



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II**

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ATLANTA, GEORGIA 30303-1257

February 12, 2018

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 – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 05000348/2017004
AND 05000364/2017004**

Dear Mr. Madison:

On December 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Joseph M. Farley Nuclear Plant, Units 1 and 2. On January 23, 2017, NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

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

If you contest the 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; and the NRC resident inspector at the Joseph M. Farley Nuclear Plant, Units 1 and 2.

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 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; and the NRC resident inspector at the Joseph M. Farley Nuclear Plant, Units 1 and 2.

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/

Alan Blamey, Chief
Reactor Projects Branch 2
Division of Reactor Projects

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

Enclosure:
IR 05000348/2017004, 05000364/2017004
w/Attachment: Supplemental Information

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SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 05000348/2017004
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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.: 05000348/2017004; and 05000364/2017004

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Joseph M. Farley Nuclear Plant

Location: Columbia, Alabama

Dates: October 1, 2017 through December 31, 2017

Inspectors: P. Niebaum, Senior Resident Inspector
K. Miller, Resident Inspector
B. Collins, Reactor Inspector (1R08)
W. Pursley, Health Physics Inspector (2RS1)
B. Caballero, Senior Operations Engineer (1R11)

Approved by: Alan Blamey, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000348/2017004; and 05000364/2017004, October 1, 2017, through December 31, 2017; Joseph M. Farley Nuclear Plant, Units 1 and 2, Fire Protection, Refueling and Other Outage Activities, Problem Identification and Resolution.

The report covered a 3-month period of inspection by resident inspectors and regional inspectors. There are two NRC-identified and one self-revealing violations 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. If a cross-cutting area was assigned include the following: 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 Attachment.

Cornerstone: Mitigating Systems

- Green. A self-revealing finding was identified for the licensee's failure to evaluate the impacts to the Unit 2 Reactor Coolant Pump (RCP) 2C oil collection system when a service water (SW) leak was identified on the Unit 2 RCP motor air coolers. As a result, a strategy was not implemented to prevent service water from collecting in the 2C RCP oil collection system drain tank which impacted its design function while the plant was in Mode 1. The licensee's failure to evaluate the potential impacts to the Unit 2 RCP 2C oil collection system during the operability/functionality evaluation of the SW leak associated with RCP motor air coolers was a performance deficiency. The licensee initiated condition reports (CRs) 10420400 and 10422562 and replaced the 2C RCP motor and leaking air cooler.

The finding was more than minor because it was associated with the protection against external factors (fires) and adversely affected the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to maintain adequate capacity in the RCP 2C Oil Spillage Protection System (OSPS) oil collection tank presented a degradation of a fire confinement component which has a fire prevention function of not allowing an oil leak to reach hot surfaces. The significance of this finding was evaluated using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because the performance deficiency affected fire protection defense-in-depth strategies involving fire confinement. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) because the exposed fire area contained no potential damage targets that are unique from those in the exposing fire area. The inspectors determined the finding had a cross-cutting aspect of "Evaluation" in the problem identification and resolution area because the licensee did not fully evaluate the impacts of the RCP motor air cooler SW leak on the Unit 2 RCP oil collection systems. [P.2] (Section 1R05)

- Green. An NRC-identified NCV of 10 CFR 50.48(c) and National Fire Protection Association Standard 805 (NFPA 805), Section 3.3.12, was identified for the licensee's failure to maintain the Unit 2 RCP 2B oil collection system in an operable condition to perform its design function. Specifically, the licensee failed to ensure that the RCP 2B OSPS oil lift system enclosure collected all oil leakage from all potential leakage sites, including the oil lift system. The licensee's failure to maintain the Unit 2 RCP 2B oil collection system in an operable condition to perform its design function was a performance deficiency. The licensee initiated CR 10428611, and determined an oil leak was not active. Another CR was initiated (10446206) to inspect and, if needed, repair this area at the next available opportunity.

The finding was more than minor because if left uncorrected, the performance deficiency would have the potential to become a more significant safety concern. Specifically, failing to ensure that the RCP 2B Oil Spillage Protection System oil lift system enclosure collected all oil leakage from all potential leakage sites, including the oil lift system, presented a degradation of a fire confinement component which has a fire prevention function of not allowing an oil leak to reach hot surfaces. The significance of this finding was evaluated using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because the performance deficiency affected fire protection defense-in-depth strategies involving fire confinement. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) because the exposed fire area contains no potential damage targets that are unique from those in the exposing fire area. The inspectors determined the finding had a cross-cutting aspect of "Design Margins" in the human performance area because the licensee did not maintain fire protection defense-in-depth by ensuring the Unit 2 RCP 2B oil collection system was in an operable condition to perform its design function. (H.6) (Section 1R20)

- Green. A self-revealing NCV of Technical Specification (TS) 5.4.1.a, "Procedures," was identified when the Unit 1 Turbine Driven Auxiliary Feedwater (TDAFW) uninterruptible power supplies (UPS) swapped to a bypass power source during maintenance on November 5, 2017. As a result, the TDAFW pump was rendered inoperable. Failure to follow licensee procedure FNP-1-EMP-1352.01, "TDAFW UPS Battery Weekly Battery Inspection," Version 19, as written was a performance deficiency. The operability of the TDAFW pump UPS was restored after approximately 3 hours. The licensee entered this issue into their Corrective Action Program (CAP) as Condition Report (CR) 10427370.

The finding was more than minor because it was associated with the equipment performance attribute of the mitigating system cornerstone and adversely affected that cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences since the TDAFW pump was rendered inoperable. 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 all of the mitigating systems screening questions were answered NO. The inspectors determined the finding had a cross-cutting aspect of Avoid Complacency in the Human Performance area because the individuals involved in this maintenance did not recognize or plan for the possibility of mistakes and appropriate error reduction tools were not implemented. [H.12] (Section 4OA2.3)

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: Unit 1 started the report period at approximately 100 percent rated thermal power (RTP). Unit 1 maintained approximately 100 percent RTP through the end of the report period.

Unit 2: Unit 2 started the report period at approx. 100 percent RTP. On October 15, 2017, Unit 2 shutdown for a refueling outage. Following completion of the outage on November 15, 2017, Unit 2 achieved 100 percent RTP on November 19, 2017. Unit 2 maintained approximately 100 percent RTP through the end of the report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

Impending Adverse Weather Conditions: The inspectors reviewed the licensee's preparations to protect risk-significant systems from adverse weather conditions (Tropical Storm/Hurricane Nate) expected on site October 7 and 8, 2017. 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 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)

a. 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, "2B" emergency diesel generator (EDG)
- Unit 2, "2B" penetration room filtration system

The inspectors reviewed corrective action documents, including condition reports and outstanding work orders, to verify the licensee was identifying and resolving equipment alignment discrepancies. 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)

a. Inspection Scope

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

- Unit 2, Room 2-055 – Containment Building, Fire Area 2-055, Fire Zone 2-CTMT
- Unit 1 and 2, Room 401, Common Main Control Room, Room, Fire Area 044, Fire Zones 0401-U1 & 0401-U2

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

Introduction: A Green Self-Revealing finding was identified for the licensee's failure to evaluate the impacts to the Unit 2 Reactor Coolant Pump (RCP) 2C oil collection system when a service water (SW) leak was identified on the Unit 2 RCP motor air coolers. As a result, a strategy was not implemented to prevent service water from collecting in the 2C RCP oil collection system drain tank which impacted its design function while the plant was in Mode 1. The licensee's failure to evaluate the potential impacts to the Unit 2 RCP 2C oil collection system during the operability/functionality evaluation of the SW leak associated with RCP motor air coolers, was a performance deficiency.

Description: On October 17, 2017, the inspectors performed a Unit 2 containment building inspection while the plant was in Mode 5. The inspectors noted that one of the RCP 2C motor air cooling coils had been leaking service water and some of that water was dripping from inside the motor housing into the oil catch-basin below the lower

motor bearing oil reservoir. The licensee had previously noted an increasing rate of Unit 2 containment sump in-leakage, beginning on September 21, 2017, and operating personnel made a containment entry on September 27 to look for possible leak sources in low-dose accessible areas, concluding that an RCP motor air cooling coil was likely leaking service water. By October 9, 2017, the Unit 2 containment sump in-leakage rate was approximately 0.75 gpm. Plant operators evaluated the operational impact on October 10, 2017, associated with CR 10411954, but the evaluation did not consider the possible impact on the oil spillage protection system (OSPS) functionality. A 300-gallon capacity OSPS oil collection tank is provided on the 105'-6" elevation of the containment for each RCP and each RCP motor contains 265 gallons of lubricating oil. Each tank is provided with an open vent of 2-inch schedule 40 piping at the top of the tank. Following the containment inspection on October 17, 2017, the licensee drained the contents of each oil collection tank and found approximately 137 gallons of water in the 2C RCP oil collection drain tank. With this amount of water in the tank, there would not be sufficient capacity in the tank to contain the full inventory of the RCP 2C motor lubricating system. The tank would only be able to accept approximately 163 gallons of oil, leaving up to 102 gallons of oil that would spill out onto the reactor containment building floor. Licensee procedure NMP-AD-012, "Operability Determinations and Functionality Assessments," Ver. 13.1, section 4.2.3 required (in part) the licensee to evaluate the effects on other components if the condition could affect other components. Contrary to those requirements, the licensee failed to consider the impacts on the U2 RCPs oil collection system, during the operability/functionality evaluation of the RCP air motor SW leak. The licensee initiated CRs 10420400 and 10422562 and replaced the 2C RCP motor and leaking air cooler.

Analysis: The licensee's failure to evaluate the potential impacts to the Unit 2 RCP 2C oil collection system during the operability/functionality evaluation of the SW leak associated with RCP motor air coolers was a performance deficiency. The finding was more than minor because it was associated with the protection against external factors (fires) and adversely affected the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to maintain adequate capacity in the RCP 2C OSPS oil collection tank presented a degradation of a fire confinement component which has a fire prevention function of not allowing an oil leak to reach hot surfaces. The significance of this finding was evaluated using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, because the performance deficiency affected fire protection defense-in-depth strategies involving fire confinement. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) because the exposed fire area contains no potential damage targets that are unique from those in the exposing fire area. The inspectors determined the finding had a cross-cutting aspect of "Evaluation" in the problem identification and resolution area because the licensee did not fully evaluate the impacts of the RCP motor air cooler SW leak on the Unit 2 RCP oil collection systems. [P.2]

Enforcement: The inspectors did not identify a violation of regulatory requirements associated with this finding. FIN 05000364/2017004-01, Failure to evaluate impacts on the 2C RCP oil collection system.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities

From October 23 – October 27, 2017, the inspectors conducted an onsite review of the implementation of the licensee's inservice inspection (ISI) program for Unit 2. The ISI program is designed to monitor degradation of pressure retaining components in vital system boundaries. The scope of this program includes components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors either directly observed or reviewed the following non-destructive examination (NDE) activities. These activities were mandated by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code of Record: 2001 Edition with 2003 Addenda). The inspectors evaluated the NDE activities for compliance with the requirements in Section XI and Section V of the ASME Code. The inspectors also evaluated if any identified indications or defects were dispositioned in accordance with either the ASME Code or an NRC-approved alternative requirement. Additionally, the inspectors reviewed the qualifications of the NDE technicians performing the examinations to determine if they were in compliance with ASME Code requirements.

- Ultrasonic Examination (UT) of APR1-4302-12-RB and -13-RB, 12" OD, ASME Class 1, Safety Injection system pipe-to-elbow and elbow-to-pipe welds (observed)
- Liquid Penetrant Testing (PT) of Q2-P16-HCB-9, 6" OD, ASME Class 2, Service Water system valve-to-pipe weld (reviewed)
- PT of Q2-P16-HCB-9, 6" OD, ASME Class 2, Service Water system valve-to-pipe weld (repair weld) (reviewed)

The inspectors either directly observed or reviewed the following welding activities. The inspectors evaluated these activities for compliance with site procedures and the requirements in Section IX and Section XI of the ASME Code. Specifically, the inspectors reviewed the work orders, repair or replacement plans, weld data sheets, welding procedures, procedure qualification records, welder performance qualification records, and NDE reports.

- WO SNC 849902, Replacement of 6" Service Water valve Q2P16V072, ASME Class 2 (reviewed)

PWR Vessel Upper Head Penetration Inspection Activities

The inspectors verified that the licensee did not identify any indications that were accepted for continued service. Additionally, the inspectors verified that the licensee did not perform any welding repairs to the upper head penetrations since the last Unit 2 refueling outage.

Boric Acid Corrosion Control Inspection Activities

The inspectors reviewed the licensee's boric acid corrosion control program (BACCP) activities to determine if they were implemented in accordance with program requirements, applicable regulatory requirements, and industry guidance. Specifically, the inspectors performed the following activities:

- Reviewed applicable procedures and the results of the licensee's most recent containment walkdown inspection.
- Interviewed the BACCP owner.
- Conducted an independent walkdown of accessible areas of the Unit 2 reactor building containment pipe chase.
- Verified that degraded or nonconforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACCP and the CAP.
- Reviewed engineering evaluations of components with boric acid leakage which verified that minimum wall thickness of those components was maintained.

Steam Generator Tube Inspection Activities

The inspectors reviewed the Unit 2 steam generator maintenance program. The inspectors verified that no steam generator tube inspection activities were required this refueling outage. This inspection schedule was verified with the requirements of the ASME Code, the licensee's Technical Specifications, and applicable industry guidance.

Identification and Resolution of Problems

The inspectors reviewed a sample of ISI-related issues entered into the corrective action program. The inspectors evaluated if 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.

b. Findings

No findings were identified.

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

a. Inspection Scope

Resident Inspector Quarterly Review of Licensed Operator Regualification:

The inspectors observed simulator scenarios conducted for training of an operating crew for regualification on November 21, 2017 and December 13, 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 for the following evolutions:

- Unit 2 power ascension to 100% during a Southern Company System Alert on October 10, 2017
- Unit 2 transition to Mode 1 and subsequent power ascension following a refueling outage from November 13 to November 16, 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 oversight

Annual Review of Licensee Requalification Examination Results:

On June 29, 2017, the licensee completed the annual requalification operating examinations 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." These results were compared to the thresholds established in Section 3.02, "Requalification Examination Results," of IP 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors assessed the licensee's treatment of the 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 any performance deficiencies and extent of condition.

- Quality Control - Unit 2, repair of load sequencer Q2R43E0001B - replacement of electrical DG1 diode with new commercially dedicated item
- Unit 2 train "A" service water strainer degraded backwash piping reviewed under structural monitoring program for the maintenance rule

b. Findings

A licensee-identified violation was identified. See section 4OA7 for details.

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

a. Inspection Scope

The inspectors reviewed the 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 CAP. Additionally, for maintenance resulting from unforeseen situations, the inspectors assessed the effectiveness of the licensee's planning and control of emergent work activities.

- Unit 2, October 18, 2017 – U2 shutdown safety assessment with reduced inventory in the reactor vessel
- Unit 1, October 22, 2017 – Insulator replacement in low voltage switchyard
- Unit 2, November 6, 2017 – 1C diesel generator outage and power range nuclear instruments trip setpoint adjustments

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

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.

- CR10415220, component cooling water (CCW) heat exchangers tube leakage
- Work Order (WO) SNC841458, Unit 1 turbine driven auxiliary feedwater pump and turbine oil samples
- CR10424737, Loss of Unit 2 B-Train Service Water during performance of FNP-2-STP-40.0B
- CR10429121, Q2N12HV3235A, Steam leak past valve pressure seal
- CR10441286, 1A reactor coolant pump degraded #2 seal

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

For the following plant modifications listed below, 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.

Plant Modification:

- Limited design change package (LDCP) SNC728696, Unit 2 service water to reactor coolant pump motor operated valve Q2P16MOV3131 replacement

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

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 SNC 636164, as left test results following set pressure adjustment of Q2N11V012B
- WO SNC904009, repair of load sequencer Q2R43E0001B
- WO SNC391170, diagnostic test of Q2B31PCV445A
- WO SNC376715, packing leak on Unit 2 TDAFW governor valve

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.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

For the Unit 1 refueling outage from October 15, 2017, through November 15, 2017, the inspectors evaluated the following outage activities:

- outage planning
- fatigue management
- 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.

b. Findings

Introduction: A Green NRC-identified NCV of 10 CFR 50.48(c) and National Fire Protection Association Standard 805 (NFPA 805), Section 3.3.12, was identified for the licensee's failure to maintain the Unit 2 Reactor Coolant Pump (RCP) 2B oil collection system in an operable condition to perform its design function. Specifically, the licensee failed to ensure that the RCP 2B Oil Spillage Protection System (OSPS) oil lift system enclosure collected all oil leakage from all potential leakage sites, including the oil lift system. The licensee's failure to maintain the Unit 2 RCP 2B oil collection system in an operable condition to perform its design function was a performance deficiency.

Description: On November 8, 2017, while the plant was in Mode 5, the inspectors performed a Unit 2 containment building closeout inspection. The inspectors observed RCP oil leaking out of the bottom of the oil lift system support plate through mounting bolt holes for the 2B RCP. Oil was dripping off the threaded fasteners penetrating the lift system horizontal mounting plate onto the motor air cooling coil, then from the coil onto an electrical box. The RCP 2B lift system had apparently been leaking oil while the associated lift pump was in operation. The lift oil system operates at a pressure in excess of 550 psig. The lift pump is not required to operate once the RCP has started, but the lift pump is restarted when the RCP is stopped. The control room log noted the oil lift pump was operated for twelve minutes on November 3, and again on November 4, 2017, for ten minutes while starting RCP 2B at 0405. The inspectors asked the licensee to determine why the oil was leaking out of the oil lift system enclosure. The licensee initiated CR 10428611, and determined an oil leak was not active. Another CR was initiated (10446206) to inspect and, if needed, repair this area at the next available opportunity.

Analysis: The licensee's failure to maintain the Unit 2 RCP 2B oil collection system in an operable condition to perform its design function was a performance deficiency. The finding was more than minor because if left uncorrected, the performance deficiency would have the potential to become a more significant safety concern. Specifically, failing to ensure that the RCP 2B Oil Spillage Protection System (OSPS) oil lift system enclosure collected all oil leakage from all potential leakage sites, including the oil lift system, presented a degradation of a fire confinement component which has a fire prevention function of not allowing an oil leak to reach hot surfaces. The significance of this finding was evaluated using IMC 0609, Appendix F, "Fire Protection Significance

Determination Process,” dated September 20, 2013, because the performance deficiency affected fire protection defense-in-depth strategies involving fire confinement. Using IMC 0609, Appendix F, Attachment 1, “Fire Protection Significance Determination Process Worksheet,” the inspectors determined that the finding was of very low safety significance (Green) because the exposed fire area contained no potential damage targets that are unique from those in the exposing fire area. The inspectors determined the finding had a cross-cutting aspect of “Design Margins” in the human performance area because the licensee did not maintain fire protection defense-in-depth by ensuring the Unit 2 RCP 2B oil collection system was in an operable condition to perform its design function. (H.6)

Enforcement: Farley Nuclear Plant, Unit 2, Operating License Condition 2.C.(6), required, in part, that the licensee shall implement and maintain in effect all provisions of the approved fire protection program (FPP) that comply with 10 CFR 50.48(c), as specified in the license amendment requests dated September 25, 2012; April 25, 2016; and supplements dated December 20, 2012; September 16, 2013; October 30, 2013; November 12, 2013; April 23, 2014; May 23, 2014; July 3, 2014; August 11, 2014; August 29, 2014; October 13, 2014; January 16, 2015; and as approved in the safety evaluation reports (SER) dated March 10, 2015 and October 17, 2016. The 2001 Edition of NFPA-805, Section 3.3.12, Reactor Coolant Pumps, required that the oil collection system shall be designed and installed such that leakage from the oil system is safely contained for off normal conditions such as accident conditions or earthquakes. Leakage points on a reactor coolant pump motor to be protected shall include, but not be limited to the lift pump and piping, overflow lines, oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and the oil reservoirs, where such features exist on the reactor coolant pumps. The leakage shall be collected and drained to a vented closed container that can hold the inventory of the reactor coolant pump lubricating oil system. Contrary to the above, the licensee failed to comply with the NFPA 805 code requirements for the Unit 2 RCP oil collection system. Code requirements for oil collection systems for reactor coolant pumps specify the leakage shall be collected and drained to a vented closed container that can hold the inventory of the reactor coolant pump lubricating oil system. The OSPS cannot be relied upon to meet these requirements if it is not maintained in an operable condition to perform its design function. Because the licensee included this deficiency in their corrective action program as CR 10428611 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 05000364/2017004-02, Failure to maintain an operable Oil Collection System on RCP 2B.

1R22 Surveillance Testing (71111.22)

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-2-STP-608.0, Main Steam Safety Valve Operational Test, Ver. 41 for valve Q2N11V011A
- FNP-2-STP-101, Low Power Reactor Physics Testing, Ver. 29
- FNP-2-STP-22.27, 2B Auxiliary Feedwater Pump Cold Shutdown Inservice Test & Preservice Test, Ver. 27.0

In-Service Tests (IST)

- FNP-1-STP-23.8, Component Cooling Water Valve Inservice Test, Ver. 51.0

Containment Isolation Valve

- FNP-2-STP-627.0, Local Leak Rate Testing of Containment Penetrations, Ver. 60

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the emergency preparedness training drill conducted on December 14, 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.

2. RADIATION SAFETY (RS)

2RS1 Radiological Hazard Assessment and Exposure Controls (Seven Inspection Samples Completed)

a. Inspection Scope

Hazard Assessment and Instructions to Workers. During facility tours, the inspectors directly observed radiological postings and container labeling for areas established within the radiologically controlled area (RCA) of the Unit 2 (U2) containment building, Unit 1 (U1) and U2 auxiliary building and radioactive waste 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 airborne radioactivity, gamma surveys with a range of dose rate gradients, surveys for alpha-emitters and other hard-to-detect radionuclides, 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. 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.

Control of Radioactive Material. The inspectors observed surveys of material and personnel being released from the RCA using small article monitor, personnel contamination monitor, and portal monitor instruments. The inspectors discussed equipment sensitivity, alarm setpoints, and release program guidance with licensee staff. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Hazard Control. The inspectors evaluated access controls and barrier effectiveness for selected High Radiation Area (HRA), Locked High Radiation Area (LHRA), and Very High Radiation Area (VHRA) locations and discussed changes to procedural guidance for LHRA and VHRA controls with Radiation Protection (RP) supervisors. The inspectors reviewed implementation of controls for the storage of irradiated material within the spent fuel pool. Established radiological controls, including airborne controls and electronic dosimeter (ED) alarm setpoints, were evaluated for selected U2 Refueling Outage 25 (U2R25) job tasks. In addition, the inspectors reviewed licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations. The inspectors also reviewed the use of personnel dosimetry including extremity dosimetry and multibadging in high dose rate gradients.

Radiation Worker Performance and RP Technician Proficiency. Occupational workers' adherence to selected RWPs and RP technician proficiency in providing job coverage in radiologically significant areas were evaluated through direct observations and interviews with licensee staff. Jobs observed included maintenance work in the reactor cavity including transfer tube removal, seal filter pump room valve cutouts and RVLIS detector removal. The inspectors also evaluated worker responses to dose and dose rate alarms during selected work activities.

Problem Identification and Resolution. The inspectors reviewed and assessed condition reports (CR) 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.

Inspection Criteria. RP activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Section 12, Technical Specifications (TS) Sections 5.4 and 5.7, 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 and records reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the Unit 1 and Unit 2 PIs listed below. The inspectors reviewed plant records compiled between November 2016, and October 2017, 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: Mitigating Systems

- high pressure injection system (Units 1 and 2)
- emergency AC power system (Units 1 and 2)
- heat removal system (Units 1 and 2)

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

The inspectors screened items entered into the licensee's CAP 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.

b. Findings and Observations

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of issues entered in the licensee's CAP and reviewed associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on missed surveillance testing, but also considered the results of inspector daily condition report screenings, licensee trending efforts, and licensee human performance results. The review nominally considered the six-month period beginning in July 2017, through December 2017, although some examples extended beyond those dates when the scope of the trend warranted. The inspectors compared their results with the licensee's analysis of trends. 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 nonconforming or degraded conditions.

The inspectors performed a search of the CAP database and found 22 examples of condition reports initiated since the beginning of 2017 associated with missed surveillance testing. The licensee identified a cognitive trend in missed surveillance testing and initiated a trend CR (10401365) on August 23, 2017, citing four CRs as examples and noted that the trend had continued over the previous 41 days. Since that time there were at least an additional seven CRs initiated for issues associated with missed surveillance testing. The licensee nuclear oversight organization also initiated CR 10393974 on August 2, 2017, addressing inadequate engagement in the surveillance program. The licensee initiated Corrective Action Report (CAR) 270723, completing the disposition on December 15, 2017, in an effort to resolve the negative trend, but it is not apparent the licensee's corrective actions were effective since the negative trend continues. The inspectors continue to monitor this issue.

b. Findings and Observations

No findings were identified.

.3 Annual Followup of Selected Issues

a. Inspection Scope

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

- CR10427370, Unit 1 TDAFW inoperability

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

Introduction: A Green self-revealing non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a, "Procedures," was identified when the Unit 1 TDAFW uninterruptible power supplies (UPS) swapped to a bypass power source during maintenance on November 5, 2017. As a result, the TDAFW pump was rendered inoperable. Failure to follow licensee procedure FNP-1-EMP-1352.01, "TDAFW UPS Battery Weekly Battery Inspection," Version 19, as written was a performance deficiency.

Description: Maintenance performed a preventive maintenance task on the Unit 1 TDAFW UPS in accordance with work order SNC860880 and licensee procedure FNP-1-EMP-1352.01, "TDAFW UPS Battery Weekly Battery Inspection," Ver. 19 on November 5, 2017. While making an adjustment to the primary charger float potentiometer, a step was performed out of sequence. This caused the charger failure light to come on locally at the UPS and annunciator JH4 "TDAFWP UPS FAULT" in the main control room. This also caused the UPS to swap from the primary UPS charger to the secondary UPS charger. The missed step was then performed which opened the battery input breaker to the secondary UPS and caused both UPS to swap to a bypass source. According to the licensee, this action rendered the TDAFW pump inoperable. The TDAFW pump UPS consists of two separate full capacity UPS connected in a primary/secondary arrangement. Both UPS are normally in operation with the primary UPS supplying all of the loads. The operability of the TDAFW pump UPS was restored after approximately 3 hours. The licensee entered this issue into their CAP as CR 10427370.

Analysis: The failure to follow licensee procedure FNP-1-EMP-1352, Ver. 19.0 as written during maintenance on the Unit 1 TDAFW pump UPS on November 5, 2017 was a performance deficiency. Specifically, steps in section 4.7.a were performed out of sequence which resulted in an unavailable UPS and an inoperable TDAFW pump. The finding was more than minor because it was associated with the equipment performance

attribute of the mitigating system cornerstone and adversely affected that cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences since the TDAFW pump was rendered inoperable. 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 all of the mitigating systems screening questions were answered NO. The inspectors determined the finding had a cross-cutting aspect of Avoid Complacency in the Human Performance area because the individuals involved in this maintenance did not recognize or plan for the possibility of mistakes and appropriate error reduction tools were not implemented. [H.12]

Enforcement: Technical Specification 5.4.1.a, "Procedures," required, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A. Section 9.a of RG 1.33, Appendix A, stated in part that maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures. Contrary to the above, on Nov. 5, 2017, licensee procedure FNP-1-EMP-1352.01, "TDAFW UPS Battery Weekly Battery Inspection," Version 19 was performed out of sequence during maintenance the Unit 1 TDAFW UPS which rendered the TDAFW pump inoperable. The licensee entered this issue into their corrective action program (CAP) as condition report (CR) 10427370. The operability of the TDAFW pump UPS was restored after approximately 3 hours. Because this finding is of very low safety significance and has been entered into the CAP, this violation was treated as an NCV, consistent with the Enforcement Policy. NCV 05000348/2017004-03 "Failure to Follow Procedure Resulted in Inoperable TDAFW pump."

4OA3 Follow-up of Events (71153)

1. (Closed) Licensee Event Report (LER) 05000348/2016-007-02: Plant Shutdown Required by Technical Specifications due to Inoperable Steam Flow Transmitters

a. Inspection Scope

During the licensee's engineering review of cycle full power scaling values for steam flow normalization at the beginning of a new fuel cycle for Unit 1 while in Mode 1 at 99 percent reactor power, three steam flow channel values were found to be non-conservative and outside of +/- 2.5% delta pressure scan. This non-conservatism would allow steam flow to exceed the TS trip set-point before a steam line isolation would occur. Unit 1 initiated a plant shutdown on November 17, 2016, at 6:59 p.m. in accordance with Limiting Condition for Operation (LCO) 3.0.3 for having no operable steam flow channels for the C Steam Generator (SG). The two steam flow channels did not meet acceptance criteria for TS 3.3.2. On November 18, 2016, at 12:41 a.m., the Unit 1 plant shutdown was completed and the plant entered Mode 3, as required by LCO 3.0.3. The steam flow transmitters were restored to operable status by calculating new scaling data and rescaling the channels. LER 05000348/2016-007-02 is closed.

b. Findings

A severity level IV violation was identified in inspection report 2017-009. See section 4OA2.1.c.1 of that report for details.

4OA5 Other Activities

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

a. Inspection Scope

The inspectors performed a walkdown of the onsite ISFSI on December 22, 2017. The inspectors also reviewed surveillance records to verify that daily surveillance requirements were performed as required by technical specifications.

b. Findings

No findings were identified.

.2 (Closed) Violation (VIO) 05000348/2016008-01, 05000364/2016008-01, Inaccurate Training Records

a. Inspection Scope

The inspectors reviewed the licensee's response to VIO 05000348/2016008-01, 05000364/2016008-01, EA-16-110 and determined that the reason, corrective actions taken and planned to address recurrence, and the date when full compliance was achieved for this violation is adequately addressed and captured on the docket. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On January 23, 2018, the resident inspectors presented the inspection results to Dennis Madison and other members of the licensee's staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

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 50.55 (a)(b)(5)(i) required in part that licensees must apply the most recent version of ASME BPV Code cases listed in Regulatory Guide 1.147, Revision 17. Contrary to the above, the licensee failed to perform augmented re-examinations on

a 30-day periodicity as required by ASME Code Case N-513-3. A through-wall pinhole leak on the Unit 2 Train "A" Service Water strainer backwash piping was documented in condition report (CR) 10234480 on June 10, 2016. The service water system provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. The backwash piping is safety-related ASME Section III, Class 3 piping. An Immediate Determination of Operability Evaluation (IDO) was performed declaring the strainer operable but degraded non-conforming (OBDN). The licensee followed the guidance of ASME Code Case N-513-3, Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping, Section XI, Division 1. The code case requires that an additional five similar susceptible locations be identified and inspected to ensure that another flaw does not exist. In addition to the expanded scope, the code case requires that frequent periodic inspections of no more than 30-day intervals shall be used to determine if the flaws are growing to an unacceptable size. An additional CR (10236417) was initiated on June 15, 2016, to request work orders for inspection of these five locations. A total of three examinations were performed on a 30-day periodicity, the last being completed on August 22, 2016. CR 10416364 was initiated on October 5, 2017, documenting that no re-examinations on a 30-day periodicity were performed on the original leak location and the five additional locations since August 22, 2016. The ultrasonic examination was completed on October 5, 2017, and the degraded backwash piping was removed and replaced with new piping by WO SNC795917 on October 28, 2017. This finding was determined to be of very low safety significance (Green) because it was not a design or qualification deficiency, it did not represent a loss of system safety function of a single train for greater than its TS allowed outage time, and it did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events. This finding was entered into the licensee's CAP as CR 10416364.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:

K. Baity, Site Design Manager
S. Briggs, Plant Manager
J. Carroll, Engineering Plant Support Manager
D. Erb, Assistant Maintenance Director
B. Freeman, Engineering Supervisor
S. Harris, Shift Operations Manager
J. Horn, Operations Director
N. Koteel, Operations
D. Madison, Site Vice President
R. McAdams, Engineering Director
J. Short, Maintenance Director
D. Simmons, EP Supervisor
G. Surber, Licensing Supervisor
C. Welch, Assistant Engineering Director
R. Wells, Site Projects Manager
E. Williford, Regulatory Affairs Manager
D. Brown, Site NDE Level III
S. Champion, Site ISI Coordinator
K. King, BACCP Owner
W. Truss, Steam Generator Program Manager

LIST OF REPORT ITEMS

Opened and Closed

FIN 05000364/2017004-01	Failure to Evaluate Impacts on the 2C RCP Oil Collection System (Section 1R05)
NCV 05000364/2017004-02	Failure to maintain an operable Oil Collection System on RCP 2B (Section 1R20)
NCV 05000348/2017004-03	Failure to Follow Procedure Resulted in Inoperable TDAFW pump (Section 4OA2.3)

Closed

LER 05000348/2016-007-02	Plant Shutdown Required by Technical Specifications due to Inoperable Steam Flow Transmitters (Section 4OA3.1)
VIO 05000348/2016008-01 VIO 05000364/2016008-01	Inaccurate Training Records (Section 4OA5.2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures:

FNP-0-AOP-21.0, Vers. 46 and 46.1

NMP-OS-017, Ver. 1.1

NMP-EP-141-001, Ver. 1

Section 1R04: Equipment Alignment

Drawings:

D205022, P&ID – Penetration Room Filtration System, Ver. 27.0

Procedures:

FNP-0-SOP-38.0E, 2B Diesel Generator, Ver. 15

FNP-0-SOP-38.0-2B, 2B Diesel Generator and Auxiliaries, Ver. 14.4

FNP-2-SOP-60.0, Penetration Room Filtration System, Ver. 34.0

FNP-2-SOP-60.0A, Penetration Room Filtration System, Ver. 6.0

Condition Reports:

10430689

Section 1R05: Fire Protection Annual/Quarterly

Drawings:

D356847, Fire Barriers and Fire Boundaries – U2, Auxiliary Building and Containment, EL. 121', 127' & 129', Ver. 1.0

D356848, Fire Barriers and Fire Boundaries – U2, Auxiliary Building and Containment, EL. 130' & 139', Ver. 1.0

D356849, Fire Barriers and Fire Boundaries – U2, Auxiliary Building and Containment, EL. 155' & 165', Ver. 1.0

D356850, Fire Barriers and Fire Boundaries – U2, Auxiliary Building and Containment, EL. 175', Ver. 1.0

D356851, Fire Barriers and Fire Boundaries – U2, Auxiliary Building and Containment, EL. 77' & 83', Ver. 1.0

D513642, Fire Barriers and Fire Boundaries – U1, Auxiliary Building and Containment, EL. 155' & 165', Ver. 1.0

Documents:

U258242, Instruction Manual – Controlled Leakage Seal Reactor Coolant Pump, Ver. 13.0

Work Orders (WO):

A-181805, NFPA 805 Fire Protection Program Design Basis Document, Ver. 4.0

WO SNC421217, FNP-2-FSP-307.0, Smoke Detectors – Biennial Operability and Adjustment, Ver. 21.0, for Zone 2A-22A Non-Train Smoke Detectors

WO SNC390190, FNP-2-FSP-307.0, Smoke Detectors – Biennial Operability and Adjustment, Ver. 21.0, for Zone 2A-22B Non-Train Smoke Detectors

WO SNC390191, FNP-2-FSP-307.0, Smoke Detectors – Biennial Operability and Adjustment, Ver. 22.1, for Zone 2A-22B Non-Train Smoke Detectors
 WO SNC547590, FNP-2-FSP-307.0, Smoke Detectors – Biennial Operability and Adjustment, Ver. 22.1, for Zone 2A-22A Non-Train Smoke Detectors
 WO SNC416127, FNP-2-FSP-207.1, Hose Station Flow and Valve Functionality Test Containment, Ver. 4.1
 WO SNC537383, FNP-0-FSP-307.0, Smoke Detector Cleaning and Adjustment, Ver. 17.0, for Zone 1A-54 Non-Train Smoke Detectors
 WO SNC741171, FNP-0-FSP-307.0, Smoke Detector Cleaning and Adjustment, Ver. 18.0, for Zone 1A-54 Non-Train Smoke Detectors
 WO SNC833068, FNP-1-FSP-9, Portable Fire Extinguishers – Monthly, Ver. 44.0
 WO SNC837676, FNP-1-FSP-9, Portable Fire Extinguishers – Monthly, Ver. 44.0
 WO SNC842933, FNP-1-FSP-9, Portable Fire Extinguishers – Monthly, Ver. 44.0
 WO SNC848223, FNP-1-FSP-9, Portable Fire Extinguishers – Monthly, Ver. 44.0
 WO SNC854072, FNP-1-FSP-9, Portable Fire Extinguishers – Monthly, Ver. 44.0
 NMP-OS-003-F01, Operational Decision-Making Issue Worksheet, TE 994939, Service Water In-leakage to Unit 2 Containment Sump, Ver. 1.0

Procedures:

FPN-1-FPP-1.0, Unit 1 Auxiliary Building Pre-Fire Plan, Ver. 1.0
 FNP-2-FPP-1.0, Unit 2 Auxiliary Building Pre-Fire Plan, Ver. 1.0
 FNP-2-FPP-3.0, Unit 2 Containment Pre-Fire Plan, Ver. 1.0

Condition Reports:

CR 10411954, 10420400, 10422562

Section 1R08: Inservice Inspection Activities

Procedures:

NMP-ES-024-501, PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds (Appendix VIII), Ver. 6.0

Work Orders/Work Requests:

SNC849902, Work Order: Replace Valve Q2P16V072 (MOV3134) in accordance with LDGP SNC728696, Rev. 0

Condition Reports:

CAR267128, BACCP Evaluation: N2P15PCV2207, dated 10/14/2016
 CAR267132, BACCP Evaluation: Q1B21FT0425, dated 10/16/2016
 CAR267247, BACCP Evaluation: Q1B21FT0434, dated 10/23/2016
 CAR267330, BACCP Evaluation: Q1B13V003, dated 10/30/2016
 CR10250972, Non-Compliant Penetrant Exam, dated 07/20/2016
 CR10263183, 2R24 In-service Inspection Report, dated 08/19/2016
 CR10304481, FSAR Tendon Surveillance Frequency, dated 12/02/2016
 CR10420122, ISI CISA Deficiency, dated 10/17/2017
 CR10421579, Water Wash Identified inside Casing of Unit 2 TDAFW Pump, dated 10/20/2017
 CR10421693, Containment Moisture Barrier Deficiencies, dated 10/20/2017
 CR10423946, Welding/Supply Knowledge Deficiency: Cb vs Nb, dated 10/26/2017

NDE Examiner Qualifications:

Sonic Systems International, Inc. Certificate of Qualification: UT LIII-PDI (Blecha), dated 7/6/2017

Sonic Systems International, Inc. Vision Acuity Record (Blecha), dated 11/30/2016

Miscellaneous Documents:

1B21-2015-001, Corrosion Assessment Evaluation: Q1B13V003, dated 09/03/2015

1B21-2016-001, Corrosion Assessment Evaluation: Q1B21FT0434, dated 10/23/2016

507, Procedure Qualification Record, dated 1-26-84

508, Procedure Qualification Record, dated 1-26-84

509, Procedure Qualification Record, dated 2-2-84

510, Procedure Qualification Record, dated 2-3-84

51-9198832-000, AREVA, Inc.: Sequoyah Unit 2 Condition Monitoring at 2R19 and Final Operational Assessment for Cycles 20, 21 and 22, Rev. 000

522, Procedure Qualification Record, dated 2-24-84

545, Procedure Qualification Record, dated 4-27-84

547, Procedure Qualification Record, dated 1-25-84

564, Procedure Qualification Record, dated 8-31-84

568, Procedure Qualification Record, dated 8-31-84

8.24N, Weld Procedure Specification, Rev. 1

Applied Test Systems Certificate of Compliance, Ultrasonic Reference Blocks (Ser. No. A20251), dated Sept. 24, 2003

Arcos Certified Material Test Report: Order No. 905108, Lot/Heat: CT9119 – 738772, dated 1/26/2010

Arcos Certified Material Test Report: Order No. 906714, Lot/Heat: DF0140 – e140778, dated 1/30/2015

B06, Procedure Qualification Record, dated 10-5-76

Excelon Generation Certificate of Calibration: IR Thermometer (S/N 27280420), dated 08/08/2016

Farley 2R23 Steam Generator Condition Monitoring and Operational Assessment

HNP-34, Welder Qualification Test Record (Jones, WPS T110A-1), dated 9/26/2017

HNP-35, Welder Qualification Test Record (Jones, WPS S11BA-3), dated 9/27/2017

HNP-36, Welder Qualification Test Record (Jones, WPS S18BA-4), dated 9/28/2017

Krautkramer Ultrasonic Systems Transducer Certification (S/N MM00113), dated 7/28/2003

Liquid Penetrant Examination Record: Q2-P16-HCB-9, Post-Repair Examination, dated 10-21-17 22:09

Liquid Penetrant Examination Record: Q2-P16-HCB-9, Pre-Repair Examination, dated 10-21-17 21:02

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

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 FNP-2-SOP-1.6, Ver. 50.1
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NMP-AD-010, 10 CFR 50.59 Screenings and Evaluations, Ver. 14.0

NMP-ES-035-006, Fire Protection Program Impact Screen and Detailed Reviews, Ver. 9.0

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FPN-2-STP-627.0, Local Leak Rate Testing of Containment Penetrations, Ver. 60.0

NMP-MA-020-002, Actuated Valve Packing and Adjustment Procedure, Ver. 2.0

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FNPP-0-STP-610.0, Equipment Hatch Emergency Closure Response Verification, Ver. 12.1

FNPP-2-STP-35.0, Reactor Coolant System Pressure and Temperature/Pressurizer Temperature Limits Verifications, Ver. 22

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FNPP-2-STP-29.1, Shutdown Margin Calculation, Ver. 28

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FNPP-0-MP-38.0, Opening and Closing of Containment Equipment Door (Q1T53 and Q2T53), Ver. 14.0

FNPP-2-AOP-12, Residual Heat Removal Malfunction, Ver. 26

FNPP-2-STP-35.1, Unit Startup Technical Specification Verification, Vers. 44 and 45

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FNPP-2-STP-18.4, Containment Mid-loop and/or Refueling Integrity Verification and Containment Closure, Ver. 45

FNPP-2-SOP-7.0, Residual Heat Removal System, Ver. 97

FNPP-2-STP-61.0, Reactor Coolant Pump and RHR Loop Operability Verification, Ver. 10

FNPP-0-FHP-0.0, Refueling Organization, Ver. 15

FNPP-1-FHP-1.0, Refueling Operations, Ver. 13

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Documents:

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