump Quarterly Surveillance
 WO SNC52765, Perform FNP-0-EMP-1313.20 and MOC switch maintenance per FNP-0-EMP-1313.12
 WO SNC479241, Unit 1 B-Train RHR to RCS hot legs cross connection – magnesium rotor inspection
 WO SNC499480, Megger, inspect wiring and general motor inspection and cleaning
 WO SNC602422, 7300 NCT Card, N2C22FS0484, Resistor R564-1 Inspection

Section 1R22: Surveillance TestingCondition Reports:

844672, 844940

Procedures:

FNP-0-STP-24.17, Diesel Generator Service Water Valves Remote Position Indication Inservice Test, Ver. 8.0
 FNP-1-STP-23.1, 1A Component Cooling Water Pump Quarterly Inservice Test, Ver. 38.3
 FNP-2-STP-23.3, 2C Component Cooling Water Pump Quarterly Inservice Test, Ver 38.2
 FNP-2-STP-22.2, 2B Auxiliary Feedwater Ppump Quarterly Inservice Test, Ver. 30.0

Documents:

Farley IST Program Component Basis Information – Unit 1 for System P16

Drawings:

D-170119, PI&D – Service Water System Diesel Generator Building, Ver. 19.0
 D-200013, P&ID – River Water, Service Water and Circulating Water Systems, Ver. 18.0

Other:

SNC497946

Section 1EP6: Drill Evaluation**Condition Reports:**

864241, 835374, 877732, 877751, 584900, 877717, 863893, 863885

Procedures:

NMP-EP-110, Emergency Classification Determination and Initial Action, Ver. 7.1
 NMP-EP-111, Emergency Notifications, Ver. 9.0

Documents:

NMP-EP-111-F10, Nuclear Power Plant Emergency Notification Forms, Ver. 1.0, completed 8/20/14 during drill
 Emergency Preparedness Drill Report – 08/20/14 SNC Multi-Site Drill, dated 10/09/2014

Section 4OA1: Performance Indicator Verification**Procedures:**

FNP-0-AP-54, Preparation and Reporting of NRC Performance Indicator Data and NRC Operating Data, Ver. 15.0
 FNP-0-CCP-22.0, Gross Beta Gamma Analysis of Liquid Samples, Ver. 18.0
 FNP-0-CCP-25.0, DEI-131 Determination, Ver. 15.0
 FNP-0-SOP-0.11, Watch Station Tours and Operator Logs, Ver. 27.0
 FNP-1-STP-9.0, RCS Leakage Test, Ver. 51.1
 FNP-2-STP-9.0, RCS Leakage Test, Ver. 47.1
 FNP-1-CCP-651.0, Routine Sampling of the RCS, Ver. 33.0
 FNP-2-CCP-651.0, Routine Sampling of the RCS, Ver. 38.0
 FNP-1-CCP-42.0, Primary Coolant Liquid Gamma Spectroscopy Analysis, Ver. 25.0
 FNP-2-CCP-42.0, Primary Coolant Liquid Gamma Spectroscopy Analysis, Ver. 25.0
 FNP-0-CCP-31.0, Leak Rate Determination, Ver. 38.0

Documents:

Selected Unit 1 and Unit 2 Control Room Logs from September 2013 through September 2014
 NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7
 Farley Unit 1 LER 2013-002-00, 1B Emergency Diesel Generator in a condition prohibited by Technical Specifications due to an unreliable Mechanism Operated Cell (MOC) Switch
 Farley Unit 1 LER 2014-002-00, 1B RHR Inoperable longer than allowed by Technical Specifications due to a Misadjusted Flow Control Valve Linkage

Section 4OA2: Problem Identification and Resolution**Condition Reports:**

840199, 844917, 821089, 771533, 873847

Corrective Action Reports:

CAR 209269, Ver. 1.0 and 2.0

Technical Evaluations:

775444, 824989

Documents:

DRN 2380-0152-01, MPR Review of Field Flash Contactor Failure, Rev. 0

Procedures:

NMP-AD-028, 10 CFR 21 Evaluations and Reporting Requirements, Ver. 2.0
NMP-ES-027-001, Maintenance Rule Implementation, Ver. 4.0

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion

Condition Reports:

741001, 781354, 781114, 781106

Procedures:

NMP-MA-014-001, Post Maintenance Testing Guidance, Ver. 3.0
NMP-MA-014, Post Maintenance Testing, Ver. 1.1

Documents:

CAR 209437, Ver. 2.2
NMP-AD-002-F03, Troubleshooting Plan, March 1, 2014
WOs: SNC493948, SNC540080, SNC556568
Main Control Room Logs, March 1, 2014

Drawings:

D-175041, P&ID – Residual Heat Removal System, Ver. 18.0
D175038, P&ID – Safety Injection System, Ver. 23.0

Section 40A5: Other Activities

Procedures:

FNP-0-STP-63.7, Spent Fuel Storage Cask Heat Removal System Monitoring, Ver. 15.0

Condition Reports:

CR870671