



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II**

245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

May 1, 2017

EA-17-041

Dennis R. Madison, 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 05000348/2017001 AND 05000364/2017001; AND  
EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Madison:

On March 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Joseph M. Farley Nuclear Plant, Units 1 and 2. On April 25, 2017, the NRC inspectors discussed the results of this inspection with you and other members of your staff.

NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding did not involve a violation of NRC requirements. Further, inspectors documented two licensee-identified violations, which were 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 disagree with the finding not associated with a regulatory requirement or 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 Nuclear Plant.

In addition, contrary to Technical Specification (TS) 3.4.10, "Pressurizer Safety Valves," Unit 1 operated with a pressurizer safety valve inoperable for longer than the TS allowed completion time due to the safety valve lifting below the TS required minimum set pressure during its as-found, post-operational surveillance test. Although a violation of TS occurred, the violation was not within your ability to identify beforehand by reasonable licensee quality assurance measures or management controls. Therefore, the TS 3.4.10 violation was not associated with a licensee performance deficiency. The NRC concluded that the violation was of very low safety significance because there was not an adverse impact on the reactor coolant system over-pressurization protection safety function. Based on these facts, I have been authorized, after consultation with the Director, Office of Enforcement, and the Regional Administrator, to exercise enforcement discretion in accordance with Section 3.10 of the Enforcement Policy and refrain from issuing enforcement for the violation. This violation will not be considered in the assessment process or the NRC's Action Matrix.

D. Madison

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This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

*/RA/*

Joel T. Munday, Director  
Division of Reactor Projects

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

Enclosure:  
IR 05000348/2017001, 05000364/2017001  
w/Attachment: Supplemental Information

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D. Madison

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SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT – NRC INTEGRATED  
INSPECTION REPORT 05000348/2017001 AND 05000364/2017001; AND  
EXERCISE OF ENFORCEMENT DISCRETION May 1, 2017

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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.: 05000348/2017001; and 05000364/2017001

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Joseph M. Farley Nuclear Plant

Location: Columbia, Alabama

Dates: January 1, 2017 through March 31, 2017

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

Approved by: Shane Sandal, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY

IR 05000348/2017001; and 05000364/2017001, January 1, 2017, through March 31, 2017; Joseph M. Farley Nuclear Plant, Units 1 and 2, Event Follow-up

The report covered a three-month period of inspection by resident inspectors. There was one self-revealing finding documented in this report. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) dated April 29, 2015. The cross-cutting aspects are determined using IMC 0310, "Aspects within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated November 1, 2016. The NRC's program for overseeing the safe operations of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6. Documents reviewed by the inspectors which are not identified in the Report Details are identified in the List of Documents Reviewed section of the Attachment.

### Cornerstone: Initiating Events

- Green. A self-revealing finding was identified for the failure to maintain a preventive maintenance (PM) task to replace the main steam isolation valve (MSIV) test solenoid valves in accordance with the PM basis. As a result, test solenoid valve N1N11SV3369AG, which was installed for 13 years, failed and, combined with unknown additional air system leakage, led to an inadvertent closure of MSIV Q1N11HV3369A, resulting in a Unit 1 turbine trip/reactor trip with safety injection system actuation on October 1, 2016.

The licensee's failure to perform the PM task to replace the MSIV test solenoids in accordance with the PM basis as required by licensee procedure NMP-ES-006, "Preventive Maintenance Implementation and Continuing Equipment Reliability Improvement," Ver. 8.1, section 6.1.1 was a performance deficiency (PD). The PD was more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. This finding was of very low safety significance (Green) because the finding did not cause the loss of mitigation equipment relied upon to transition the plant to a stable shutdown condition following the reactor trip. The inspectors determined the finding had a cross-cutting aspect of Trending in the Problem Identification and Resolution (PI&R) area. Prior to this event, there were four documented failures of MSIV test solenoids valves in the last three years that did not get screened for programmatic or common cause issues [P.4]. (Section 4OA3.2)

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

## REPORT DETAILS

### Summary of Plant Status

Unit 1 started the report period at approximately 100 percent rated thermal power (RTP) and maintained approximately 100 percent RTP throughout the report period.

Unit 2 started the report period at approximately 100 percent RTP. On January 3, a Unit 2 load reduction to 62 percent RTP occurred because of a loss of forced cooling of the main power transformer isophase bus duct. Following the event, Unit 2 stabilized at approximately 100 percent RTP on January 5 and maintained approximately 100 percent RTP throughout the remainder of the report period.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection (71111.01) – 2 samples

##### a. Inspection Scope

Seasonal Extreme Weather Conditions: The inspectors conducted a detailed review of the station's adverse weather procedures for extreme low temperatures. The inspectors verified that weather-related equipment deficiencies identified during the previous year had been placed into the work control process and/or corrected before the onset of seasonal extremes. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures before the onset of seasonal extreme weather conditions. Documents reviewed are listed in the attachment.

The inspectors evaluated the following risk-significant systems:

- Unit 1 Auxiliary Feedwater System/Condensate Storage Tank
- Unit 2 Auxiliary Feedwater System/Condensate Storage Tank

Impending Adverse Weather Conditions: The inspectors reviewed the licensee's preparations to protect risk-significant systems from severe thunderstorm warnings and a tornado watch expected during January 21 and 22, 2017. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures, including operator staffing, before the onset of and during the adverse weather conditions. The inspectors verified that operator actions specified in the licensee's adverse weather procedure maintain readiness of essential systems. The inspectors also verified that the licensee implemented periodic equipment walkdowns or other measures to ensure that the condition of plant equipment met operability requirements.

##### b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04) – 4 samplesa. Inspection Scope

Partial Walkdown: The inspectors verified that critical portions of the following systems were correctly aligned by performing partial walkdowns. The inspectors determined the correct system lineup by reviewing plant procedures and drawings listed in the Attachment.

- Unit 2, Containment Spray System, “B” Train
- Unit 1, Residual Heat Removal System, “A” Train
- Unit 1 “B” motor-driven auxiliary feedwater (AFW) pump while the turbine-driven AFW pump was inoperable for testing and maintenance

Complete Walkdown: The inspectors verified the alignment of the Unit 2 4160 Volt Emergency Electrical Buses. The inspectors selected this system for assessment because it is a risk-significant mitigating system. The inspectors determined the correct system lineup by reviewing plant procedures, drawings, the updated final safety analysis report, and other documents. The inspectors reviewed records related to the system outstanding design issues, maintenance work requests, and deficiencies. The inspectors verified that the selected system was correctly aligned by performing a complete walkdown of accessible components. To verify the licensee was identifying and resolving equipment alignment discrepancies, the inspectors reviewed corrective action documents, including condition reports and outstanding work orders. The inspectors also reviewed periodic reports containing information on the status of risk-significant systems, including maintenance rule reports and system health reports.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05AQ) – 6 samplesa. Inspection Scope

Quarterly Inspection: The inspectors evaluated the adequacy of pre-fire plans by comparing the pre-fire plans to the defined hazards and defense-in-depth features specified in the fire protection program in the following six fire zones.

- Unit 1, Fire Area 1-016, Fire Zone 212 – 1B 125 VDC Auxiliary Building Battery Room
- Unit 1, Fire Area 1-017, Fire Zone 214 – 1A 125 VDC Auxiliary Building Battery Room
- Unit 1, Fire Area 1-018, Fire Zone 224 – 1A 125 VDC Switchgear Room
- Unit 1, Fire Area 1-019, Fire Zone 226 – 1B 125 VDC Switchgear Room
- Unit 1, Fire Area 1-020, Fire Zone 213 – 125 VDC Battery Service Room
- Unit 1, Fire Area 1-020, Fire Zone 225 – 1C 125 VDC Charger Room

The inspectors assessed the following:

- control of transient combustibles and ignition sources
- fire detection systems

- water-based fire suppression systems
- gaseous fire suppression systems
- manual firefighting equipment and capability
- passive fire protection features
- compensatory measures and fire watches
- issues related to fire protection contained in the licensee's corrective action program
- material condition and operational status of fire protection equipment

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06) – 2 samples

a. Inspection Scope

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

- Unit 1, 100' elevation - lower equipment room, auxiliary feedwater pump rooms

Underground Cables: The inspectors reviewed related flood analysis documents and inspected the areas listed below containing cables whose failure could disable risk-significant equipment. The inspector directly observed the condition of cables and cable support structures and, as applicable, verified that dewatering devices and drainage systems were functioning properly. In addition, the inspectors verified the licensee was identifying and properly addressing issues using the corrective action program.

- Unit 1, Pull Box 1ZA1M36
- Unit 2, Pull Box 2ZA2M36

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07) – 1 sample

a. Inspection Scope

Annual Review:

The inspectors verified the readiness and availability of the 2C diesel generator jacket water heat exchanger to perform its design function by reviewing eddy current testing and the licensee's heat exchanger inspection reports. Additionally, the inspectors

verified that the licensee entered any significant heat exchanger performance problems into the corrective action program and that the licensee's corrective actions were appropriate. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance (71111.11) – 2 samples

a. Inspection Scope

Resident Inspector Quarterly Review of Licensed Operator Regualification:

The inspectors observed a simulator scenario conducted for training of an operating crew for requalification on February 2, 2017.

The inspectors assessed the following:

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

Resident Inspector Quarterly Review of Licensed Operator Performance:

The inspectors observed licensed operator performance in the main control room during troubleshooting efforts associated with the Unit 2 isophase bus duct cooling units on January 13, 2017.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12) – 3 samples

a. Inspection Scope

The inspectors assessed the licensee's treatment of the three issues listed below to verify the licensee appropriately addressed equipment problems within the scope of the maintenance rule (10 CFR 50.65, "Requirements for Monitoring the Effectiveness of

Maintenance at Nuclear Power Plants”). The inspectors reviewed procedures and records to evaluate the licensee’s identification, assessment, and characterization of the problems as well as their corrective actions for returning the equipment to a satisfactory condition. The inspectors also interviewed system engineers and the maintenance rule coordinator to assess the accuracy of performance deficiencies and extent of condition.

- Unit 2, Main Isophase Bus Duct Cooling System, loss of forced cooling required large reduction in electrical load and reactor power
- Unit 2, “2B” charging pump – “A” train disconnect switch Q2R18A001A, arcing contact remained closed
- Unit 1, “1A” Reactor makeup water pump (a)(1) plan

b. Findings

A licensee-identified violation was documented in section 4OA7 of this report.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13) – 4 samples

a. Inspection Scope

The inspectors reviewed the four 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.

- Unit 1, January 9, 2017, A-train service water strainer maintenance
- Unit 1, January 12, 2017, “1A” residual heat removal (RHR) pump testing, “1A” battery charger load test
- Unit 1, March 20, 2017, High voltage switchyard work, “1B” startup transformer on single feed
- Unit 2, March 21, 2017, 230kV Webb Line OOS, reactor trip breaker testing

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15) – 6 samples

a. Inspection Scope

Operability Determinations and Functionality Assessments Review:

The inspectors selected the 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.

- CR10316899, 1C diesel generator governor oil leak
- CR10316013, Unit 1 power range channel N43 spiking low
- CR10331116, Unit 2 RCS "C" loop channel 1 and 3 flow indications
- CR10329910, Unit 2 "B" motor driven auxiliary feedwater pump recirculation line check valve bonnet leakage
- CR10306023, service water intake/exhaust ventilation hood tornado missile vulnerabilities
- CR10322897, diesel generator fuel oil storage tanks non-conforming to licensing basis

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18) – 1 sample

a. Inspection Scope

For the plant modification SNC88028, Replace Air Start Solenoid Valve for 1C and 2C Diesel Generators, the inspectors

- verified that the modifications did not affect the safety functions of important safety systems.
- confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk-significant structures, systems and components.
- verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition.
- 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.
- reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19) – 6 samples

a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the 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 SNC837818, 1C diesel generator governor oil leak repair, January 10, 2017
- WO SNC763685, 2B RHR pump quarterly test following troubleshooting plan per CR10305758
- WO SNC841332, 2C diesel generator speed switch replacement, January 29, 2017
- WO SNC844691, 2C RCS flow transmitter Q2B21FT0435 replacement, February 15, 2017
- WO SNC421395, 1B charging pump miniflow check valve Q1E21V0121B inspection, February 2, 2017
- WO SNC582261, 1B charging pump lockout relay Q1R15RLYDG0786MG6 inspection and functional test, February 2, 2017

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.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22) – 5 samples

a. Inspection Scope

The inspectors reviewed the surveillance tests listed below. The surveillance test was either observed directly or test results were reviewed to verify testing activities and results provide objective evidence that the affected equipment remain capable of performing their intended safety functions and maintain their operational readiness consistent with the facility's current licensing basis. The inspectors evaluated the test activities to assess for:

- preconditioning of equipment,
- appropriate acceptance criteria,
- calibration and appropriateness of measuring and test equipment,

- procedure adherence, and
- equipment alignment following completion of the surveillance.

Additionally, the inspectors reviewed a sample of significant surveillance testing problems documented in the licensee's corrective action program to verify the licensee was identifying and correcting any testing problems associated with surveillance testing.

#### Routine Surveillance Tests

- FNP-0-STP-80.7, Diesel Generator 1C 24 Hour Load Test, Ver. 35.1
- FNP-1-STP-228.7, NIS Power Range Channel N43 Calibration, Ver. 82
- FNP-1-STP-4.3, 1C Charging Pump Quarterly Inservice Test, Ver. 68.0
- FNP-1-STP-8.0, RCP Seal Controlled Leakage Test, Ver. 23.1

#### In-Service Tests (IST)

- FNP-1-STP-11.1, 1A RHR Pump Quarterly Inservice Test, Ver. 60.2

#### b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

#### 1EP6 Drill Evaluation (71114.06) – 1 sample

##### a. Inspection Scope

The inspectors observed the emergency preparedness drill conducted on March 22, 2017. The inspectors observed licensee activities in the simulator and/or technical support center to evaluate implementation of the emergency plan, including event classification, notification, dose assessment, and protective action recommendations. The inspectors evaluated the licensee's performance against criteria established in the licensee's procedures. Additionally, the inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the corrective action program.

##### b. Findings

No findings were identified.

#### 4. OTHER ACTIVITIES

#### 4OA1 Performance Indicator Verification (71151) – 6 samples

##### a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the Unit 1 and Unit 2 PIs listed below. The inspectors reviewed plant records compiled between January 2016 and December 2016 to verify the accuracy and completeness of the data reported for the station. The inspectors verified that the PI

data complied with guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures. The inspectors verified the accuracy of reported data that were used to calculate the value of each PI. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with PI data.

Cornerstone: Initiating Events

- unplanned scrams per 7,000 critical hours (2)
- unplanned power changes per 7,000 critical hours (2)
- unplanned scrams with complications (2)

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152) – 1 sample

.1 Routine Review

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

.2 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of the following condition reports:

- CR 10323654, Licensee acknowledgement of NCV 05000348/2016004-02 for missing condulet covers inside the Unit 1 CST trench

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

- 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

No findings were identified.

4OA3 Follow-up of Events (71153) – 4 samples.1 (Closed) Licensee Event Report (LER) 05000348/2016-003-00, Pressurizer Safety Valve Setpoint Pressure Outside of Technical Specification Tolerance Banda. Inspection Scope

This LER describes an issue with pressurizer safety valve Q1B13V0031B that was removed from service at Farley Nuclear Plant Unit 1 and tested at an offsite facility. As-found lift testing determined that the valve opened below the plant technical specification allowable lift pressure setting range. Firm evidence did not exist to identify when the failure to meet the lift setting occurred prior to the time of discovery at the test facility. The licensee stated in the LER that valve seat leakage was the most likely cause of the as-found lift pressure. During the period of time that the valve was in service, there were no control room indications of seat leakage. Upon disassembly of the valve at the testing facility following testing, there was a small amount of boric acid observed in the valve, indicating there was some seat leakage while the valve was in service. The inspectors reviewed the event, associated documents, and licensee corrective actions. The inspectors also evaluated the issue for any performance deficiencies.

b. Findings

Description: On October 13, 2016, pressurizer safety valve Q1B13V0031B, removed from service at Farley Nuclear Plant Unit 1, was tested at an offsite facility. As-found lift testing determined that the valve opened at 2443 psig steam pressure, which was low outside the plant technical specification allowable lift setting range of  $\geq 2460$  psig to  $\leq 2510$  psig. The valve was installed at Farley Nuclear Plant Unit 1 on May 27, 2015, and remained in service during one fuel cycle until removal on October 11, 2016, when it was replaced with a similar operable refurbished valve. The licensee determined that the safety valve low as-found lift set-point did not have an adverse impact on reactor coolant system over-pressurization protection, since the valve continued to perform its reactor coolant system over-pressure protection function to prevent the system from exceeding the design pressure of 2485 psig. Therefore, the plant remained bounded by the accident analysis in the FSAR, based on the as-found condition.

Enforcement: Farley Nuclear Plant Unit 1 Technical Specifications limiting condition for operation (LCO) 3.4.10, "Pressurizer Safety Valves," required three operable pressurizer safety valves with lift settings  $\geq 2460$  psig and  $\leq 2510$  psig, while the Unit was in modes 1, 2, and 3. With one pressurizer safety valve inoperable, Action Statement, Condition "A". Required Action "A.1" required restoration of the valve to operable status within 15 minutes. If the required action and associated completion time is not met, Action Statement, Condition "B" required that the unit be in mode 3 within 6 hours. Contrary to this, the licensee determined the pressurizer safety valve setting was outside the TS limits longer than 6 hours and 15 minutes during the operating cycle between May 27, 2015 and October 1, 2016, while the Unit was in modes 1, 2, and 3. TS compliance was restored by replacement of the pressurizer safety valve with an operable pressurizer safety valve prior to the beginning of operation for the next fuel cycle. The inspectors concluded that the violation was of very low safety significance (Green) and consistent with a Severity Level IV violation.

The NRC exercised enforcement discretion (Enforcement Action EA-17-041) for this violation in accordance with sections 2.2.4.d and 3.5 of the NRC's Enforcement Policy because the pressurizer safety valve as-found lift pressure was not within the licensee's ability to foresee and correct beforehand. The inspectors reached this conclusion due to the fact that during the period of time that the valve was in service, there were no control room indications of seat leakage. In addition, the low as-found lift set-point did not have an adverse impact on reactor coolant system over-pressurization protection, since the valve continued to perform its reactor coolant system over-pressure protection function to prevent the system from exceeding the design pressure of 2485 psig. This issue was entered into the licensee's corrective action program as condition report 10287017.

.2 (Closed) LER 05000348/2016-002-00, Automatic Reactor Trip and Safety Injection due to Closure of Main Steam Isolation Valve

a. Inspection Scope

On October 1, 2016, with Unit 1 at approximately 99 percent power, the plant experienced a trip of the main turbine and automatic reactor trip due to a sudden closure of a "1A" steam generator main steam isolation valve (MSIV). This caused a rapid pressure reduction in the remaining two steam generator steam lines which resulted in an automatic safety injection (SI). The emergency core cooling system (ECCS) injected into the reactor coolant system (RCS), auxiliary feedwater automatically started as expected, and all control rods fully inserted into the core. Unit 1 stabilized in Mode 3 with decay heat removed through the main condenser. The inspectors reviewed this LER, interviewed operations staff that were on shift during this event and reviewed the root cause determination report (CAR 266911). NCV 05000348/2016004-03 "Failure to Follow Procedure Resulted in Automatic Reactor Trip and Safety Injection," was documented in the Farley integrated inspection report 2016-004 (ADAMS ML17027A147) and was related to the event described in this LER.

b. Findings

Introduction: A Green self-revealing finding was identified for the failure to maintain a preventive maintenance (PM) task to replace the main steam isolation valve (MSIV) test solenoid valves in accordance with the PM basis. As a result, test solenoid valve N1N11SV3369AG, which was installed for 13 years, failed and, combined with unknown additional air system leakage, led to an inadvertent closure of MSIV Q1N11HV3369A, resulting in a Unit 1 turbine trip/reactor trip with safety injection system actuation on October 1, 2016.

Description: Following the event on October 1, 2016, Farley's root cause evaluation (CAR 266911) determined that a PM optimization effort conducted in 2004 cancelled PM task N1N11SV006 which would have replaced the MSIV test solenoid valves every seven years. The PM task was cancelled at that time because partial stroke testing of the MSIVs while at power was no longer being performed. However, a corrective action from a 2006 root cause report (CR2006103043) reinstated the partial stroke test of the MSIVs. This would have been an opportunity to re-establish the PM replacement of the test solenoid valves. Another opportunity to re-establish the replacement PM task was identified following the failure of test solenoid valve N1N11SV3370BG associated with MSIV 3370B on January 24, 2016. The subsequent equipment reliability checklist (CAR 262799) determined the cancellation of the PM task to replace the test solenoid valves

was acceptable and that “13-plus years of service is acceptable performance.” It was also recognized that the PM template expected these valves to be replaced approximately every 10 years under mild service conditions. These solenoid valves were installed in the main steam valve room and were subject to severe service conditions which likely supported the replacement frequency of seven years. Licensee procedure NMP-ES-006, “Preventive Maintenance Implementation and Continuing Equipment Reliability Improvement,” Ver. 8.1, section 6.1.1 required PM tasks to be scheduled based on the PM basis frequency and equipment availability. Because the test solenoid valve (N1N11SV3369AG) was installed for longer than expected per the PM basis (template), it failed on October 1, 2016, and allowed significant air pressure to vent off from the MSIV actuator at a rate faster than the air supply could maintain. Since air pressure was required to open and maintain the MSIVs open, the loss of air pressure allowed the MSIV disc to drift into the flow stream of the main steam system which caused the sudden closure of MSIV 3369A, resulting in a Unit 1 turbine trip/reactor trip and a safety injection system actuation. The test solenoid valves for all MSIVs were replaced on Unit 1 during the refueling outage in October 2016. Both Unit 1 and Unit 2 test solenoid valves for all MSIVs were maintained isolated, except during MSIV partial stroke testing.

Analysis: The licensee’s failure to perform the PM task to replace the MSIV test solenoids in accordance with the PM basis as required by licensee procedure NMP-ES-006, “Preventive Maintenance Implementation and Continuing Equipment Reliability Improvement,” Ver. 8.1, section 6.1.1 was a PD. The PD was more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone objective and adversely affected that objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to replace the test solenoid valves at a frequency in accordance with the PM template (basis), led to the test solenoid valve, N1N11SV3369AG, failure in service and the inadvertent closure of Unit 1 MSIV 3369A, which caused a turbine/reactor trip and safety injection system actuation on October 1, 2016. The significance of this finding was evaluated using IMC 0609, Appendix A, “The Significance Determination Process (SDP) for findings at Power,” dated June 19, 2012. This finding was determined to be of very low safety significance (Green) because, while this issue resulted in a reactor trip, it did not cause the loss of mitigation equipment relied upon to transition the plant from the onset of a trip to a stable shutdown condition. The inspectors determined the finding had a cross-cutting aspect of Trending in the Problem Identification and Resolution (PI&R) area. Prior to this event, there were four documented failures of MSIV test solenoids valves in the last three years that did not get screened for programmatic or common cause issues. [P.4]

Enforcement: Because the test solenoid valves for the associated MSIVs were not safety-related components, the finding was not associated with a violation of regulatory requirements. FIN 05000348/2017001-01, “Failure to perform PM task resulted in MSIV closure.”

- .3 (Closed) LER 05000348/2016-006-00, Manual Reactor Trip due to Loss of Speed Control on 1A Steam Generator Feed Pump

a. Inspection Scope

Unit 1 was in Mode 1 reducing power on November 8, 2016, to remove the main turbine generator from service, when at 32 percent power, operators manually tripped the reactor at 1331, before falling steam generator narrow range levels reached the automatic reactor trip set-point. All required safety systems were available and responded as expected and the unit was stabilized in Mode 3. At 1636 the licensee made a 4-hour non-emergency report to the NRC. The lowering steam generator levels resulted from the inability of the control room operators to raise the 1A feedwater pump speed after opening the recirculating control valve, due to failure of the pump speed controller. The failure of the pump speed controller was due to a failed operational amplifier on the speed reference adjust and speed controller (C2) card. The licensee investigated the card failure and documented the results of that evaluation in Corrective Action Report (CAR) 267990. The inspectors reviewed the licensee's condition report 10296282, the CAR, and associated documents, and discussed this issue with engineering and operations personnel. After the event, the control card manufacturer determined the operational amplifier failed on the new control card due to infant mortality. The C2 card was replaced, and the new card was verified to be within the required tolerance and satisfactory post maintenance testing was completed.

b. Findings

No findings were identified.

.4 (Closed) LER 05000348/2016-004-00, Unapproved Environmental Qualification Material Caused Inoperability of One Containment Cooling Train

a. Inspection Scope

Unit 1 was in mode 6 during a refueling outage on October 20, 2016, when the licensee discovered the motor field cables for the Unit 1 "C" containment cooler fan contained splice material that was not approved for use inside containment. The material was installed as part of a design change during the previous refueling outage. The unapproved splice material could have exposed the associated connectors to untested environmental conditions during a postulated accident. On December 19, 2016 the licensee submitted a Licensee Event Report (LER) to the NRC. The licensee investigated the installation of the unapproved splice kit and documented the results of that evaluation in Corrective Action Report (CAR) 267932. The inspectors reviewed the licensee's CAR, Condition Reports (CRs) 10288801 and 10317447, LER 2016-004, Human Performance Checklist NMP-GM-002-F31, and applicable environmental qualification (EQ) documentation. The unapproved splice material was removed and replaced with a qualified splice kit for use inside of containment and satisfactory post-maintenance testing was completed.

b. Findings

A licensee identified violation was documented in section 40A7 of this report.

#### 4OA5 Other Activities

##### .1 (Closed) Temporary Instruction (TI) 2515/192, Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems

###### a. Inspection Scope

The objective of this performance based Temporary Instruction is to verify implementation of interim compensatory measures associated with an open phase condition design vulnerability in electric power system for operating reactors. The inspectors conducted an inspection to determine if the licensee had implemented the following interim compensatory measures. These compensatory measures are to remain in place until permanent automatic detection and protection schemes are installed and declared operable for open phase condition design vulnerability. The inspectors verified the licensee:

- identified and discussed with plant staff the lessons learned from the open phase condition events at U.S. operating plants including the Byron Station open phase condition and its consequences. This included conducting operator training for promptly diagnosing, recognizing consequences, and responding to an open phase condition.
- updated plant operating procedures to help operators promptly diagnose and respond to open phase conditions on off-site power sources credited for safe shutdown of the plant.
- established and implemented periodic walkdown activities to inspect switchyard equipment such as insulators, disconnect switches, and transmission line and transformer connections associated with the offsite power circuits to detect a visible open phase condition.
- ensured that routine maintenance and testing activities on switchyard components have been implemented and maintained. As part of the maintenance and testing activities, the licensee assessed and managed plant risk in accordance with 10 CFR 50.65(a) (4) requirements.

###### b. Findings

No findings were identified.

#### 4OA6 Meetings, Including Exit

On April 25, 2017, the resident inspectors presented the inspection results to Dennis Madison 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) were identified by the licensee and were violations of NRC requirements which met the criteria of the NRC Enforcement Policy for being dispositioned as non-cited violations.

- 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” required, in part, that measures be established for the selection and review for suitability of application of materials and parts that are essential to the safety-related functions of the structures, systems, and components. Contrary to those requirements, on October 20, 2016, the licensee discovered that an incorrect splice kit for the 1C containment cooler fan was installed on May 4, 2015. The design called for a bolted “V” splice, but the licensee installed a bolted in-line splice kit that was not suitable for use inside containment in accordance with Environment Qualification Package A-506152-0029E, Rev. 2. This error resulted in the inoperability of the 1C containment cooler during periods of the Unit 1 operating cycle 27 (May 7, 2015 – October 1, 2016). Specifically, there were four periods during applicable modes (modes 1 – 4) when the 1C containment cooler was the selected cooler for train “B” for a period greater than seven days, which exceeded the allowed completion time per TS 3.6.6. Upon discovery of the incorrect containment cooler splice kit in-use, the licensee removed and replaced the bolted in-line splice with an approved bolted “V” splice kit. The repairs were completed and tested on October 25, 2016. The finding was determined to be Green, very low safety significance, because the finding did not represent an actual open pathway in the physical integrity of the reactor containment, nor did it involve an actual reduction in function of the hydrogen igniters using the Barrier Integrity screening questions. The licensee entered this issue into the corrective action program as CRs 10288801 and 10317447.
- 10 CFR 50.65 (a)(1) required, in part, that holders of an operating license shall monitor the performance or condition of structures, systems and components (SSCs) within the scope of the rule as defined by 10 CFR 50.65 (b), against licensee established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. Such goals shall be established commensurate with safety. When the performance or condition of a SSC does not meet established goals, appropriate corrective action shall be taken. Contrary to the above, from October 22, 2015, the time that maintenance rule (MR) function P12-F02, 1A reactor makeup water system was placed in (a)(1) status, the licensee did not take appropriate corrective actions when performance of the 1A reactor make up water system did not meet licensee established goals and did not repair the cause of previous 1A reactor makeup water pump failures. According to the MR (a)(1) plan EVAL-F-P12-02947 dated October 22, 2015, work order SNC59263 to flowscan pressure control valve (PCV) 510 and calibrate/replace pressure controller 510 was due on February 28, 2016. That work order was not completed on time as discussed in the (a)(1) plan and on June 28, 2016, CR10241662 requested a new work order to make the necessary repairs to PCV-510. As a result, a corrective maintenance work order SNC799691 was generated but was later cancelled. Further discussed in the (a)(1) plan from October 2015 was technical evaluation (TE) 915229. This TE documented the creation of work orders SNC55726 and SNC55728 as a completed corrective action. However, those corrective maintenance work orders were cancelled as part of a WO backlog reduction effort in September 2015. Preventive maintenance work order SNC59263 remained open, but was rescheduled for May 2018. CR10322037 was written by the system engineer and WO SNC59263 was rescheduled for July 2017. On February 8, 2017, CR10328144 identified degradation of PCV-510 and a corrective maintenance WO (SNC 844008) was approved to repair this valve in April 2017. An equipment outage on the 1A reactor makeup water pump occurred during the week March 13, 2017, but the (a)(1) corrective action WO SNC59263 was

not included in this equipment outage. This finding was determined be Green, very low safety significance, because the finding was not a deficiency affecting the design or qualification of a mitigating SSC, did not represent a loss of system and/or function, did not represent an actual loss of function of at least a single Train for longer its TS allowed outage time, and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee personnel:

S. Briggs, Plant Manager  
J. Carroll, Shift Operations Manager  
V. Flowers, Performance Improvement Supervisor  
S. Henry, Work Management Director  
J. Horn, Operations Director  
R. Hruby, Engineering Director  
N. Koteel, Operations Support Manager  
D. Madison, Site Vice President  
D. Reed, Engineering Systems Manager  
D. Simmons, EP Supervisor  
J. Short, Maintenance Director  
B. Taylor, Regulatory Affairs Manager  
C. Welsh, Engineering Support Manager  
E. Williford, Licensing Supervisor

### **LIST OF REPORT ITEMS**

#### Opened and Closed

FIN 05000348/2017001-01      Failure to perform PM task resulted in MSIV closure (4OA3.2)

#### Closed

LER 05000348/2016-003-00      Pressurizer Safety Valve Setpoint Pressure Outside of Technical Specification Tolerance Band (4OA3.1)

LER 05000348/2016-002-00      Automatic Reactor Trip and Safety Injection due to Closure of Main Steam Isolation Valve (4OA3.2)

LER 05000348/2016-006-00      Manual Reactor Trip due to Loss of Speed Control on 1A Steam Generator Feed Pump (4OA3.3)

LER 05000348/2016-004-00      Unapproved Environmental Qualification Material Caused Inoperability of One Containment Cooling Train (4OA3.4)

TI 2515/192      Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems (4OA5.1)

## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather Protection**

#### Procedures:

FNP-0-SOP-0.12, Cold Weather Contingencies, Ver. 22.1  
NMP-GM-025, Seasonal Readiness Process, Ver. 4.1  
FNP-1-EMP-1383.01, Freeze Protection Inspections, Ver. 21.1  
FNP-2-EMP-1383.01, Freeze Protection Inspections, Ver. 16.1  
FNP-0-AOP-21, Ver. 44  
FNP-0-ARP-8, Ver. 27  
FNP-1-ARP-1.1, Ver. 56

#### Drawings:

D-173498, Unit 1 - Single Line, Cable & Conn. Diagram 120/280 VAC Dist. Cab 1CC, Rev. 11.0  
D-203498, Unit 2 - Single Line, Cable & Conn. Diagram 120/280 VAC Dist. Cab 2CC, Ver. 9.0  
B-172374, Unit 1 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 6, Rev. 6  
B-172374, Unit 1 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 7, Rev. 3  
B-172374, Unit 1 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 25, Rev. 2  
B-202374, Unit 2 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 6, Rev. 6  
B-202374, Unit 2 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 7, Rev. 5  
B-202374, Unit 2 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 24, Rev. 4  
B-202374, Unit 2 - Freeze Protection – Service Water & Misc. Cold Piping, Sheet 25, Rev. 2

#### Condition Reports:

10305796, 10305809, 10306185, 10306661, 10306669, 10307061, 10311651, 10312111,  
10312893, 10312893, 10313315, 10314458, 10321049, 10321060, 1032162, 10321069

#### Documents:

WO SNC533956, SNC533981  
Freeze Protection Deficiencies List per FNP-0-SOP-0.12, dated January 6, 2017  
Letter: Plant Farley Certification of 2017 Winter Readiness, dated November 14, 2016  
Letter: Addendum to Plant Farley Certification of 2017 Winter Readiness, dated  
December 1, 2016  
Administrative Tracking Item (ATI) #1787

### **Section 1R04: Equipment Alignment**

#### Drawings:

D-205038, Unit 2 P&ID – Safety Injection System (Containment Spray), Sheet  
3, Ver. 34  
D-205038, Unit 2 P&ID – Safety Injection System, Sheet 1, Ver. 39  
D-175038, Unit 1 P&ID - Safety Injection System, Sheet 1, Ver. 44.0  
D-175038, Unit 1 P&ID - Safety Injection System, Sheet 2, Ver. 23.0  
D-175041, Unit 1 P&ID - Residual Heat Removal System, Sheet 1, Ver. 18.0  
D-175007, Unit 1 P&ID - Auxiliary Feedwater System, Sheet 1, Ver. 35.0  
D-207001, Unit 2 Single Line – Electrical Auxiliary System (Emergency 4160V & 600V),  
Ver. 21.0  
D-207005, Unit 2 Single Line Protection and Metering - 4160V Switchgear Bus 2F (Emergency),  
Ver. 14.0

D-207006, Unit 2 Single Line Protection and Metering - 4160V Switchgear Bus 2G (Emergency), Ver. 18.0  
 D-207018, Unit 2 Single Line Protection and Metering - 4160V Switchgear Bus 2H (Emergency), Ver. 11.0  
 D-207027, Unit 2 Single Line Protection and Metering - 4160V Switchgear Bus 2J (Emergency), Ver. 2.0  
 D-207043, Unit 2 Single Line Protection and Metering - 4160V Switchgear Bus 2K (Emergency), Rev. 2  
 D-207044, Unit 2 Single Line Protection and Metering - 4160V Switchgear Bus 2L (Emergency), Rev. 2

Procedures:

FNP-2-SOP-9.0, Containment Spray System, Ver. 37.2  
 FNP-2-SOP-9.0A, Containment Spray System, Ver. 8.0  
 FNP-1-SOP-7.0, Residual Heat Removal System, Ver. 108.0  
 FNP-1-SOP-7.0A, Residual Heat Removal System, Ver. 10.0  
 FNP-2-SOP-36.0, Plant Electrical Distribution Line-Up, Ver. 10.0  
 FNP-2-STP-27.1, AC Source Verification, Ver. 32.0  
 FNP-1-SOP-22.0A, Auxiliary Feedwater System, Ver. 18.0

Condition Reports:

10290847, 10334824, 10340143, 10346247, 10346355, 10346526, 10346593, 10346597, 10346624, 10346627, 10346964, 10349869, 10349882, 10349886, 10350036

Documents:

WO SNC811690, TE970855, TE979314, TE842719, WMS DRF# 972070, LTAM F-14-0627, Q1-2016 Unit 2 System R15 Health Report  
 WO SNC849920, SNC853002, SNC853003

**Section 1R05: Fire Protection Annual/Quarterly**

Drawings:

D-513639, Unit No. 1 Fire Barriers and Fire Boundaries – U1 Auxiliary Building and Containment El. 121', 127' and 129', Ver. 1.0

Documents:

A-181805, NFPA 805 Fire Protection Program Design Basis Document, Ver. 1.0  
 WO1041761601, FNP-1-FSP-41.2, Fire Dampers – Functional Test, Ver. 14.0  
 WO SNC438324, FNP-1-FSP-65.0, Fire Dampers Functional Inspection Auxiliary Building-Diesel Building-Service Building, Ver. 18.0  
 WO SNC462918, FNP-1-FSP-63.07B, Visual Inspection of Penetration Fire Barriers (Auxiliary Building – Battery Rooms, Battery Charger Rooms, DC Swgr. Rooms), Ver. 1.0  
 WO SNC464766, FNP-1-FSP-65.0B, Fire Dampers Functional Inspection Auxiliary Building – Diesel Building – Service Water Building Train “B”, Ver. 5.0  
 WO SNC517737, FNP-1-FSP-65.0A, Fire Dampers Functional Inspection Auxiliary Building – Diesel Building – Service Water Building Train “A”, Ver. 5.0  
 WO SNC539087, FNP-1-FSP-405.0, Preaction Sprinkler System (Annual), Ver. 16.0  
 WO SNC578376, FNP-1-FSP-63.07A, Visual Inspection of Penetration Fire Barriers (Auxiliary Building – Battery Rooms, Battery Charger Rooms, DC Swgr. Rooms), Ver. 2.0  
 WO SNC593970, FNP-1-FSP-307.0, Smoke Detector – Biennial Operability and Adjustment, Ver. 23.1

WO SNC594857, FNP-1-FSP-307.0, Smoke Detector – Biennial Operability and Adjustment, Ver. 23.1

WO SNC594862, FNP-1-FSP-307.0, Smoke Detector – Biennial Operability and Adjustment, Ver. 23.1

WO SNC609474, FNP-1-FSP-65.2A, Fire Doors Functional Inspection Auxiliary Building – Diesel Building – Service Water Building Train “A”, Ver. 3.0

WO SNC609495, FNP-1-FSP-65.2B, Fire Doors Functional Inspection Auxiliary Building – Diesel Building – Service Water Building Train “B”, Ver. 3.0

WO SNC788280, FNP-1-FSP-9, Portable Extinguishers – Monthly, Ver. 43.0  
CAR265376

Procedures:

FNP-1-FPP-1.0, Unit 1 Auxiliary Building Pre-Fire Plan, Ver. 1.0

Condition Reports:

10230166, 10261278, 10268774, 10325509

**Section 1R06: Flood Protection Measures**

Documents:

WO SNC781403

RER SNC838248 Seq. No. 1, January 12, 2017

RER SNC 817432 Seq. No. 1, Oct. 29, 2016

DOEJ-FR-SNC817432-M001, Sep. 30, 2016

Procedures:

NMP-ES-051-004, Pull Box Inspection Procedure, Ver. 5.0

Drawings:

D-172100, Unit 1, Outdoor Electrical Duct Runs – General Arrangement, Sht 1, Ver. 10.0

D-172462, Unit 1, Class 1 Pull Box Covers, Ver. 2.0

C-172416, Unit 1, Plan and Development of Pull Box A1M36, Rev. 0

C-202416, Unit 2, Plan and Development of Pull Box A2M36, Rev. 0

D-175007, Ver. 35

D-175033, Ver. 26

Condition Reports:

10322705, 10323411, 10323662, 10323703, 10335098

**Section 1R07: Heat Sink Performance**

Procedures:

NMP-ES-012, Heat Exchanger Program, Ver. 10.1

NMP-ES-012-GL01, Heat Exchanger Program Heat Exchanger Inspection, Testing and Condition Assessment, Ver. 4.0

NMP-ES-012-GL03, Heat Exchanger Program Eddy Current Testing (ECT) Strategic Plan for Farley, Ver. 1.0

NMP-ES-024-701, Eddy Current Testing of Heat Exchanger Tubing, Ver. 3.1

FNP-0-MP-13.1, Emergency Diesel Generators 1C and 2C 24 Month Inspection, Ver. 57.0

Documents:

NDE Technology Inspection Summary Report for Farley Unit 2, 2C Diesel Generator (DG) Jacket Water Cooler, January 2017  
 IQ Review Maintenance Review Strategy for the 2C DG Jacket Water Heat Exchanger QSR43H0509, Approved September 2, 2014  
 CR 10323481, 10323639  
 Work Order SNC711032, SNC841174  
 SM-C081865601-001, Plant Farley HX Tube Plugging Criteria, Ver. 6  
 SM-97-1505-001, Ver. 5.0

**Section 1R11: Licensed Operator Requalification Program**Documents:

As-Left Scenario #2, Operations Training Simulator Exam Scenario, Approved on January 9, 2017

Procedures:

NMP-TR-416, Licensed Operator Continuing Training Program Administration, Ver. 7  
 NMP-OS-007, Conduct of Operations, Ver. 13  
 NMP-EP-110-GL01, FNP EALs – ICs, Threshold Values and Basis, Ver. 9.0

**Section 1R12: Maintenance Effectiveness**Documents:

CARs: 268604, 259760,  
 Maintenance Rule Scoping Document, Function R18, printed Feb. 9, 2017  
 Maintenance Rule Scoping Document, Function P12, printed Mar. 15, 2017  
 Unit 2 MCR logs for January 22, 2017  
 NUMARC 93-01, Rev. 4A  
 MREP 15-10 meeting minutes, Aug 27, 2015  
 MREP 15-13 agenda, Oct. 22, 2015  
 EVAL-F-P12-02947 – MR (a)(1) plan for MR function P12 on Unit 1

Technical Evaluations:

976532, 977616, 978710, 978705, 915229

Work Orders:

SNC835893, SNC835895, SNC836342, SNC836821, SNC59293, SNC55726, SNC55728, SNC799691

Condition Reports:

10312973, 10313904, 10313949, 10323809, 10325726, 10321145, 10328834, 10340757, 10340764, 10118534, 10322037, 10241662

Procedures:

NMP-ES-027, Ver. 6  
 NMP-ES-027-001, Ver. 8  
 NMP-AD-012, Ver. 13.1  
 FNP-0-SOP-0.13, Ver. 33  
 FNP-2-SOP-2.1, Ver. 137  
 NMP-GM-006, Ver. 13.8  
 NMP-GM-006-GL11, Ver. 1.6

**Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation**Procedures:

NMP-GM-031-001, Ver. 3  
 NMP-GM-031-003, Ver. 3  
 NMP-DP-001, Ver. 14.3  
 NMP-OS-010-001, Ver. 14

Condition Reports:

10316343

Documents:

Unit 1, EOOS Operator's Risk Report, January 9, 2017  
 Unit 1, EOOS Operator's Risk Report, January 12, 2017  
 Unit 1, EOOS Operator's Risk Report, March 20, 2017  
 D-175003, Ver. 57  
 Traveler Document for Week of 01/07/2017  
 EOOS Importance Calculator Results report, Jan 9, 2017

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

D-205007, Sheet 1, Ver. 29.0  
 D-205037, Sheet 1, Ver. 29  
 D-205150, Sheet 1, Ver. 15  
 D-205398, Sheet 1, Ver. 16  
 D-205401, Sheet 1, Ver. 3  
 U-215624, Ver. B  
 B-205803, Ver. 68  
 U-209229, Ver. 4.0

Documents:

Main Control Room Logs, January 10, 2017  
 PDO 1-17-01, Prompt Determination of Operability for U1 N43  
 IRT F-17-004, Activation Checklist  
 FNP-2-STP-1.0, Ver. 111  
 Admin Tracking Item (ATI) 1419, dated May 16, 2016  
 Work Orders: SNC840976, 840977, 840978, 840979, 840980, 832554, 832555, 832564,  
 832565  
 CAR 267899  
 TE 975165, 975167, 975166  
 Event Notification #52414, Dec. 7, 2016  
 Admin Tracking Item (ATI) 1787, Dec. 8, 2016

Procedures:

FNP-0-SOP-38.0-1C, Ver. 14  
 NMP-AD-012, Ver. 13.1  
 FNP-1-STP-109.0, Ver. 61  
 FNP-0-AOP-21, Revs. 44 & 45

Condition Reports:

10320023, 10316013, 10313096, 10083947, 729760, 555169, 10329910, 10219082, 10219492,  
10220554, 10331065, 10331863

**Section 1R18: Plant Modifications**Documents:

SNC619800

Condition Reports:

10323952

Procedures:

FNP-0-STP-154.3, Ver. 26

FNP-0-STP-80.17, Ver. 42.3

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

10305758, 10321325, 10323987, 10330001, 10331099, 10331116, 10332019, 10332064,  
10332462, 10332534, 10333599, 10332533, 10336587, 10340355, 10325167, 10325587,  
10325881, 10326056, 10332533, 10336587, 10337514, 10338024, 10338939, 10343641

Procedures:

NMP-MA-014-001, Post Maintenance Testing Guidance, Ver. 4.2

FNP-0-SOP-38.0, Ver. 126

FNP-0-SOP-38.0-1C, Ver. 14

FNP-2-STP-11.2, Ver. 41

FNP-0-SOP-38.0-2C, Ver. 14

FNP-0-STP-80.17, Ver. 42.2

FNP-2-STP-201.14, Ver. 27.2

FNP-0-IMP-430.16, Ver. 27.0

Work Orders:

SNC841332, SNC421395, SNC779700, SNC750316, SNC582261, SNC842374

Documents:

Technical Evaluation (TE) 974827, 974828, 979348, 979349

CAR 268609

Main Control Room (MCR) logs, December 7, 2016

Main Control Room (MCR) logs, February 2, 2017

Clearance Tagout 2-DT-16-E11-00459

Clearance Tagout 1-DT-16-E21-00975

Operations Standing Order S-2017-002, Ver. 1.0

**Section 1R22: Surveillance Testing**Condition Reports:

10316899, 10324648, 10324620

Procedures:

FNP-0-ARP-19.2, Ver. 29

FNP-0-SOP-38.0, Ver. 126

FNP-0-SOP-38.0-1C, Ver. 14  
 FNP-0-STP-80.2, Ver. 66.1

Documents:

Work Orders (WO) SNC778465, SNC7996641, SNC707990  
 Farley Unit 1, 4<sup>th</sup> Interval Pump Inservice Testing Basis Document, Ver. 4  
 ASM OM Code 2001, Code for Operation and Maintenance of Nuclear Power Plants  
 Main Control Room Logs, January 30, 2017

**Section 1EP6: Drill/Training Evaluation**

Documents:

Emergency Preparedness Crew 3 Exercise Controller/Evaluator Package, March 22, 2017  
 Plant Farley Emergency Notification Form, Message 1, March 22, 2017  
 Plant Farley Emergency Notification Form, Message 2, March 22, 2017  
 Plant Farley Emergency Notification Form, Message 3, March 22, 2017  
 Plant Farley Emergency Notification Form, Message 4, March 22, 2017

Procedures:

NMP-EP-110-GL01, Ver. 11  
 FNP-1-AOP-30, Ver. 20  
 NMP-EP-141-001, Ver. 1  
 FNP-1-FRP-S.1, Rev. 29  
 FNP-1-AOP-32, Rev. 9  
 FNP-1-ESP-0.1, Rev. 35  
 FNP-1-FRP-H.1, Rev. 27  
 NMP-EP-112-001, Ver. 1.1  
 NMP-EP-144, Ver. 1.0

**Section 4OA1: Performance Indicator Verification**

Procedures:

FNP-0-AP-54, Preparation and Reporting of NRC Performance Indicator Data and NRC  
 Operating Data, Ver. 15.0

Documents:

Selected Unit 1 and Unit 2 Control Room Logs from January 2016 through December 2016  
 Integrated Plant Computer (IPC) trends – Jan. 2016 to Dec. 2016  
 NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7

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

Condition Reports:

10273516, 10297246, 10323654, 10320343, 10332670, 10334697, 10337504

**Section 4OA3: Event Follow-up**

Documents:

CAR 266911, Ver. 2  
 MR EVAL: EVT-N11-2016-20485  
 Memo from J. Holton (SNC) describing cause(s) of MSIV closure, Nov. 16, 2016  
 Exelon Power Labs Test Report, FAR 90385, December 20, 2016  
 IQ Review – PM Template for Solenoid Operated Valves, Rev. 0

Maintenance Rule Expert Panel (MREP) meeting # 17-02 agenda  
 PMCR 86195 – reactivate PMs N1(N2)N11SV001 through SV006.  
 SNC465298, SNC666036, SNC389624, SNC822137, SNC825843, SNC826346  
 RER SNC822780  
 TE 972110, TE 973775  
 EN52356  
 CAR267990, dated 1/27/2017

Procedures:

NMP-ES-006, Ver. 9.1  
 NMP-ES-006-002, Ver. 5

Condition Reports:

10172579, 892246, 748754, 10217682, 10294845, 10292884, 10282835, 10282591, 10281875,  
 10281586, 10281174, 10281044, 10281038, 10281040, 10280842, 10280758, 2006103043,  
 10284839, 10287017, 10310122, 10295195, 10295745, 10295751, 10295779, 10296258,  
 10296282, 10299205

**Section 4OA5: Other Activities**

Documents:

NL-12-2037, Farley response to NRC Bulletin 2012-01, Oct. 25, 2012  
 NL-14-0187, Response to NRC Request for Additional Information, Feb 3, 2014  
 NLO2012003, Byron Open Phase Event, Aug 24, 2012  
 LO2012007, Aug. 24, 2012  
 Farley Nuclear Plant 230kV Yard Inspection template, Sept 9, 2012  
 Farley Nuclear Plant 230kV Yard Inspection results, Aug. 2, 2016  
 Alabama Power work order 402693 for Farley SWYS inspection  
 CRs 10332173, 10345575, 10340949, 10341043, 10341859, 10342690, 10345052, 10345384,  
 10345387, 10346778, 10346921, 10346968, 10347626, 10347848

Procedures:

FNP-1-STP-27.1, Ver. 39  
 FNP-0-SOP-0.3, Ver. 55  
 FNP-1-AOP-5.2, Ver. 16.1  
 NMP-GM-021, Ver. 5  
 NMP-GM-031, Ver. 3  
 NMP-GM-031-001, Ver. 3  
 FNP-0-MP-111.3, MPC Fuel Loading Operations, Ver 26.0

Drawings:

D-169970L, Sheets 1 – 3, Ver. 1