



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

February 9, 2015

EA-15-010

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

**SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION
REPORT 05000348/2014005; AND 05000364/2014005 AND EXERCISE OF
ENFORCEMENT DISCRETION**

Dear Ms. Gayheart:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Joseph M. Farley Nuclear Plant, Units 1 and 2. On January 28, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff.

NRC inspectors documented two findings of very low safety significance (Green) in this report. These findings involved a violation of NRC requirements. Further, inspectors documented a licensee-identified violation, which was determined to be of very low safety significance, 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 these violations or significance of these NCVs, 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 Farley. 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 Farley.

The enclosed report also documents a violation for which the NRC is exercising enforcement discretion in accordance with Section 9.1 of the NRC Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." The inspectors have screened the violation and determined that it warrants enforcement discretion per the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues, and Inspection Manual Chapter 0305, Operating Reactor Assessment Program, Section 11.05.b.

C. Gayheart

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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/

Joel Munday, Director
Division of Reactor Projects

Docket Nos.: 50-348, 50-364
License Nos.: NPF-2, NPF-8

Enclosure: IR 05000348/2014005; 05000364/2014005
w/Attachment: Supplementary Information

cc Distribution via ListServ

C. Gayheart

2

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C. Gayheart

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Letter to Cheryl A. Gayheart from Mark Franke dated February 9, 2015.

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION
REPORT 05000348/2014005; AND 05000364/2014005 AND EXERCISE OF
ENFORCEMENT DISCRETION

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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.: 05000348/2014005; and 05000364/2014005

Licensee: Southern Nuclear Operating Company, Inc.

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

Location: Columbia, AL

Dates: October 1, 2014 through December 31, 2014

Inspectors: P. Niebaum, Senior Resident Inspector
K. Miller, Resident Inspector
D. Mas, Project Engineer
C. Dykes, Health Physicist (2RS3, 2RS4, 2RS6, 4OA1 4OA5))
R. Kellner, Health Physicist (2RS1, 2RS6, 4OA1)
W. Pursley, Health Physicist (2RS2)
W. Loo, Health Physicist (2RS5)
A. Vargas, Reactor Inspector (1R08)
M. Coursey, Reactor Inspector (1R08)
B. Caballero, Senior Operations Engineer (1R11)
J. Montgomery, Reactor Inspector (4OA3)

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

SUMMARY OF FINDINGS

IR 05000348/2014005; and 05000364/2014005, October 1, 2014 through December 31, 2014; Joseph M. Farley Nuclear Plant, Units 1 and 2, Problem Identification and Resolution; Event Follow-up

The report covered a 3-month period of inspection by the resident inspectors and eight regional inspectors. There are two findings documented in this report. The significance of these 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. An NRC-identified non-cited violation (NCV) of Farley Nuclear Plant, Unit 1, Operating License Condition 2.C.(4), and Unit 2, Operating License Condition 2.C.(6), "Fire Protection" was identified. The installed rolling steel fire doors design did not include fire detectors (fusible links or other type of labeled fire detection devices) to automatically close the doors in the event of a fire in Fire Area 71 (South Hallway). The licensee included this deficiency in their corrective action program (CAP) as CR867970 and implemented an hourly fire watch in the affected Fire Areas.

The licensee's failure to ensure that rolling steel fire doors included fire detectors to automatically close the doors under fire conditions, in the event of a fire in Fire Area 71 (South Hallway), was a performance deficiency (PD). The PD was more than minor because it was associated with the Protection Against External Events (Fire) attribute of the Mitigating Systems cornerstone and it adversely affected the cornerstone objective in that a fire in the common hallway could propagate into the individual EDG compartments. This finding is of very low safety significance. There is no cross-cutting aspect for this deficiency because the problem was not indicative of current licensee performance. (Section 40A2)

Cornerstone: Initiating Events

- Green. A self-revealing non-cited violation of 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, was identified for the licensee's failure to properly assess the increase in risk that resulted from a planned maintenance outage of the 2B emergency diesel generator (EDG). As a result, a Unit 2 manual reactor trip was required when the 2B startup auxiliary transformer (SAT) deenergized. This finding was entered into the licensee's CAP as CR 10019361.

The failure to properly assess and manage the increase in risk was a performance deficiency. The performance deficiency was more than minor because it adversely affected the Configuration Control attribute of the Initiating Events cornerstone and adversely

affected the cornerstone objective in that the risk associated with the component cooling water (CCW) system configuration in tandem with the 2B EDG maintenance outage was not considered which contributed to a manual reactor trip. A detailed risk assessment determined that the incremental core damage probability risk deficit was $< 1E-6/\text{year}$ and the incremental large early release probability risk deficit was $< 1E-7/\text{year}$. Therefore, the finding was determined to be of very low safety significance (Green). The inspectors determined the finding had a cross-cutting aspect of "work management" in the human performance area, because the risk associated with operating the B train of CCW as the "on service" train while the 2B DG was out of service for planned maintenance was not considered. [H.5] (Section 4OA3)

A violation of very low safety significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number is 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 94 percent RTP and coasting down into a planned refueling outage. On October 14, a manual reactor trip was initiated from approximately 83 percent RTP. The unit then entered a planned refueling outage. The unit was restarted on November 15 and achieved 100 percent RTP on Nov. 22. On December 13, the unit was shutdown to repair a broken steam flow transmitter sensing line associated with the "B" steam generator. Unit 2 returned to 100 percent RTP on December 17 and maintained approximately 100 percent RTP through the remainder of the report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

Impending Adverse Weather Conditions: The inspectors reviewed the licensee's preparations to protect risk-significant systems from ambient subfreezing temperatures during November 18 – 20, 2014. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures, including operator staffing, before the onset of the adverse weather conditions. The inspectors reviewed the licensee's plans to address the ramifications of potentially lasting effects that may result from sub-freezing temperatures. The inspectors verified that operator actions specified in the licensee's adverse weather procedure maintained readiness of essential systems. The inspectors also verified the licensee implemented periodic equipment walk-downs or other measures to ensure that the condition of plant equipment met operability requirements. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns: The inspectors verified that critical portions of the selected systems were correctly aligned by performing partial walkdowns of the following three systems or trains. 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.

- Unit 1 “B” train control room air conditioning system (CRACS) and control room emergency filtration/pressurization system (CREFS)
- “1-2A” emergency diesel generator (EDG) while “2B” EDG OOS for governor replacement
- “2B” EDG while “1-2A” EDG OOS for exhaust valve washer inspection

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities: The inspectors conducted an onsite review of the implementation of the licensee’s Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, emergency feedwater systems, risk-significant piping and components, and containment systems in Unit 2. The inspectors’ activities included a review of non-destructive examinations (NDE) to evaluate compliance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI (Code of record: 2001 Edition with Addenda 2003), and to verify that indications and defects (if present) were appropriately evaluated and dispositioned, in accordance with the requirements of the ASME Code, Section XI, acceptance standards. The inspectors directly observed and reviewed records of the following NDE mandated by the ASME Code to evaluate compliance with the ASME Code Section XI and Section V requirements, and if any indications and defects were detected, to evaluate if they were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement.

Visual Testing (VT):

- Component No. Q2F13D0001, CRDM Seismic Support Platform
- Component No. Q2F13D0002, Control Rod Drive Mechanism (CRDM) Seismic Support Tie Rod
- Component No. Q2F13D0003, CRDM Seismic Support Vertical Lift Legs
- Reactor Vessel Upper Head CRDM Penetrations

Ultrasonic Testing (UT):

- Containment Loop 3, 6” Safety Injection Valve to Pipe, Weld No. APR1-4304-19-RB
- Containment Loop 3, 6” Safety Injection, Pipe to Elbow Weld No. APR1-4304-20-RB
- Containment Loop 3, 6” Safety Injection, Elbow to Pipe Weld No. APR1-4304-21-RB

- 12" Residual Heat Removal B Train, Pipe to Elbow, Weld No. APR2-4506A-16- OE-UT
- 12" Residual Heat Removal B Train, 2D Inspection Band D/S of 3" Branch Connection, Weld No. APR2-4506A-16-OE-UT

Liquid Penetrant Test (PT):

- Containment Loop 3, 6" Safety Injection Valve to Pipe, Weld No. APR1-4304-19-RB
- Containment Loop 3, 6" Safety Injection, Pipe to Elbow Weld No. APR1-4304-20-RB
- Containment Loop 3, 6" Safety Injection, Elbow to Pipe Weld No. APR1-4304-21-RB
- 12" Residual Heat Removal B Train, Pipe to Elbow, Weld No. APR2-4506A-16-OE-UT
- 12" Residual Heat Removal B Train, 2D Inspection Band D/S of 3" Branch Connection, Weld No. APR2-4506A-16-OE-UT
- Containment Loop 3, Austenitic Base Material Under Clamp, Component No. ARP-Support Clamp

The inspectors reviewed documentation associated with the welding activity referenced below in order to evaluate compliance with procedures and the ASME Code. The inspectors reviewed the work order, repair and replacement plan, weld data sheets, welding procedures, procedure qualification records, welder performance qualification records, and NDE reports.

- Class 2, 2C Charging Pump No. Q2E21P002C, Outlet Pipe to Pipe, Weld No. 1F

During non-destructive surface and volumetric examinations performed since the previous refueling outage, the licensee did not identify any relevant indications that were analytically evaluated and accepted for continued service; therefore, no NRC review was completed for this inspection procedure attribute.

Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities: For the Unit 2 vessel head, a bare metal visual examination (BMV) was required this outage pursuant to 10 CFR 50.55a. The inspectors reviewed portions of the Unit 2 BMV examination and reviewed NDE reports for vessel upper head penetration (VUHP) Nos. 1, 10, 11, 12, 13, 14, and 15 for the BMV to determine if the activities, including the disposition of indications and defects, were conducted in accordance with the requirements of ASME Code Case N-729-1 and 10 CFR 50.55a(g)(6)(ii)(D). In particular, the inspectors evaluated if the required visual examination scope/coverage was achieved and limitations (if applicable) were recorded in accordance with the licensee procedures. Additionally, the inspectors evaluated if the licensee's criteria for visual examination quality and instructions for resolving interference and masking issues were consistent with 10 CFR 50.55a.

The licensee did not identify any relevant indications that were accepted for continued service during the BMV exam. Additionally, the licensee did not perform any welding repairs to the vessel head penetrations since the beginning of the last Unit 2 refueling outage; therefore, no NRC review was completed for these inspection procedure attributes.

Boric Acid Corrosion Control Program Inspection Activities: The inspectors reviewed the licensee's Boric Acid Corrosion Control Program (BACCP) activities to ensure implementation with commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," and applicable industry guidance documents. Specifically, the inspectors performed an onsite record review of procedures and the results of the licensee's containment walkdown inspections performed during the current fall refueling outage. The inspectors also interviewed the BACCP owner, conducted an independent walkdown of containment to evaluate compliance with licensee's BACCP requirements, and verified that degraded or non-conforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACCP and CAP.

The inspectors reviewed the CRs listed in the Attachment and associated corrective actions related to evidence of boric acid leakage to evaluate if the corrective actions completed were consistent with the requirements of the ASME Code Section XI, and 10 CFR Part 50, Appendix B, Criterion XVI.

The inspectors reviewed the engineering evaluations listed in the Attachment to determine if degraded components were documented in the CAP. The inspectors also evaluated corrective actions for any degraded components to determine if they met the ASME Section XI Code.

Steam Generator Tube Inspection Activities: The inspectors observed the following activities and/or reviewed the following documentation, and evaluated them against the licensee's technical specifications, commitments made to the NRC, ASME Section XI, and Nuclear Energy Institute 97-06 (Steam Generator Program Guidelines):

- Reviewed the licensee's in-situ steam generator (SG) tube pressure testing screening criteria. In particular, the inspectors assessed whether assumed NDE flaw sizing accuracy was consistent with data from the Electric Power Research Institute (EPRI) examination technique specification sheets (ETSS), or other applicable performance demonstrations.
- Compared the numbers and sizes of SG tube flaws/degradation identified against the licensee's previous outage Operational Assessment.
- Reviewed the SG tube eddy current testing (ET) examination scope and expansion criteria.
- Evaluated if the licensee's SG tube ET examination scope included potential areas of tube degradation identified in prior outage SG tube inspections, and/or as identified in NRC generic industry operating experience applicable to the licensee's SG tubes.

- Reviewed the licensee's implementation of their extent-of-condition inspection scope and repairs for new SG tube degradation mechanism(s). The licensee identified Tube Support Plate (TSP) wear and Anti-Vibration Bar (AVB) wear as new degradation mechanisms. The licensee has incorporated these new degradation mechanisms in their Condition Monitoring and Operational Assessment.
- Reviewed the licensee's repair criteria and processes.
- Verified that primary-to-secondary leakage (e.g., SG tube leakage) was below 3 gallons per day, or the detection threshold, during the previous operating cycle according to licensee procedures.
- Evaluated if the ET equipment and techniques used by the licensee to acquire data from the SG tubes were qualified or validated to detect the known/expected types of SG tube degradation in accordance with Appendix H, Performance Demonstration for Eddy Current Examination, of EPRI Pressurized Water Reactor Steam Generator Examination Guidelines, Revision 7.
- Reviewed the licensee's secondary side SG Foreign Object Search and Retrieval activities.
- Reviewed ET personnel qualifications.

Identification and Resolution of Problems: The inspectors reviewed a sample of ISI-related problems which were identified by the licensee and entered into the CAP as CRs. The inspectors reviewed the CRs to confirm the licensee had appropriately described the scope of the problem and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant. The inspectors performed this review to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

a. Inspection Scope

Resident Inspector Quarterly Review of Licensed Operator Requalification: The inspectors observed a simulator scenario conducted for training of an operating crew for requalification 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
- simulator performance

Resident Inspector Quarterly Review of Licensed Operator Performance: The inspectors observed licensed operator performance in the main control room during Unit 2 low power physics testing conducted on Nov. 16, 2014. 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

Annual Review of Licensee Requalification Examination Results: On April 4, 2014, the licensee completed the annual requalification operating examinations and on June 26, 2014, the licensee completed the comprehensive biennial requalification written examinations, which are required to be administered to all licensed operators in accordance with Title 10 of the Code of Federal Regulations 55.59(a)(2), "Requalification Requirements," of the NRC's "Operator's Licenses." The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Requalification Program and Licensed Operator Performance", dated October 1, 2012. These results were compared to the thresholds established in Section 3.02, "Requalification Examination Results," of IP 71111.11.

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors assessed the licensee's treatment of the issue 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.

- Units 1 & 2, Degraded shaft on "A" Train Control Room Air Conditioning System (CRACS) Air Handling Unit

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

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 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, October 1, 2014, maintenance on 2A-110 smoke detector in Unit 2 Auxiliary Building
- Unit 2, October 15, 2014, 2B EDG out of service for governor modification
- Unit 1, November 3, 2014, 1B EDG out of service for corrective maintenance and high voltage switchyard work

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors selected the three 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.

- Units 1 and 2, Request for engineering evaluation: ITT Engineered Valves diaphragms potential Part 21, CR 873485
- Units 1 and 2, cylinder exhaust valve washers for 1-2A and 2B EDGs, CR 889756
- Unit 2, Loss of load pin from snubber SS-12496 on line N2G21HCD-39, CR 886556

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors verified that the plant modification 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 SNC512261, Fabricate and install piping on Charging Pump discharge header per DCP SNC467137, Farley SAM-U2 FLEX modification for RCS makeup/boron injection

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing

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 SNC560113, Replace fan shaft and shaft bearings on A train control room air conditioning unit, QSV49K001A-A
- WO SNC543733, Install updated governor controls for the 2B EDG

- WOs SNC613939, SNC 614038, Replace Belleville washers on all cylinder exhaust valves for the 1B EDG
- WO SNC609522, Disassemble and inspect the “2A” motor driven auxiliary feed pump per FNP-0-MP-7.1
- WO SNC570821, Replace “2B” Main Steam Pressure Transmitter Q2N11PT0485, calibrate per FNP-2-STP-213.11, and response time test per FNP-2-STP-256.7E

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.

1R20 Refueling and Other Outage Activities

.1 Unit 2 Refueling Outage

a. Inspection Scope

For the Unit 2 refueling outage from October 14, 2014 to November 19, 2014, the inspectors evaluated the following outage activities:

- outage planning
- shutdown, cooldown, refueling, heatup, and startup
- reactor coolant system instrumentation and electrical power configuration
- reactivity and inventory control
- decay heat removal and spent fuel pool cooling system operation
- containment closure

The inspectors verified that the licensee:

- considered risk in developing the outage schedule
- controlled plant configuration in accordance with administrative risk reduction methodologies
- developed work schedules to manage fatigue
- developed mitigation strategies for loss of key safety functions

- adhered to operating license and technical specification requirements

Inspectors verified that safety-related and risk-significant structures, systems, and components not accessible during power operations were maintained in an operable condition. The inspectors also reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with outage activities. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Unit 2 Forced Outage

a. Inspection Scope

For the Unit 2 forced outage from December 13, 2014 to December 16, 2014, the inspectors evaluated the following outage activities:

- shutdown, cooldown, refueling, heatup, and startup
- reactivity and inventory control
- decay heat removal system operation
- containment closure

The inspectors verified that the licensee:

- controlled plant configuration in accordance with administrative risk reduction methodologies
- developed mitigation strategies for loss of key safety functions
- adhered to operating license and technical specification requirements

Inspectors verified that safety-related and risk-significant structures, systems, and components not accessible during power operations were maintained in an operable condition. The inspectors also reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with outage activities. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the five 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, 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-2-STP-40.0B, "Safety Injection With Loss of Off-Site Power Test – B Train", Ver. 3.0
- FNP-2-STP-16.10, "2A Containment Spray Pump Comprehensive & Check Valves Flow Test – A Train", Ver. 18.1
- FNP-2-STP-22.16, "Turbine Driven Auxiliary Feedwater Pump Quarterly Inservice Test", Ver. 66.2

Containment Isolation Valve

- FNP-2-STP-627.0, "Local Leak Rate Testing of Containment Penetrations", Ver. 56.0 for containment penetration 60
- FNP-2-STP-627.0, "Local Leak Rate Testing of Containment Penetrations", Ver. 56.0 for containment penetration 62

b. Findings

No findings were identified.

2 Cornerstone: Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls

a. Inspection Scope

Hazard Assessment and Instructions to Workers: During facility tours, the inspectors directly observed labeling of radioactive material and postings for radiation areas, high radiation areas (HRA)s, and very high radiation areas (VHRA)s established within the radiologically controlled area (RCA) of the auxiliary building, Unit 2 (U2) reactor containment building, ISFSI and radioactive waste (radwaste) processing and storage locations. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected RCA areas. The inspectors reviewed survey records for several plant areas including surveys for alpha emitters, discrete radioactive particles, airborne radioactivity, gamma surveys with a range of dose rate gradients, and pre-job surveys for upcoming tasks. The inspectors also

discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection. For selected outage jobs, the inspectors attended pre-job briefings and reviewed radiation work permit (RWP) details to assess communication of radiological control requirements and current radiological conditions to workers.

Hazard Control and Work Practices: The inspectors evaluated access barrier effectiveness for selected locked high radiation area (LHRA) locations and discussed changes to procedural guidance for LHRA and VHRA controls with health physics (HP) supervisors. The inspectors reviewed implementation of controls for the storage of irradiated material within the spent fuel pool (SFP). Established radiological controls (including airborne controls) were evaluated for selected Unit 2 Refueling Outage 23 (2R23) tasks including lift and set of the reactor head, reactor cavity decontamination, and manual changeout of the U2 RCS filter. In addition, the inspectors reviewed licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations.

Through direct observations and interviews with licensee staff, inspectors evaluated occupational workers' adherence to selected RWPs and HP technician (HPT) proficiency in providing job coverage. Electronic dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results for selected 2R23 job tasks. The inspectors also reviewed the use of personnel dosimetry (ED alarm response, extremity dosimetry, multi-badging in high dose rate gradients, etc.).

Control of Radioactive Material: The inspectors observed surveys of material and personnel being released from the RCA using small article monitor (SAM), personnel contamination monitor (PCM), and portal monitor (PM) instruments. The inspectors discussed equipment sensitivity, alarm setpoints and release program guidance with licensee staff. The inspectors compared recent 10 Code of Federal Regulations (CFR) Part 61 results for the Dry Active Waste (DAW) radioactive waste stream with radionuclides used in calibration sources to evaluate the appropriateness and accuracy of release survey instrumentation. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Problem Identification and Resolution: The inspectors reviewed and assessed Condition Reports (CR)s associated with radiological hazard assessment and control. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results.

Radiation Protection (RP) activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Section 12; Technical Specifications (TS) Sections 5.4 (Procedures) and 5.7 HRA; 10 CFR Parts 19 and 20; and approved licensee procedures. Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, "Control of Radioactively Contaminated Material". Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS2 Occupational ALARA Planning and Controls

a. Inspection Scope

Radiological Work Planning: Inspectors evaluated As Low As Reasonably Achievable (ALARA) program guidance and implementation for ongoing tasks associated with 2R23. Crud burst activities and cleanup results for current 2R23 activities were reviewed and discussed. Licensee program guidance processes, and the resultant data bases used to estimate and track exposure for selected 2R23 outage activities and for individual workers were reviewed in detail. Inspectors also evaluated tasks and reviewed post-outage ALARA activities associated with previous, Unit 1 Refueling Outage 25 (1R25), outage.

A list was obtained from the licensee of work activities for their current outage. Inspectors selected work activities to evaluate the ALARA Plan and associated documentation for jobs, including Pressurizer work, reactor head disassembly and reassembly, insulation removal and installation and Steam Generator work. Inspectors evaluated dose mitigation considerations, dose goals and other factors that went into planning the dose goal for each task, including the review of total effective dose equivalent (TEDE) ALARA evaluations for the decrease of worker efficiency from the use of respiratory protective devices. Selected RWPs were reviewed by inspectors to verify the integration of ALARA requirements into the documents for worker instruction. Inspectors followed the progression of available work activities to compare dose rates accrued and work evolution to the ALARA planning. The inspectors reviewed temporary shielding documentation and observed the as installed configuration.

Verification of Dose Estimates and Exposure Tracking Systems: ALARA work packages, including in-progress and closed packages, and the assumptions and basis for the collective exposure estimates were reviewed by inspectors. The inspectors reviewed ALARA procedures, had discussions with ALARA personnel, reviewed daily exposure graphs and outage reports that tracked and trended the dose of ongoing work, and reviewed monthly Station ALARA Committee Meeting Minutes. The use of Work-In-Progress reviews for ALARA trigger points was also evaluated by the inspectors.

Source Term Reduction and Radiation Worker Performance: The inspectors evaluated source term reduction methods through the review of licensee documents and records, and discussions with ALARA personnel. Impact of the on-line chemistry, fuel integrity, and shut down chemistry and clean-up activities for the current outage were reviewed and discussed in detail. The inspectors also reviewed future plans for source reduction. The inspectors observed radiation worker performance through remote monitoring and direct observations. This included the reactor head lift, pressurizer work, and attending ALARA and HRA pre-job briefs.

Problem Identification and Resolution: The inspectors reviewed licensee corrective action documents associated with ALARA planning and controls. This included review of selected CRs and self-assessments. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. Documents reviewed are listed in the report Attachment.

Radiation protection activities were evaluated against the requirements of UFSAR Section 12; TS Section 5.4, Procedures, and TS Section 5.7, High Radiation Area; 10 CFR Parts 19 and 20; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation

a. Inspection Scope

Engineering Controls: The inspectors reviewed the use of temporary and permanent engineering controls to mitigate airborne radioactivity during the Unit 2 refueling outage. In addition, during observations of jobs in-progress and containment walk-downs, inspectors observed the placement and use of high efficiency particulate air (HEPA) negative pressure units, and air sampling equipment. Inspectors questioned the use of containment purge during the Unit 2 reactor head lift. The inspectors evaluated the effectiveness of continuous air monitors and air samplers placed in work area "breathing zones" to provide indication of increasing airborne levels.

Respiratory Protection Devices and SCBA for Emergency Use: Inspectors reviewed the use of respiratory protection devices to limit the intake of radioactive material. This included review of program guidance for issuance and use of respiratory protection devices used for routine tasks and devices stored for use in emergency situations, and discussions with responsible licensee representatives. Inspectors observed the physical condition of Self-Contained Breathing Apparatus (SCBA) units, negative pressure respirators (NPR)s, powered air purifying respirators/hoods (PAPRs/PAPHs) and device components staged for routine and emergency use throughout the plant. SCBA bottle air pressure, the number of units, and the number of spare masks and air bottles available was also evaluated by inspectors. The inspectors reviewed maintenance records for selected SCBA units for the past two years and evaluated SCBA and NPR compliance with National Institute for Occupational Safety and Health (NIOSH) certification requirements. The inspectors also reviewed records of Grade D (or better) air quality testing for supplied-air devices and SCBA bottles. The inspectors reviewed the status and surveillance records of SCBAs staged for in-plant use during emergencies through review of records and walk-down of SCBA staged in the control room and selected locations.

The inspectors reviewed procedures to ensure that the use of respiratory protection devices was ALARA when engineering controls were not practicable. Control room operators were interviewed on the use of the devices including SCBA bottle change-out and use of corrective lens inserts. In addition, qualifications for individuals responsible for testing and repairing SCBA vital components were evaluated through review of training records. The inspectors reviewed the current status, operability and availability of selected SCBA units staged for routine and emergency use maintained within the control room, respirator room and outage support center. Selected maintenance records for SCBA units and air cylinder hydrostatic testing documentation were reviewed.

The inspectors evaluated the licensee's procedural requirements for evaluating air samples for the presence of alpha emitters and reviewed airborne radioactivity and contamination survey records for selected plant areas to ensure air samples are screened and evaluated per the procedure requirements.

Problem Identification and Resolution: CRs associated with airborne radioactivity mitigation and respiratory protection were reviewed and assessed. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. Documents reviewed are listed in the Attachment.

Licensee activities associated with the use of engineering controls and respiratory protection equipment and airborne radioactivity monitoring and controls were evaluated against details and requirements documented in FSAR Sections 11 and 12; TS Section 5.4, Procedures; 10 CFR Part 20; RG 8.15, Acceptable Programs for Respiratory Protection; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment

a. Inspection Scope

External Dosimetry: The inspectors reviewed and discussed RP program guidance for monitoring external radiation exposures of occupational workers. The inspectors reviewed National Voluntary Laboratory Accreditation Program (NVLAP) certification data for years 2013-2014 & 2014-2015 and discussed program guidance for storage, processing and the results for personnel dosimeters currently in use. The licensee's program to evaluate comparisons between ED and personnel dosimeter results were discussed. Licensee evaluations for shallow and deep dose assessments for workers associated with identified dispersed skin contamination and discrete radioactive particle (DRP) contamination events since January 1, 2013, were reviewed and discussed in detail. Finally, the inspectors conducted a detailed review of licensee evaluation of dosimetry placement issues associated with current maintenance activities.

Internal Dosimetry: Program guidance, instrument detection capabilities, and select results for internally deposited radionuclides were reviewed in detail. The inspectors reviewed routine termination and follow-up *in vivo* (Whole Body Count) analyses, since April 1, 2012. Inspectors reviewed procedures that addressed methods for determining internal or external contamination, releasing contaminated individuals, the assignment of dose, and the frequency of measurements depending on the nuclides. In addition, capabilities for the collection and conduct of special bioassay sampling were discussed with responsible licensee representatives.

Special Dosimetric Situations: The inspectors reviewed monitoring conducted and results for special dosimetric situations. The methodology and results of monitoring occupational workers within non-uniform external dose fields were discussed. The inspectors reviewed monitoring and results for declared pregnant workers documented in licensee records since April 1, 2012. The inspectors evaluated the licensee's neutron dosimetry program including instrumentation which was evaluated under Inspection Procedure 71124.05 and 71124.01 for ISFSI.

Problem Identification and Resolution: The inspectors reviewed and discussed selected Corrective Action Program (CAP) documents associated with occupational dose assessment. The reviewed items included self-assessments and quality assurance audit documents. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. Documents reviewed are listed in the report Attachment.

HP program occupational dose assessment activities were evaluated against the requirements of UFSAR Section 12.3; 10 CFR Parts 19 and 20; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation

a. Inspection Scope

Radiation Monitoring Instrumentation: During plant tours of the various areas located in the Auxiliary Building (AB), SFP, U2 Equipment and Personnel Hatch exit points, and RCA exit point the inspectors observed installed radiation detection equipment. These included area radiation monitors (ARMs), continuous air monitors (CAMs), liquid and gaseous effluent monitors, PCMs, SAMs and PMs. The inspectors observed the physical location of the components, noted material condition, and compared sensitivity ranges with UFSAR requirements.

In addition to equipment walk-downs, the inspectors observed source checks and alarm setpoint testing of various portable and fixed detection instruments, including an ion chamber, a teletector, PCMs, SAMs, and a whole body counter (WBC). The inspectors observed the use of the high-range calibrator for portable instruments and discussed

periodic output value testing with cognizant licensee staff. Calibration records and alarm setpoint values for selected instruments (ARM, PCM, SAM, effluent monitors, WBC and laboratory counting instruments) were reviewed by the inspectors. A sampling of instruments used for post-accident monitoring such as containment high-range ARMs and effluent monitor high-range noble gas and iodine channels were reviewed by inspectors. Radioactive sources used to calibrate selected ARMs and effluent monitors were evaluated for traceability to national standards. Calibration stickers on portable survey instruments and air samplers were noted during walk downs and inspections of areas where such equipment was being utilized. The most recent 10 CFR Part 61 analysis for DAW was reviewed to determine if calibration and check sources are representative of plant source term. The inspectors also reviewed countroom calibration and quality assurance records for alpha-beta scaler counting equipment, gamma ray spectroscopy equipment and liquid scintillation counters located in the HP and Chemistry counting rooms.

Problem Identification and Resolution: The inspectors reviewed selected CRs associated with radiological instrumentation. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; UFSAR Chapters 11 & 12; and applicable licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

- a. Inspection Scope: The inspectors followed up on radioactive releases associated with Unit 2 Plant Vent Stack radiation monitor (R-14) alarms that occurred in 2013 and 2014 during Chemical and Volume Control System (CVCS) demineralizer venting procedures. Inspectors reviewed the calculation of noble gas air dose at or near the site boundary for two of the releases, evaluated the licensee's guidance for determining whether notification of the NRC was required by Technical Specifications, Emergency Plan procedures, or the Offsite Dose Calculation Manual, and evaluated how the licensee included the dose in the cumulative and projected dose contributions for the calendar quarter and current calendar year, at least every 31 calendar days, as required. Documents reviewed are listed in the Attachment. This activity was insufficient to complete the baseline requirements of IP 71124.06. The remainder of this IP is scheduled for completion in 2015.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, listed below. 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: Mitigating Systems

- High Pressure Injection System
- Cooling Water System

The inspectors reviewed plant records compiled between December 2013 and December 2014 to verify the accuracy and completeness of the data reported for the Unit 1 and Unit 2 PIs.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

The inspectors reviewed PI data collected from January 1, 2013, through September 30, 2014. The inspectors assessed CAP records to determine whether HRA, VHRA or unplanned exposures, resulting in TS or 10 CFR 20 non-conformances, had occurred during the review period. In addition, the inspectors reviewed selected personnel contamination event data, internal dose assessment results, and ED data for cumulative doses and/or dose rates exceeding established alarm set-points.

Public Radiation Safety Cornerstone

- Radiological Control Effluent Release Occurrences

The inspectors reviewed the PI results for the Public Radiation Safety Cornerstone from January 2013, through September 2014. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and CRs related to Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.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 followup. The inspectors reviewed condition reports, attended screening meetings, or accessed the licensee's computerized corrective action database.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed issues entered in the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on a potential trend associated with missed technical specification surveillances, but also considered the results of inspector daily condition report screenings, licensee trending efforts, and licensee human performance results. The review nominally considered the 6-month period of July 2014 thru December 2014 although some examples extended beyond those dates when the scope of the trend warranted. Additionally, the inspectors reviewed the adequacy of corrective actions associated with a sample of the issues identified in the licensee's trend reports. The inspectors also reviewed corrective action documents that were processed by the licensee to identify potential adverse trends in the condition of structures, systems, and/or components as evidenced by acceptance of long-standing non-conforming or degraded conditions. Documents reviewed are listed in the attachment.

b. Findings and Observations

No findings were identified.

.3 Annual Followup of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of condition report CR867970, Adequacy of Diesel Generator Building Appendix R roll-up fire doors in the event of a fire in the common south hallway. The inspectors evaluated the following attributes of the licensee's actions. Documents reviewed are listed in the Attachment.

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

b. Findings

Introduction: The inspectors identified a Green NCV of Farley Nuclear Plant, Unit 1, Operating License Condition 2.C.(4), and Unit 2, Operating License Condition 2.C.(6), “Fire Protection” for the licensee’s failure to install rolling steel fire doors in the Appendix R 3-hour common fire barrier for all five diesel generators in accordance with the Updated Final Safety Analysis Report (UFSAR). The installed rolling steel fire doors design did not include fire detectors (fusible links or other type of labeled fire detection devices) to automatically close the doors under fire conditions, in the event of a fire in Fire Area 71 (South Hallway), as stated in the Farley Nuclear Plant UFSAR.

Description: There were five emergency diesel generator compartments arranged side by side (east to west) with the generators at the north end and the diesel engines and auxiliaries at the south end of the compartments. A common Appendix R 3-hour rated fire barrier at the south end of all five compartments separated them from a common hallway (South Hallway, Fire Area 71). Each of the five compartments was provided with a rolling steel fire door at the south end (in the Appendix R fire Barrier) which were to close automatically in conjunction with actuation of an automatic total flooding carbon dioxide fire extinguishing system contained in each of the five compartments.

According to the Fire Hazards Analysis, Fire Area 71 has low combustible loading. Although there was smoke detection in the area, there was no fire suppression system to extinguish a potential fire that could expose all five diesel generator compartments if the rolling fire doors were not closed. A transient fire in the south hallway (Fire Area 71) would not cause any of the five fire doors to close automatically since there were no fire detectors (fusible links or other type of labeled fire detection devices) associated with the doors in the hallway. Although the five doors were originally designed and provided with an automatic closing device (fusible links rated at 160 degrees F), the licensee changed the design in 1976 to replace one of the fusible links with an Electro Thermal Link (ETL). The ETL was actuated electrically upon actuation of the associated carbon dioxide fire extinguishing system. The ETL has the ability to actuate thermally in the event of a power loss. All of the fusible links and the ETL for each door were installed only on the diesel generator compartment side of the Appendix R fire barrier. These fire detectors are located above the diesel generator side of the openings, approximately 11 to 14 feet below the 20 foot high ceiling. Heat and products of combustion from a transient fire in the south hallway would likely be exhausted from the open ends of the common hallway and not develop into a hot gas layer. Based on the hallway configuration, it is highly unlikely that a transient fire would actuate the fusible links or the ETLs. With diesel generator compartment ventilation in service, any hot gas entering the diesel generator compartments would be exhausted through the ceiling fans and not form a layer at the ceiling. If power is available to the diesel generator compartment detection system, it is possible to manually close the respective door to the EDG compartment electrically

using a push-button station outside the south access door in Fire Area 71. If no power is available, the only means left to manually close the fire doors is the manual chain operator on the door. With a fire in Fire Area 71, either means of manual door closure would need to be accomplished by an individual wearing fire protection gear.

UFSAR Appendix 9B, Fire Protection Program, Section 9B.4.1.5, Doors, specifies that fire doors have been designed in accordance with the guidelines of Appendix A to Branch Technical Position (BTP) Auxiliary Power Conversion Systems Branch (APCSB) 9.5.1 and it is the intent of the regulations to ensure openings in fire barriers are protected by doors which are either closed or will be closed under fire conditions. The rolling steel fire doors were purchased in accordance with NFPA-80, Fire Doors & Windows – 1973 Edition. NFPA-80, Section 2-5.5, Closing Devices, Paragraph 2-5.5.1, specifies that an automatic-closing device shall be installed on every rolling steel door. The FNP rolling steel fire doors (D-702, D-705, D708, D-711, and D-714) design did not include fire detectors (fusible links or other type of labeled fire detection devices) to automatically close the doors under fire conditions, in the event of a fire in Fire Area 71 (South Hallway). The licensee established compensatory measures including an hourly fire watch.

Analysis: The licensee's failure to install a rolling steel fire door in accordance with the approved UFSAR is a performance deficiency. This finding is more than minor because the installed fire doors degraded one of the fire protection defense in depth elements and it affected the Mitigating Systems cornerstone objective in that a fire in the common hallway could propagate into the individual EDG compartments. The inspectors evaluated this finding using the NRC's significance determination process (SDP) and inspection manual chapter (IMC) 0609, Appendix F, Attachment 1, Part 1, "Fire Protection SDP Phase 1 Worksheet" issued September 20, 2013. Based on the potential for the fire to affect safe shutdown for multiple compartments, a detailed risk evaluation was required. A bounding risk evaluation for this performance deficiency was performed by a regional SRA. The major analysis assumptions included: a one year exposure period; transient fire initiators considered; fire severity factor of 0.1, only large fires capable of generating smoke to enter the emergency diesel generator (EDG) compartments; probability of non-suppression of 0.1 for manual suppression in Fire area 71; and fires in fire area 71 assumed to yield a loss of offsite power and fail all the EDGs. The fire scenario was a transient combustible fire in the EDG building south hallway, Fire Area 71, which is assumed to remain unsuppressed long enough for hot gas to enter the EDG rooms and cause a loss of offsite power (LOOP) and failure of all the EDGs. The dominant sequence was a plant centered station blackout with failure to recover EDGs or offsite power and failure to manually control auxiliary feedwater leading to core damage due to failure of core heat removal. The lack of significant ignition sources and the open vents at the ends of the EDG building south hallway limit the impact of the fires on the EDG compartments. The SDP risk analysis determined the increase in core damage frequency due to the performance deficiency was <1 E-6/year, a GREEN finding of very low safety significance. The cause of this finding was not associated with a cross-cutting area because it is not reflective of current licensee performance. The problem has existed since original plant construction and the pre-licensing phase of the two nuclear units. The licensee included this deficiency in their

corrective action program as CR867970 and implemented an hourly fire watch in the affected Fire Areas as a compensatory measure, LCO No. 1-2014-0321.

Enforcement: Farley Nuclear Plant, Unit 1, Operating License Condition 2.C.(4), and Unit 2, Operating License Condition 2.C.(6), states, in part, that the licensee shall implement and maintain in effect all provisions of the approved fire protection program (FPP) as described in the Final Safety Analysis Report for the facility, which implements the fire protection requirements of 10 CFR 50.48 and 10 CFR 50 Appendix R. UFSAR Appendix 9B, Fire Protection Program, Section 9B.4.1.5, Doors, specifies that fire doors have been designed in accordance with the guidelines of Appendix A to BTP APCSB 9.5.1 and it is the intent of the regulations to ensure openings in fire barriers are protected by doors which are either closed or will be closed under fire conditions. Contrary to the above, the licensee failed to implement and maintain in effect all provisions of the approved FPP. Specifically, since original plant construction, the inspectors determined that the licensee had failed to install rolling steel fire doors (D-702, D-705, D708, D-711, and D-714) in accordance with the requirements of NFPA-80, Fire Doors & Windows – 1973 Edition, Section 2-5.5, Closing Devices, Paragraph 2-5.5.1. The licensee had installed fire doors that did not include fire detectors (fusible links or other type of labeled fire detection devices) to automatically close the doors under fire conditions, in the event of a fire in Fire Area 71 (South Hallway), as stated in the Farley Nuclear Plant UFSAR. Because the licensee included this deficiency in their corrective action program as CR867970 and because the deficiency had low safety significance, this finding will be treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy and is identified as NCV 05000348/05000364/2014005-01, Failure to Ensure Rolling Fire Doors on Units 1 and 2 Complied with Fire Code.

4OA3 Follow-up of Events

.1 Unit 2 Reactor Trip

a. Inspection Scope

The inspectors responded to the site after notification of a Unit 2 reactor trip on October 14, 2014. The direct cause of the trip was a manual trip initiated by the operators in accordance with site procedures due to loss of a startup transformer (SUT) and subsequent loss of the “on service” CCW pumps. The inspectors verified that plant equipment responded as expected following the trip. The inspectors interviewed the operators and discussed adequacy of operator actions. The inspectors verified that condition reports were written as required to document equipment or performance deficiencies and lessons learned. The inspectors reviewed Event Notification Report 50533, the licensee’s reactor trip analysis report, and discussed the cause of the trip and associated corrective actions with licensee staff. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report 05000364/2014-002-00 and 01, Manual Reactor Trip due to Loss of 2B Startup Auxiliary Transformer and Loss of Offsite Power

a. Inspection Scope

The inspectors reviewed this licensee event report (LER) associated with the Unit 2 reactor trip discussed in section 4OA3.1. The inspectors reviewed the root cause report (CAR 213097), evaluated corrective actions and discussed the issue with licensee staff.

b. Findings

Introduction: A Green self-revealing NCV of 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, was identified for the licensee's failure to properly assess the increase in risk that resulted from a planned maintenance outage of the "2B" diesel generator (DG). As a result, a Unit 2 manual reactor trip was required when the 2B startup auxiliary transformer (SAT) deenergized.

Description: On October 14, 2014, a lighting strike in the Unit 2 switchyard caused the 2B SAT to deenergize. The 2B SAT was the normal power supply to the 2G 4kV bus which supplied power to the B train CCW pumps. When the 2B SAT deenergized, power was lost the B train CCW pumps which were aligned as the "on service" train supplying cooling water to the reactor coolant pump (RCP) oil coolers and thermal barrier heat exchangers. Normally, the 2B DG would automatically start and provide power to the "B" train CCW pumps. However, with the 2B EDG unavailable due to planned maintenance, there was no automatic power supply to the B train CCW pumps. Procedure FNP-2-AOP-9.0, "Loss of Component Cooling Water" directed the operators to manually trip the reactor and stop all RCPs if the "on service" train of CCW was affected. Accordingly, the licensee manually tripped the reactor and stopped all RCPs.

The licensee used both a specific configuration risk monitor software and qualitative risk assessment to determine the overall risk increase for maintenance activities. The configuration risk monitor software was used to assess the aggregate risk impacts on core damage frequency and large early release frequency during 2B EDG maintenance. The licensee also performed a qualitative just-in-time risk assessment prior to taking the 2B DG out of service on October 13, 2014. However, these risk assessment processes did not consider plant equipment configurations combined with equipment outages to determine the increased risk of a reactor trip. Consequently, the licensee did not take actions to mitigate the increased risk of a reactor trip with the "B" train of CCW as the "on-service" train while the 2B EDG was unavailable.

Analysis: The failure to properly assess and manage the increase in risk was a PD. The PD was more than minor because it was associated with the Configuration Control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective in that the risk associated with the CCW system configuration in tandem with the 2B DG maintenance outage was not considered which contributed to a manual reactor trip. The inspectors evaluated the finding using IMC 0609 Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process". A detailed risk assessment was performed using data from the licensee's full

scope probabilistic risk assessment model. The inspectors determined that the incremental core damage probability risk deficit was $< 1E-6$ /year and the incremental large early release probability risk deficit was $< 1E-7$ /year. Therefore, the finding was determined to be of very low safety significance (Green). The inspectors determined the finding had a cross-cutting aspect of “work management” in the human performance area, because the risk associated with operating the B train of CCW as the “on service” train while the 2B DG was out of service for planned maintenance was not considered. [H.5]

Enforcement: 10 CFR 50.65 (a)(4) required in part that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to this requirement, since October 13, 2014, when the 2B diesel generator was taken out of service for maintenance, the licensee failed to adequately assess and manage the increase in risk while the “B” train of component cooling water was on service and supplying the miscellaneous header and cooling to the reactor coolant pumps. This resulted in a manual reactor trip of Unit 2 when the 2G 4kV bus deenergized following the loss of the “2B” startup auxiliary transformer. Corrective actions are planned that will prevent a planned diesel generator outage in the same train as the component cooling water “on-service” train. Condition reports CR 880201 and 880329 were entered into the licensee’s corrective action program. Because this violation was of very low safety significance and it was entered into the licensee’s CAP as CR 10019361, this violation is being treated as an NCV, consistent with the Enforcement Policy. NCV 05000364/2014005-02, “Failure to assess and manage the increase in risk led to a manual reactor trip of Unit 2.”

.3 (Closed) Licensee Event Report (LER) 05000348, 364/2013-004-00: Unfused DC Ammeter Circuits Result in an Unanalyzed Condition

a. Inspection Scope

On February 14, 2014, the licensee submitted an LER documenting the discovery of a condition of non-compliance with the site’s fire protection program (FPP). This condition could prevent operators from achieving and maintaining safe shutdown (SSD) of the plant, in the case of a postulated fire.

The inspectors performed a detailed review of the information related to the LER. Inspectors reviewed documents, and discussed the event with plant personnel to gain an understanding of the event. The inspectors assessed the licensee’s compensatory measures and corrective actions to determine if they were adequate.

b. Findings

Introduction: The licensee identified a non-compliance with Farley Operating License Condition 2.C(4) for Unit 1, and 2.C(6) for Unit 2, for the failure to meet requirements for protection of associated circuits. Specifically, the licensee failed to provide short circuit protection for safety-related and nonsafety-related associated circuits. As a result, a postulated fire could result in a secondary fire in another fire area. The secondary fire could adversely affect SSD capability.

Description. On December 13, 2013, the licensee conducted a review of industry operating experience (OE) related to unfused DC ammeter circuits. The review determined that certain DC ammeter circuits at Farley lacked short circuit protection. Because these circuits lack short circuit protection, a postulated fire in a fire area containing DC ammeter circuit cabling could result in concurrent shorts in the circuit. Due to the lack of short circuit protection, the resultant excessive current flow in the DC ammeter cable could result in a secondary fire in another fire area. The secondary fire could adversely affect SSD equipment or cables for SSD equipment, and thus, adversely affect SSD capability. Multiple fire areas in the Turbine Building, Service Water Structure, and Auxiliary Building are potentially affected.

Section 9B.1.2 of Appendix 9B of the licensee's FSAR defines associated circuits of concern as those cables that have a physical separation less than that required by 10 CFR 50 Appendix R, Section III.G.2, and have a common enclosure (e.g., raceway, panel, junction) with the shutdown cables (redundant and alternative) and are not electrically protected by circuit breakers, fuses or similar devices. Section 9B.3 provides the basis for the review that a fire would not negate the safe shutdown of the plant. For associated circuits that share common enclosures with safe shutdown circuits, Section 9B.3.J.4.b(2) states, in part, "Nonsafe shutdown circuits as well as safe shutdown circuits are provided with short circuit protection. Nonsafe shutdown circuits which share raceway or other enclosures with safe shutdown circuits are not considered as a potential fire source because short circuit protection is provided." The licensee's OE review determined that certain DC ammeter circuits were not provided with short circuit protection, and thus, invalidates the SSD evaluation bases stated in Section 9B.3 of the FSAR.

Upon discovery, the licensee entered the condition into the corrective action program (CRs 723304 and 746046), and implemented appropriate compensatory measures in the form of roving fire watches for the affected areas. Plant modifications are currently being developed to provide short circuit protection for the affected DC ammeter circuitry.

Analysis. The licensee's failure to provide short circuit protection for DC ammeter circuits is a PD. This PD is more than minor because it is associated with reactor safety Mitigating System cornerstone attribute of Protection Against External Events (i.e., fire). Specifically, not providing circuit protection for associated circuits affects the reactor safety mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Because this issue relates to fire protection, and this noncompliance was identified as a part of the site's transition to NFPA 805, this issue is being dispositioned in accordance with Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" of the NRC Enforcement Policy.

In order to verify that this non-compliance was not associated with a finding of high safety significance (Red), a bounding phase 3 SDP risk analysis was performed by a regional SRA using the guidance from NRC Inspection Manual Chapter 0609 Appendix F and NUREG/CR 6850 revision 0 and Supplement 1. The analysis used inputs from the licensee's NFPA 805 project for ignition frequency and cable routing data. The

major analysis assumptions were: a one year exposure period, two proper DC polarity hot shorts required to achieve the high current conditions for secondary fires, and all ignition sources for each affected fire zone assumed to damage the ammeter cables. Based on this bounding risk analysis, the regional SRA determined that this performance deficiency resulted in a CDF increase for each Farley Unit 1 and 2 of less than $1E-4$ /year (i.e., less than Red). The licensee also performed a risk assessment using their Farley fire probabilistic risk assessment model which also produced a result $<1E-4$ for each Farley unit.

No cross-cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Enforcement. Farley Operating License Condition 2.C(4) for Unit 1, and 2.C(6) for Unit 2 states, in part, Southern Nuclear shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, which implements the fire protection requirements of 10 CFR 50.48 and 10 CFR 50 Appendix R. Farley's Fire Protection Program is detailed in Appendix 9B of the FSAR. For associated circuits that share common enclosures with safe shutdown circuits Section 9B.3.J.4.b(2) of Appendix 9B of the FSAR states, in part, "Nonsafe shutdown circuits as well as safe shutdown circuits are provided with short circuit protection. Non-safety shutdown circuits, which share raceway or other enclosures with safe shutdown circuits, were not considered as a potential fire source because short circuit protection was provided." Contrary to the above, for associated circuits that share common enclosures with safe shutdown circuits, the licensee failed to provide short circuit protection for associated circuits, in accordance with the FSAR. Specifically, on December 16, 2013, the licensee discovered that circuits for certain DC ammeters did not contain any form of short circuit protection. This condition has existed since original plant design and construction. Upon discovery, the licensee entered the condition into the corrective action program (CRs 723304 and 746046), and implemented appropriate compensatory measures in the form of roving fire watches for the affected areas.

This finding affected 10 CFR 50.48, was identified by the licensee, and is a violation of NRC requirements. The licensee has committed to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the licensee's license amendment request to transition to NFPA 805 is still under NRC review, and the noncompliance is not associated with a finding of high safety significance. Therefore, the NRC is exercising enforcement discretion in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and Inspection Manual Chapter 0305. This condition was entered into the licensee's corrective action program and immediate corrective actions and compensatory measures were taken.

4OA5 Other.1 Closure of Follow-up Inspection for Confirmatory Order, EA-12-145, May 6, 2013, Failure to Ensure that Radiation Worker Training (RWT) Exams for Security Officers Were Not Compromised.a. Inspection Scope

The inspectors performed a follow-up inspection using Inspection Procedure (IP) 92702, Followup on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders and Alternate Dispute Resolution Confirmatory Orders, to assess the licensee's implementation of the commitments for Confirmatory Order EA-12-245. The objective of the inspection was to review the adequacy of the implementation of commitments that were part of the Confirmatory Order. The results of that inspection are documented in report number 05000348/2013005, 05000364/2013005, 05000348/2013502, and 05000364/2013502. Two commitments from Paragraph V. left unsatisfied after the first 92702 Inspection: 1) An effectiveness review of all corrective actions taken; and 2) a letter provided to the NRC discussing the basis for concluding that the order has been satisfied. The inspectors performed an in-office evaluation of the licensee's actions for these two commitments.

b. Findings/Observations

No findings were identified. The inspectors evaluated the completion and adequacy of the licensee's response to the remaining two commitments of Confirmatory Order EA-12-145. The inspectors reviewed the current status of the remaining commitments of Paragraph V. A summary of the licensee's response to each of the remaining commitments is included below:

- An effectiveness review of all corrective actions taken under the Confirmatory Order is due by August 31, 2014. Southern Company completed an effectiveness review under its corrective action program documented in CR 635617 and TE 637083. The licensee had a team evaluate the corrective actions and lasting effects and there were no additional actions recommended. This commitment is considered closed. (Paragraph V.h)
- Upon completion of the terms of paragraph V.a through V.h as directed by the Confirmatory Order, SNC will provide the NRC with a letter discussing the basis for concluding that the order has been satisfied. SNC provided that letter to the NRC on September 8, 2014, identified as NL-14-1357 (ML14251A530). This commitment is considered closed. (Paragraph V.j)

4OA6 Meetings, Including Exit

On January 28, 2015, 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.

4OA7 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.

- 10 CFR 50.55a(g)(4), In-service Inspection Standards Requirements for Operating Plants, requires, in part, that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) that are classified as Class MC or Class CC pressure retaining components and their integral attachments must meet the requirements, except design and access provisions and pre-service examination requirements, set forth in Section XI of the ASME BPV Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section. Section XI of the ASME BPVC, 2001 Edition with 2003 Addenda, Table IWE-2500-1, Examination Category E-A Containment Surfaces, required a general visual examination of 100 percent of the containment moisture barriers during each inspection period. Contrary to the above, the licensee failed to perform 100 percent inspection of the moisture barrier during each inspection period as stated in Section XI of the ASME BPVC, 2001 Edition with 2003 Addenda, Table IWE-2500-1. During the most recent Unit 2 refueling outage, the licensee examined the segments of moisture barrier inside containment that were not previously inspected and identified portions to be deteriorated. This violation was determined to be not greater than very low safety significance (Green) because it could not result in a breach of containment and could not have likely introduced radioactive materials to the ground and atmosphere. This violation was documented in the licensee's CAP as CR 886644.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:

J. Andrews , Maintenance Director
G. Bell, Licensing Supervisor
E. Berry, Site Systems Manager
K. Brown, Chemistry Supervisor
T. Burdeshaw, Engineering Supervisor
J. Carroll, Shift Operations Manager
H. Cooper, Engineering Programs Supervisor
D. Drawbaugh, EP Supervisor
D. Enfinger, Corrective Action Program Supervisor
C. Gayheart, Site Vice President
P. Griffin- Welding Program Owner
S. Henry, Operations Director
R. Herrin, Operations Outage Manager
D. Hobson, Shift Operations Manager
J. Howard- BACC Program Owner
J. Hutto, Plant Manager
V. Locke, Performance Improvement Supervisor
A. Martin – Corporate Steam Generator Program
R. Martin, Regulatory Affairs Manager
D. McKinney, Licensing Manager
K. Miller, Performance Improvement
C. Pierce, Regulatory Affairs Director
D. Reed, Operations Support Manager
B. Sampson- ISI Program Owner
L. Shaffield, Assistant Maintenance Director
T. Smith – Corporate SG Level III
R. Smith, Site Design Manager
B. Taylor, Nuclear Oversight Supervisor
C. Thornell, Site Projects Manager
S. Varnum, Chemistry Manager
R. Vierkandt, Health Physics Manager
C. Westberry, Engineering Project Manager
L. Williford, Licensing Engineer
T. Youngblood, Engineering Director

LIST OF REPORT ITEMS

Opened and Closed

NCV 5000348, 364/2014005-01 Failure to Ensure Rolling Fire Doors on Units 1 and 2 Complied with Fire Code (4OA2)
NCV 0500 0364/2014005-02 Failure to perform an adequate risk assessment led to a manual reactor trip of Unit 2 (4OA3)

Closed

LER 05000364/2014-002-00, 01 Manual Reactor Trip due to Loss of 2B Startup Auxiliary Transformer and Loss of Offsite Power (4OA3)
LER 05000348, 364/2013-004-00 Unfused DC Ammeter Circuits Result in an Unanalyzed Condition (4OA3)
CO CA-12-145 Closure of Follow-up Inspection for Confirmatory Order, EA-12-145, May 6, 2013, Failure to Ensure that Radiation Worker Training (RWT) Exams for Security Officers Were Not Compromised. (4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

FNP-0-AOP-21, Severe Weather, Ver. 40.0
NMP-OS-017, Severe Weather, Ver. 1.1
FNP-0-SOP-0.12, Cold Weather Contingencies, Ver. 22.0
FNP-1-EMP-1383.01, Freeze Protection Inspections, Ver. 21.0
FNP-2-EMP-1383.01, Freeze Protection Inspections, Ver. 16.0

Documents

SNC534892, Winter Readiness Freeze Protection Installation
CR 893982

Section 1R04: Equipment Alignment

Drawings

D-175012, HVAC & Filtration, Control Room and Computer Room P&ID, Ver. 40
D-205012, HVAC & Filtration, Control Room and Computer Room P&ID, Ver. 41
D-170800, P&ID – Lube Oil System for Diesel Generator 1-2A, Ver. 14.0
D-170802, P&ID – Intercooler Water System for Diesel Generator 1-2A, Ver. 12.0
D-170804, P&ID – Jacket Coolant System for Diesel Generator 1-2A, Ver. 20.0
D-170806, P&ID – Air Start System for Diesel Generator 1-2A, Ver. 22.0
D-170808, P&ID – Fuel Oil System for Diesel Generator 1-2A, Ver. 12.0
D-172774, Elem. Diagram Diesel Gen. No. 1-2A, Start, Stop & Shutdown, Ver. 23.0
D-172775, Elem. Diag. Diesel Gen. No. 1-2A, Exiter & Miscellaneous Controls, Ver. 18.0
D-200209, P&ID – Lube Oil System for Diesel Generator 2B, Ver. 12.0
D-200210, P&ID – Intercooler Water System for Diesel Generator 2B, Ver. 8.0
D-200211, P&ID – Jacket Coolant System for Diesel Generator 2B, Ver. 18.0
D-200212, P&ID – Air Start System for Diesel Generator 2B, Ver. 23.0
D-200213, P&ID – Fuel Oil System for Diesel Generator 2B, Rev. 12
D-202778, Elem. Diagram Diesel Gen. No. 2B, Start, Stop & Shutdown, Ver. 24.0

Procedures

FNP-0-SOP-38.0A, 1-2A Diesel Generator, Ver. 18.0

FNP-0-SOP-38.0E, 2B Diesel Generator, Ver. 15.0

Documents:
 NL-14-1578, Emergency Technical Specification Revision Request for TS 3.7.10 Control Room
 Emergency Filtration/Pressurization System, October 6, 2014

CRs 875810, 875495, 872754

Section 1R08: Inservice Inspection ActivitiesProcedures

NMP-ES-024-301, Liquid Penetrant Examination Color Contrast and Fluorescent, Rev. 11

NMP-ES-024-203, Visual Examination (VT-3), Rev. 5

NMP-ES-024-501, PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe
 Welds (Appendix VIII), Rev. 6

PDI-UT-2, PDI Generic Procedure for the Ultrasonic, Examination of Austenitic Pipe Welds
 (Appendix VIII), Rev. F

APR+PT3C, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 3-Coil +PT ANTS, Rev. 0

APR+PTUB, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters U-Bend MR +PT ANTS, Rev. 0

APR-01-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 720 Bobbin 40 IPS, Rev. 0

APR-02-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 720 Bobbin 24 IPS, Rev. 0

APR-03-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 700 Bobbin 24 IPS, Rev. 0

APR-04-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 720 3-Coil +PT, Rev. 0

APR-05-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 720 MB 3-Coil +PT, Rev. 0

APR-06-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 680 U-Bend MR +PT, Rev. 0

APR-07-14, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency
 Inspection Parameters 680 MB U-Bend MR +PT, Rev. 0

APR-BOB, Westinghouse Heat Exchanger Eddy Current Inspection Multi-Frequency Inspection
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MRS-GEN-1127, Guidelines for Steam Generator Eddy Current Data Quality Requirements,
 Rev. 10

MRS-SSP-1052-ALA/APR, Secondary Side Tubesheet Inspection- Westinghouse Model 54F
 S/Gs, Rev. 12

MRS-SSP-1169-ALALPR, Farley Unit 1 and 2 In-Service Steam Generator Eddy Current
 Analysis Guidelines

MRS-TRC-2246, Use of Appendix H and Appendix I Qualified Techniques at Farley Unit 2 23rd
 Refueling, dated 10/27/2014

CR 850624

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Engineering Evaluations: CRs 816103, 821596, 827461, 833542, 834616, 835295, 836818,
 839714, 839767, 856996

Other Documents

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 CoreStar Certificate of Conformance for CoreStar Work Order (WO) 8374
 CoreStar Certificate of Conformance for CoreStar Work Order (WO) 2874
 Farley Unit 2R23 Refueling Outage SG Inspections Interim SG Engineering Assessment, dated 10/28/14
 NDE Technologies, Certificate of Qualification: ET Examiner (Anderson), dated 1/23/2013
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 NDE Technologies, Certificate of Qualification: ET Examiner (Case), dated 1/19/2013
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 SG-SGMP-14-21, Farley 2R23 Steam Generator Degradation Assessment, Rev. 0
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 Westinghouse, Certificate of Qualification: ET Examiner (Carlson, C.), dated 8/25/2012
 Westinghouse, Certificate of Qualification: ET Examiner (Conner), dated 5/23/2013
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 Zetec Certificate of Conformance for Shipment ID 14768
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 Zetec Certificate of Conformance for Shipment ID 14770
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 Krautekramer Transducer Certificate, Serial No. 00YH8X, O0YMBD
 Arcplus Probe Certificate, Serial No. RTD-09-1679 Magnaflux Cleaner Certificate of Certification, Batch No. 13M12K
 Southern Company Welders Certifications: C. Hughes, J. Thompson, J. Whiting
 Applied Technical Services Inc, Certificate of Qualification RT/PT/MT/UT: E. Jordan
 Magnaflux Sonotrace 40 Couplant, Certificate of Certification, Batch No. 13F084 & 13G111
 Magnaflux Penetrant Certificate of Certification, Batch No. 04K05K
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 Southern Company NDE, Certificate of Qualification: C. Congdon, D. Brown, D. Shaugabay, J. Funiyahk, J. Serth, P. Blecha, P. Divalerio

Section 1R11: Licensed Operator Regualification ProgramDocuments:

LOCT 14-16 Segment 3 14-S0301, Simulator Scenario Guide, 11/18/2014

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NMP-TR-416, Licensed Operator Continuing Training Program Administration, Ver. 5.6

NMP-OS-007, Conduct of Operations, Ver. 10.1

NMP-OS-007-001, Conduct of Operations Standards and Expectations, Ver. 14.3

FNP-0-SOP-0.0, General Instructions to Operations Personnel, Ver. 160.0

FNP-0-TCP-17.3 Licensed Operator Continuing Training Program Administration, Revision 36.0

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886145, Tracking CR for MR Functional Failure

878207, V49-F04 Near (a)(1) Status

Drawings

D-175012, Unit 1, HVAC & Filter PI&D, Ver. 40

D-205012, Unit 2, HVAC & Filter PI&D, Ver. 41

Documents

NMP-ES-027, Periodic Assessment Report Plant Farley a3 Assessment Plant, Ver. 2.0

Procedures

NMP-ES-027, Maintenance Rule Program, Ver. 3.1

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-0-SOP-0.4, Fire Protection Program Administration Procedure, Ver. 90.0

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Fire Watch logs, dated October 1, 2014

Shutdown Safety Function Risk Assessment Sheet, October 15, 2014

Operator's Risk Evaluation for Farley Unit 1 – Rev. 9/Version 3, November 3, 2014

Section 1R15: Operability Determinations and Functionality AssessmentsDrawings

D-175037, P&ID – Reactor Coolant System, Ver. 34.0

D-205042, P&ID – Waste Processing System, Ver. 26.0

Documents

CAR 212755, Immediate Determination of Operability for CR 873485

SS-1102-82, Specification for manually operated 2" and smaller diaphragm valves for nuclear service, dated August 19, 2008

Interim Report to the NRC of 10 CFR 21 Event 50285, reported by ITT 07/18/14 Concerning M1 diaphragms, Customer Testing, dated September 17, 2014
 Technical Evaluations 887134, 887529, 890498
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 CR 886556

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NMP-AD-012, Operability Determination and Functionality Assessments, Ver. 12.3
 FNP-0-MP-65.7, Removal, Installation, and Testing of Liseqa Snubbers, Ver. 11.0
 NMP-ES-024-203, Visual Examination (VT-3), Ver. 5.0

Section 1R18: Plant Modifications

Documents

NMP-ES-044-F01, DCP SNC467137 Signature Sheet, DCP Ver. 3.0
 NMP-ES-044-F02, DCP SNC467137 Checklist, DCP Ver. 3.0
 NMP-ES-044-F03, DCP SNC467137 List of Materials, DCP Ver. 3.0
 NMP-ES-044-F05, DCP SNC467137 Special Design Considerations, DCP Ver. 3.0
 NMP-AD-008-F01, Applicability Determination – DCP SNC467137, DCP Ver. 3.0
 ES-EP-003, 50.55a Evaluation – Farley SAM – U2 FLEX Boron Injection DCP SNC467137 / Version 3.0
 NMP-AD-010-F01, DCP SNC467137 10 CFR 50.59 Screening/Evaluation, Ver. 3.0
 NMP-AD-009-F01, DCP SNC467137, Ver. 3.0, Licensing Document Change Request No. 2014057, Ver. 1.0
 FNP-0-PMP-505, DCP SNC467137, Ver. 3.0, Inservice Test Data Sheet
 NMP-ES-024-202, DCP SNC467137, Ver. 3.0, Visual Leakage Examination Report (VT-2)
 NMP-ES-022-F11, DCP SNC467137, Ver. 2.0, Return to Service Checklist, Ver. 5.0
 Condition Reports 885698, 886171, 888299
 Technical Evaluations TE885698
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Procedures

NMP-AD-008, Applicability Determinations, Ver. 18.0
 ES-EP-003, 50.55a Evaluations, Ver. 2.0
 NMP-AD-009, Licensing Document Change Requests, Ver. 11.0
 NMP-AD-010, 10 CFR 50.59 Screenings and Evaluations, Ver. 13.0
 NMP-ES-044, Preparation of Design Change Packages, Ver. 13.0
 NMP-ES-084, Design Control/Configuration Management Process, Ver. 3.2
 NMP-ES-022, DCP Site Approval, Implementation and Closure, Ver. 10.0
 FNP-0-PMP-505, Farley Nuclear Plant - Plant Modifications Procedure, System Inservice and Hydrostatic/Pneumatic Testing, Ver. 25.0
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Drawings

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 SNC467137M003, Ver. 1.0, Unit No. 2 P&ID – Chemical and Volume Control
 SNC467137M009, Ver. 2.0, Unit No. 2 Chemical & Volume Control System – E21 – Piping and Hanger Isometric

Section 1R19: Post Maintenance Testing**Condition Reports**

784836, 872754, 875495, 875810, 888634, 899230, 892702

Procedures

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

FNP-0-EMP-1311.09, Colt-Pielstick (1-2A, 1B & 2B) Diesel Governor Controls Replacement, Set-up and Testing, Ver. 1.0

FNP-2-STP-80.11, DG 2B 50% Load Rejection Test, Ver. 22.0

FNP-2-STP-80.15, Diesel Generator B Train LOSP, Sequencer B2J Load Shedding Circuit and 2C DG SBO Start Test, Ver. 56.0

FNP-STP-80.1, Diesel Generator 1B Operability Test, Ver. 52.3

FNP-0-SOP-38.0, Diesel Generators, Ver. 124.0

FNP-0-SOP-38.0-1B, 1B Diesel Generator and Auxiliaries, Ver. 12

FNP-2-STP-22.26, 2A Auxiliary Feedwater Pump Cold Shutdown Inservice Test & Preservice Test, Ver. 23.0

FNP-2-STP-213.11, Steam Generator 2A Q2N11PT0475, Steam Generator 2B Q2N11PT0485 and Steam Generator 2C Q2N11PT0495 Loop Calibration, Ver. 31.0

FNP-2-STP-256.7E, Surveillance Test Procedure Data Package STP-256.7E, Steam Pressure Sensor Response Time Test Q2N11PT0485, Ver. 10.0

Work Orders

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

879775, 892810, 892812, 892813, 892814, 883694, 885713, 887754, 892824, 892826, 892827, 892846, 892849, 892852, 892853, 892732, 890631, 890688, 885713, 883001, 883694, 881438, 880293, 885729,

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FNP-2-STP-101.0, Low Power Reactor Physics Testing, Ver. 26.0

FNP-2-UOP-1.2, Startup of Unit from Hot Standby to Minimum Load, Ver. 101.1

FNP-2-SOP-28.1, Turbine Generator Operation, Ver. 120.0

FNP-2-STP-34.0, Containment inspection (General), Ver. 30.0

NMP-AD-016-GL01, Guideline for Using eSOMS PQ&S®, Ver. 6.1

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FNP-2-UOP-4.1, Controlling Procedures for Refueling, Ver. 65.1

FNP-2-UOP-1.1, Startup of Unit from Cold Shutdown to Hot Standby, Ver. 97.3

FNP-2-UOP-2.3, Shutdown of Unit Following a Reactor Trip, Ver. 14.1

FNP-2-UOP-2.4, Planned Reactor Shutdown and Cooldown to Cold Shutdown, Ver. 18.0

FNP-2-STP-29.2, Shutdown Margin Calculation (Tavg <547F or Before the Initial Criticality Following Refueling, Ver. 34.0

FNP-2-SOP-1.11, Reactor Coolant System Filling and Venting – Dynamic Method, Ver. 15.0

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Documents

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