



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

April 29, 2011

Mr. L. Mike Stinson  
Interim Vice President - Farley  
Southern Nuclear Operating Company, Inc.  
7388 North State Highway 95  
Columbia, AL 36319

**SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000348/2011002 AND 05000364/2011002 & ASSESSMENT  
LETTER**

Dear Mr. Stinson:

On March 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Joseph M. Farley Nuclear Plant, Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on April 14, 2011, with members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The NRC reviewed selected procedures and records, observed activities, and interviewed personnel.

The report documents one self-revealing finding. This finding was determined to involve a violation of NRC requirements. Additionally, two licensee-identified violations (LIV), which were determined to be of very low safety significance, are listed in this report. However, because of the very low safety significance and because they have been entered into your corrective action program (CAP), the NRC is treating these violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Joseph M. Farley Nuclear Plant. In addition, if you disagree with the cross-cutting aspect assigned to any finding 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 Senior Resident Inspector at the Joseph M. Farley Nuclear Plant. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

On September 26, 2008, the NRC completed a supplemental inspection at Farley Nuclear Plant (FNP) Unit 1. The purpose of the inspection was to examine the causes for and actions taken related to the Mitigating Systems Performance Index, Emergency AC Power System Performance Indicator (PI) crossing the threshold from Green (within expected range) to White (low to moderate safety significance) for Unit 1 in the first quarter of 2008, due to two independent run failures of the 1B Emergency Diesel Generator (EDG). Because the two independent run failures rolled off of the 36 month rolling average in the first quarter 2011, the NRC determined the performance at Farley Nuclear Plant Unit 1 to be in the Licensee Response Column of the Reactor Oversight Process Action Matrix.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if any, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000348/2011002 and 05000364/2011002  
w/Attachment: Supplemental Information

cc w/encl.: (See page 3)

On September 26, 2008, the NRC completed a supplemental inspection at Farley Nuclear Plant (FNP) Unit 1. The purpose of the inspection was to examine the causes for and actions taken related to the Mitigating Systems Performance Index, Emergency AC Power System Performance Indicator (PI) crossing the threshold from Green (within expected range) to White (low to moderate safety significance) for Unit 1 in the first quarter of 2008, due to two independent run failures of the 1B Emergency Diesel Generator (EDG). Because the two independent run failures rolled off of the 36 month rolling average in the first quarter 2011, the NRC determined the performance at Farley Nuclear Plant Unit 1 to be in the Licensee Response Column of the Reactor Oversight Process Action Matrix.

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*/RA/*

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Letter to L. Mike Stinson from Scott M. Shaeffer dated April 29, 2011

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000348/2011002 AND 05000364/2011002

Distribution w/encl:

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 05000348, 05000364

License Nos.: NPF-2, NPF-8

Report No.: 05000348/2011002 and 05000364/2011002

Licensee: Southern Nuclear Operating Company, Inc.

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

Location: Columbia, AL

Dates: January 1, 2011 through March 31, 2011

Inspectors: E. Crowe, Senior Resident Inspector  
J. Sowa, Resident Inspector  
A. Vargas, Reactor Inspector (Section 1R07)

Approved by: Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000348/2011002 and 05000364/2011002; January 1, 2011, through March 31, 2011; Joseph M. Farley Nuclear Plant, Units 1 and 2; Flood Protection Measures.

The report covered a three-month period of inspection by the resident inspectors and one reactor inspector. One self-revealing NCV with very low safety significance (GREEN) was identified. The significance of most findings is indicated by their color (great than Green, or Green, White, Yellow, Red); the significance was determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP); the cross-cutting aspect was determined using IMC 0310, 'Components Within The Cross-Cutting Areas;' and that findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review.

### A. NRC-Identified and Self-Revealing Findings

#### Cornerstone: Mitigating Systems (MS)

- Green. A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for the licensee's failure to implement measures to assure safety-related cables remained in an environment for which they were certified. Safety-related cables purchased and installed in underground electrical pull boxes at Farley Nuclear Plant (FNP) have been subjected to submergence, a condition for which they are not designed. The licensee entered this issue into its CAP as CR 2010100512, which included the action to increase the frequency of measuring water level in pull boxes and removing excess water to ensure cables are not submerged. Despite the increased frequency of the preventative maintenance, electrical pull box B1M53 was observed by NRC inspectors to contain safety-related cables completely submerged in water on four separate occasions in the first quarter of 2011. Upon discovery of this condition, the licensee wrote CR 2011103553.

Failure to maintain safety-related electrical cables in a physical environment for which the cables are designed to operate, is a performance deficiency. This performance deficiency is more than minor because it is associated with the design control attribute of the Mitigating Systems (MS) cornerstone, and adversely affected the cornerstone objective to ensure the reliability of systems responding to initiating events to prevent undesirable consequences. The design control attribute of the MS cornerstone was determined to be adversely affected; because 1) testing of these cables has not been performed, 2) the cables have not been maintained within the parameters for which they are designed, 3) the corrective action to increase frequency of preventative maintenance was ineffective in preventing submergence of safety-related cables, and 4) there have been documented failures of cables throughout the nuclear industry due to degradation caused by submergence in water. The significance of this finding was screened using the Phase 1 of the SDP in accordance with NRC Inspection Manual Chapter 0609 Attachment 4. The finding screened as Green, because the finding is a design or qualification deficiency confirmed not to result in loss of operability or functionality. The finding was assigned a cross-cutting aspect in the corrective action

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program component of the Problem Identification and Resolution area because of the licensee's evaluation of the problem failed to identify a resolution that addressed the cause and extent of conditions (P.1(c)). Specifically, the inspectors determined the increased pull box preventative maintenance was ineffective in preventing safety-related cable exposure to unqualified conditions, and the corrective actions were inadequate in ensuring the problem was resolved. (Section 1R06).

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

## REPORT DETAILS

### Summary of Plant Status

Unit 1 started the report period at 100 percent Rated Thermal Power (RTP). The unit remained at or near 100 percent RTP for the remainder of the inspection period.

Unit 2 started the report period at 100 percent RTP. The licensee performed a planned shutdown of the unit to effect repairs to the pressurizer auxiliary spray check valve on February 12. The unit returned to 100 percent RTP on February 19. The unit remained at or near 100 percent RTP for the remainder of the inspection period.

1. REACTOR SAFETY  
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

Seasonal Readiness Review. The inspectors evaluated implementation of the licensee's Cold Weather Contingency procedure, FNP-0-SOP-0.12, and conditions for entry into the procedure. The inspectors examined heat tracing lines on the condensate storage tanks and refueling water storage (RWS) tanks to verify these protections for cold weather conditions were functional. The emergency diesel generator (EDG) building and service water intake structure (SWIS) were also evaluated to ensure provisions were implemented to compensate for any known deficiencies. Documents reviewed are listed in the Attachment.

Impending Adverse Conditions. The inspectors evaluated implementation of adverse weather preparation procedures and compensatory measures for the following adverse weather condition. The inspectors walked-down portions of the main steam (MS) systems, condensate storage systems, RWS systems, and EDGs. These systems were selected because their safety-related functions could be affected by freezing weather. The inspectors verified the applicable portions of procedure FNP-0-AOP-21.0, Severe Weather, were performed. Documents reviewed are listed in the Attachment.

- Projected freezing temperatures for January 10-14, 2011

##### b. Findings

No findings were identified.

#### 1R04 Equipment Alignment

##### a. Inspection Scope

Partial Walk-Down. The inspectors performed partial walk-downs of the following four systems to verify the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors attempted to identify discrepancies

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impacting the function of the system, and therefore potentially increasing risk. The walk-downs were performed using the criteria in licensee procedures NMP-OS-007, Conduct of Operations, and FNP-0-SOP-0, General Instructions to Operations Personnel. The walk-downs included reviewing the Updated Final Safety Analysis Report (UFSAR), plant procedures and drawings, checks of control room and plant valves, switches, components, electrical power, support equipment, and instrumentation. Documents reviewed are listed in the Attachment.

- Unit 1 – train A residual heat removal (RHR) and train A component cooling water (CCW) during equipment outage of train B RHR
- Unit 2 – train A containment spray (CS) System during train B CS system outage
- Unit 2 – service water (SW) system during reactor startup
- Unit 1/2 – train B electrical distribution system during 24 month overhaul outage of 1-2A EDG

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Fire Protection Area Tours

a. Inspection Scope

The inspectors conducted a tour of the five fire areas listed below to assess material condition and operation status of the fire protection equipment. The inspectors verified combustibles and ignition sources were controlled in accordance with the licensee's administrative procedures; fire detection and suppression equipment was available for use; passive fire barriers were maintained in good material condition, and compensatory measures for out-of-service, degraded or inoperable fire protection equipment were implemented in accordance with the requirements of licensee procedures FNP-0-AP-36, Fire Surveillance and Inspection; FNP-0-AP-38, Use of Open Flame; FNP-0-AP-39, Fire Patrols and Watches; and the associated fire zone data sheets. Documents reviewed are listed in the Attachment.

- Unit 1, 100' elevation piping penetration room, fire zone 1
- Unit 2, B train electrical penetration room, fire zone 34
- Unit 2, CCW heat exchangers and pumps room, fire zone 6
- Unit 2, 100' elevation piping penetration room, fire zone 1
- SWIS, fire zones 72 and 73

b. Findings

No findings were identified.

.2 Annual Fire Drill

a. Inspection Scope

The inspectors observed the licensee conduct a training fire drill on the 139' elevation of the auxiliary building in the 139' electrical penetration room. The licensee simulated an electrical short in the 1V motor control center in circuit breaker Q1R17BKRHVQ5. The start of the fire was simulated by a control room notification that smoke detector 1A-46 was in alarm. The inspectors observed licensee response in the fire equipment staging area, main control room and entry into the simulated fire area to verify the response was in accordance with station procedures. The inspectors verified licensee personnel utilized proper fire fighting techniques and equipment was properly restored to operating status following the fire drill. The inspectors reviewed station procedures FNP-0-AOP-29.0, Plant Fire, FNP-0-EIP-13.0, Fire Emergencies, and FNP-0-FVP-14.0, Auxiliary Building Smoke and CO<sub>2</sub>/Halon Removal (Portable Equipment) to verify these procedures were properly implemented.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

.1 Review of Areas Susceptible to Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk-important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analysis and design documents, including the UFSAR, and engineering calculations and abnormal operating procedures for licensee commitments. The inspectors walked down the area listed below to verify plant design features and plant procedures for flood mitigation were consistent with design requirements and internal flooding analysis assumptions. The inspectors reviewed flood protection barriers, which included plant floor drains, condition of room penetrations, condition of the sumps in the rooms and condition of water-tight doors. The inspectors also reviewed CRs to verify the licensee was identifying and resolving problems. Documents reviewed are listed in the Attachment.

- Unit 1 charging pumps A and B, rooms 173 and 174

b. Findings

No findings were identified.

## .2 Annual Review of Cables Located in Underground Bunkers/Manholes

### a. Inspection Scope

The inspectors conducted an inspection of the following three underground bunkers/manholes subject to flooding, containing cables whose failure could disable risk-significant equipment. The inspectors performed walk-downs of risk-significant equipment. The inspectors performed walk-downs of risk-significant areas to verify the cables were not submerged in water, cables and/or splices appeared intact and observed the condition of cable support structures. When applicable, the inspectors verified proper dewater device (sump pump) operation and verified level alarm circuits were set appropriately, ensuring the cables would not be submerged. Where dewatering devices were not installed, the inspector ensured drainage was provided and functioning properly.

- Unit 1/2 Electrical pull boxes/cable vaults B1M51
- Unit 1/2 Electrical pull boxes/cable vaults B1M52
- Unit 1/2 Electrical pull boxes/cable vaults B1M53

### b. Findings

Introduction: A self-revealing NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for the licensee's failure to implement measures to assure safety-related cables remained in an environment for which they were certified. Safety-related cables purchased and installed in underground electrical pull boxes at FNP are not designed to be submerged in water. Safety-related cables located within underground cable pull boxes have been routinely identified as being submerged in water. Those cables have not been inspected or tested for degradation.

Description: The NRC inspectors reviewed WOs S09276001 and S102782001, and observed inspections of pull boxes containing safety-related electrical cables. The inspectors noted multiple instances where pull box B1M53 was discovered with safety-related cables submerged in standing water. Additionally, the inspectors reviewed the licensee's purchase specifications, vendor documents, FSAR and cable specification documents and determined safety-related cables routed through electrical pull boxes had originally been purchased from the Okonite Company and were not qualified for submergence.

The inspectors interviewed station personnel, reviewed station databases (including the CAP) and determined the following: 1) the licensee had a two year preventative maintenance task to inspect "pull boxes" for water and remove the water when discovered; 2) CR 2010100512 was written for the original discovery and incorrectly concluded safety-related cables were allowed to be periodically wetted (submerged); and 3) CR 2010100512 increased the frequency of pull box inspections, such that during the first quarter of 2011, pull box B1M53 had a scheduled preventative maintenance on a two week recurring basis. Despite the increased frequency of preventative

maintenance, pull box B1M53 was observed by NRC inspectors to have safety-related cables fully submerged on four separate occasions (2/8/11, 2/25/11, 3/7/11, and 3/22/11).

Analysis: Failure to maintain safety-related electrical cables in a physical environment for which the cables are designed to operate is a performance deficiency. This performance deficiency is more than minor because it is associated with the Design Control attribute of the MS cornerstone, and adversely affected the cornerstone objective to ensure system reliability responding to initiating events preventing undesirable consequences. The Design Control attribute of the MS cornerstone was determined to be adversely affected because; 1) testing of these cables has not been performed, 2) the cables have not been maintained within the parameters they are designed for, 3), the corrective action to increase frequency of preventative maintenance was ineffective in preventing submergence of safety-related cables, and 4) there have been documented failures of cables throughout the nuclear industry due to degradation caused by submergence in water. The significance of this finding was screened using the Phase 1 of the SDP in accordance with NRC IMC 0609 Attachment 4. The finding screened as Green, because the finding is a design or qualification deficiency confirmed not to result in loss of operability or functionality. The finding was assigned a cross-cutting aspect in the corrective action program component of the Problem Identification and Resolution area because of the licensee's evaluation of the problem failed to identify a resolution that addressed the cause and extent of conditions (P.1(c)). Specifically, the inspectors determined the increased pull box preventative maintenance was ineffective in preventing safety-related cable exposure to unqualified conditions, and the corrective actions were inadequate in ensuring the problem was resolved.

Enforcement: 10 CFR 50, Appendix B, Criterion III, Design Control, requires in part, that measures shall be established to assure applicable regulatory requirements and the design basis for those structures, systems and components (SSCs), to which this appendix applies, are correctly translated into specifications, drawings, procedures, and instructions. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes essential to the safety-related functions of SSCs. Contrary to the above, the licensee failed to implement measures to assure safety-related cables remained in an environment for which they were certified. Specifically, safety-related cables subjected to submergence have the potential to increase the failure rate of the cables, and the long-term reliability of the cables to perform their intended safety functions is also affected. The condition was discovered on four separate occasions (2/8/11, 2/25/11, 3/7/11, and 3/22/11). During each instance, the licensee corrected the condition by pumping the water out of the pull boxes on the day of discovery. Upon learning of the performance deficiency, the licensee wrote CR 2011103041 to explore the adequacy of the pull box preventative maintenance. Because this violation was of very low safety significance and entered into the licensee's CAP as CR 2011103041, this violation is being treated as a NCV, consistent with the Enforcement Policy. NCV 05000348/2011002-01, Failure to maintain safety-related cables in a non-submerged environment.

## 1R07 Heat Sink Performance

### .1 Triennial Review of Heat Sink Performance

#### a. Inspection Scope

The inspectors reviewed operability determinations (ODs), completed surveillances, calculations, performance test results, and inspection results associated with the component cooling water (CCW) heat exchangers, residual heat removal (RHR) pump room coolers and emergency diesel generator heat exchangers.

These heat exchangers were chosen based on their risk significance in the licensee's probabilistic safety analysis, their important safety-related mitigating system support functions, and their relatively low margin.

For the CCW heat exchangers, RHR pump room coolers and emergency diesel generator heat exchangers, the inspectors determined whether test, inspection, maintenance, and monitoring of biotic fouling and macrofouling programs were adequate to ensure proper heat transfer. This was accomplished by determining whether the test method used was consistent with accepted industry practices, or equivalent, the test conditions were consistent with the selected methodology, the test acceptance criteria were consistent with the design basis values, and reviewing results of heat exchanger performance testing. The inspectors also determined whether the test results appropriately considered differences between testing conditions and design conditions, the frequency of testing based on trending of test results was sufficient to detect degradation prior to loss of heat removal capabilities below design basis values, and whether test results considered test instrument inaccuracies and differences.

The inspectors reviewed the methods and results of heat exchanger performance inspections. The inspectors determined whether the methods used to inspect and clean heat exchangers were consistent with as-found conditions identified and expected degradation trends and industry standards, the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry standards, and the as-found results were recorded, evaluated, and appropriately dispositioned such that the as-left condition was acceptable.

The inspectors determined whether the condition and operation of the CCW heat exchangers, RHR pump room coolers and emergency diesel generator heat exchangers were consistent with design assumptions in heat transfer calculations and as described in the final safety analysis report. This included determining whether the number of plugged tubes was within pre-established limits based on capacity and heat transfer assumptions. The inspectors determined whether the licensee evaluated the potential for water hammer and established adequate controls and operational limits to prevent heat exchanger degradation due to excessive flow induced vibration during operation. In addition, eddy current test reports and visual inspection records were reviewed to determine the structural integrity of the heat exchanger.

The inspectors also reviewed condition reports related to the heat exchangers/coolers, and heat sink performance issues to determine whether the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions. The documents that were reviewed are included in the Attachment to this report.

These inspection activities constituted two heat sink inspection samples as defined in IP 71111.07.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program

- a. Resident Inspector Quarterly Review: On January 18, 2011, the inspectors observed portions of the licensed operator training and testing program to verify implementation of procedures FNP-0-AP-45, Farley Nuclear Plant Training Plan; FNP-0-TCP-17.6, Simulator Training Evaluation/Documentation and FNP-0-TCP-17.3, Licensed Operator Continuing Training Program Administration. The inspectors observed operations simulator scenario 09-S602, conducted in the licensee's simulator for a reactor trip with inadvertent safety injection actuation, and an unaffected unit Notice of Unusual Event (NOUE) and subsequent Alert declaration resulting from a SG tube rupture. The inspectors observed high-risk operator actions, overall crew performance, self-critiques, training feedback and management oversight to verify operator performance was evaluated against the performance standards of the licensee's scenario. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R12 Maintenance Rule Effectiveness

a. Inspection Scope

The inspectors reviewed the following two activities for (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) scoping in accordance with 10 CFR 50.65(b) of the MR; (4) characterizing reliability issues for performance; (5) trending key parameters for condition monitoring; (6) charging unavailability for performance; (7) classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and (8) appropriateness of performance criteria for SSCs/functions classified as (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). In addition, the NRC specifically reviewed events where ineffective equipment maintenance resulted in invalid automatic actuations of Engineered Safeguards Systems affecting the operating units. Documents reviewed are listed in the Attachment.

- CR 2010106734, Unit 2 R60C radiation monitor has failed
- CR2011100042, Uni1 A charging pump bearing replacement and component alignment checks

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the following five activities to verify appropriate risk assessments were performed prior to taking equipment out of service (OOS) for maintenance. The inspectors verified risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors verified appropriate use of the licensee's risk assessment and risk categories in accordance with requirements in licensee procedures FNP-0-ACP-52.3, Mode 1, 2, & 3 Risk Assessment; FNP-0-UOP-4.0, General Outage Operations Guidance; NMP-GM-006, Work Management and NMP-OS-007, Conduct of Operations.

- February 8, 2011, Unit 2, Yellow maintenance risk condition concurrent with unavailability of the 2B motor driven auxiliary feedwater pump (MDAFWP)
- February 28, 2011, Unit 1, Yellow maintenance risk condition concurrent with unavailability of 1B EDG, high voltage switchyard work, and 1-2S 600 volt load center
- March 1, 2011, Unit 1, Yellow maintenance risk condition concurrent with unavailability of 1B RHR pump equipment, high voltage switchyard work and AMSAC uninterrupted power supply (UPS) maintenance
- March 4, 2011, Unit 1 Yellow maintenance risk condition concurrent with unavailability of train B solid state protection system (SSPS) and high voltage switchyard work
- March 22, 2011, Unit 2 Yellow maintenance risk condition concurrent with unavailability of train A MDAFWP, the shared 1C EDG (Unit 1/Unit 2), and high voltage switchyard work

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following six operability evaluations to verify they met the requirements of licensee procedures NMP-OS-007, Conduct of Operations and NMP-AD-012, ODs and Functionality Assessments. The scope of this inspection also

included a review of the technical adequacy of the evaluations, the adequacy of compensatory measures and the impact on continued plant operation.

- CR 2011100608, pressurizer auxiliary spray valve body to bonnet leak (RCS leakage)
- CR 2011100701, 1-2A EDG neutral resistor bank discovered with broken wires
- CR 2011100849, 1-2A EDG field failed to flash during a maintenance run of the engine
- CR2011101758, 1A CCW pump supply breaker discovered with damaged wires
- CR2011101930, pressurize auxiliary spray line snubber discovered with boron deposits
- CR2011103374, 1C EDG output breaker operating fork for the breaker's mechanically operated control (MOC) switch being out of position

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following plant modifications to ensure safety functions of important safety systems had been unaffected. The inspectors also verified design bases, licensing bases and performance capability of risk-significant SSCs had not been degraded through modifications. The inspectors verified any modifications performed during increased risk-significant configurations did not place the plant in an unsafe condition. The inspectors evaluated system operability, availability, configuration control, post-installation test activities, documentation updates and operator awareness of the modifications. Documents reviewed are listed in the Attachment.

Temporary Plant Modifications

- TM 2103274201, Unit 2 SG Feed Pump Bearing Wear Trip Cutout

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the criteria contained in licensee procedures FNP-0-PMT-0.0, Post-Maintenance Test Program, to verify post-maintenance test procedures and test activities for the following six systems/components were adequate to verify system operability and functional capability. The inspectors also witnessed the test or reviewed

test data to verify test results adequately demonstrated restoration of the affected safety functions. Documents reviewed are listed in the Attachment.

- FNP-0-STP-218.4, 'B' Train Control Room Pressurization Filter Unit Thermostat Calibration, and restoration of control room envelope
- FNP-1-STP-4.1, 1A Charging Pump Quarterly Inservice Test (IST), following maintenance to the 1A charging pump motor casing
- FNP-2-PMP-1299, Unit 2 Q2P16FV3009B Valve and Actuator Replacement Functional Test Procedure, following replacement of SW flow control valve 3009B
- FNP-2-STP-16.1, 2A Containment Spray Pump Quarterly IST, following maintenance to the 2A containment spray pump room cooler
- FNP-0-STP-80.2, DG 1C Operability Test, following the discovery of a jacket water leak on instrument tubing and subsequent DG output breaker mis-alignment with MOC switch
- FNP-1-STP-80.14, DG A Train Loss of offsite power (LOSP) and Sequencer Test, and resultant WO to investigate 1A service air compressor pressure switch anomalies

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

Mid-Cycle Outage Activities: The inspectors reviewed the following activities related to the Unit 2 mid-cycle outage to verify compliance with licensee procedure FNP-0-UOP-4.0, General Outage Operations Guideline. Shutdown risk, management oversight, procedural compliance and operator awareness were evaluated for each of the following nine activities. Documents reviewed are listed in the Attachment.

- Outage risk assessment
- Cooldown
- Boric acid cleanup and evaluation
- Reactor coolant instrumentation and inventory control
- Electrical system alignments and bus outages
- Containment closure
- Clearance activities
- Decay heat removal
- Reactivity control

b. Findings

No findings were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors reviewed the following surveillance tests, and either observed the test or reviewed test results to verify testing adequately demonstrated equipment operability and met TS requirements. The inspectors reviewed the activities to assess for preconditioning of equipment, procedure adherence and valve alignment following completion of the surveillance. The inspectors reviewed licensee procedures FNP-0-AP-24, Test Control; FNP-0-M-050, Master List of Surveillance Requirements and NMP-OS-007, Conduct of Operations and attended selected briefings to determine if procedure requirements were met. Documents reviewed are listed in the Attachment.

Surveillance Tests

- FNP-1-STP-10.3, Emergency Core Cooling Valves IST and power-operated relief valve (PORV) Block Valve Stroke Test
- FNP-2-STP-23.3, 2C CCW Pump Quarterly IST
- FNP-2-STP-4.3, 2C Charging Pump Quarterly IST
- FNP-2-STP-22.2, 2B AFWP Quarterly IST

In-Service Test (IST)

- FNP-2-STP-45.1, Chemical and Volume Control System (CVCS) Cold Shutdown IST

b. Findings

No findings were identified.

## 4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verificationa. Inspection Scope

The inspectors sampled licensee data for the three PIs listed below to verify the accuracy of the PI data reported during the period listed. Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Rev. 5, was used to verify the basis in reporting for each data element. Documents reviewed are listed in the Attachment.

Cornerstone: Mitigating Systems

- Unplanned Trips
- Unplanned Power Changes per 7,000 Critical Hours
- MSPI, RHR System

The inspectors reviewed samples of raw PI data, LERs, and Monthly Operating Reports for the period covering January, 2010, through December, 2010. The data reviewed from the LERs and Monthly Operating Reports was compared to graphical

representations from the most recent PI report. The inspectors also examined a sampling of operations logs and procedures to verify the PI data was appropriately captured for inclusion into the PI report, as well as ensuring the individual PIs were calculated correctly.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Daily CR Reviews

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the NRC performed a daily screening of items entered into the licensee's CAP. This review was accomplished by reviewing hard copies of CRs, attending daily screening meetings and accessing the licensee's computerized database.

.2 Selected Issue Follow-up Inspection

a. Inspection Scope

In addition to the routine review, the inspectors selected the issue listed below for a more in-depth review. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of CRs and (7) completion of corrective actions in a timely manner.

- CR 2011102971, Mal-operation of the 1B EDG emergency start/reset pushbutton

b. Observations

On March 7, 2011, a control room operator incorrectly depressed the 1B EDG Emergency Start/Reset Pushbutton during the restoration steps of station procedure FNP-1-STP-80.8, DG 1B 1000KW Load Rejection Test. The inspectors reviewed the station electrical prints and determined the shutdown solenoid caused the EDG's fuel racks to go to their closed position, which resulted in a momentary reduction in the engine's speed. A relay in the shutdown solenoid's control circuit has a 140 second timer associated with it. At the end of the 140 seconds, 1B EDG engine speed was still sufficient for the engine to maintain combustion when the fuel racks restored to their original position. Thus, the engine returned to normal operating speed. From this review, the inspectors determined no adverse consequences resulted, and the 1B EDG remained operable. The inspectors also reviewed the findings of the Human

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Performance Review Board which determined the peer check was inadequate and the performer's preparation for the overall task was not adequate. The inspectors reviewed the licensee's corrective actions which included an enhancement to station procedure FNP-1-STP-80.8, DG 1B 1000KW Load Rejection Test, additional emphasis on the integrity of peer checks, and developing and implementing practical exercises to extend to concurrent verification. The inspectors determined these corrective actions were reasonable to address the inadequate human performance associated with the mal-operation of the 1B EDG.

.3 Operator Work-Around Annual Review

a. Inspection Scope

The inspectors performed a detailed review of the work-around lists for Unit 1 and 2 in effect on February 16, 2011. The inspectors reviewed the proposed corrective actions and schedule for each item on the work-around list. The inspectors reviewed the compensatory actions and cumulative effects on plant operation. The inspectors verified each item was being dispositioned in accordance with plant procedure FNP-0-ACP-17.0, Work-Around Program.

b. Findings

No findings were identified.

4OA3 Event Follow-up

.1 (Closed) LER 05000364/2010-003-00 Power Supply to 1-2R Load Center Unavailability

a. Inspection Scope

During the period between August 5 and August 9, 2009, the Unit 2 power supply to the 1-2R 600 volt load center did not meet the Unit 2 requirement of TS 3.8.9, "Distribution Systems – Operating." This was discovered on August 9, 2009, during a routine surveillance for the on-site AC distribution, where the Unit 2 4160 volt supply breaker DH08-2 to 1-2R 600 volt load center was found in the open position. The 4160 volt supply breaker DH08-2 was left open due to omission of relevant information in procedures and the interpretation of TS 3.8.9 limited condition of operation (LCO) existing at that time. The licensee has revised station procedures to contain guidance to reclose the 4160 volt supply breaker DH08-2, and explain the TS consequences of not closing the supply breakers to the 1-2R 600 volt load center.

The LER was submitted more than sixty-days after the event date due to the initial classification of this event by the licensee as non-reportable. The power-seeking function for the 1-2R 600 volt load center was considered by the licensee to be a function associated with EDG 1C since the load center supplies the auxiliary loads for the EDG, thus the event was not reportable. Subsequently, the NRC staff determined the power-seeking function was a part of the electrical distribution system (T.S. 3.8.9). This position was documented in Inspection Report 05000348/364/2009-005.

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The inspectors reviewed the licensee corrective actions associated with this LER and CR 2009107823 and 2010107111. The inspectors determined the corrective actions adequately addressed the issue of concern.

b. Findings

No additional findings were identified. Integrated Inspection Report 05000348/2009005 and 05000364/2009005, documented a Green, NRC-identified NCV of TS 3.8.9 for failure to meet the LCO of maintaining two trains of AC vital bus electrical power distribution subsystems operable. This LER is closed.

.2 (Closed) LER 05000348/2010-003-00, Shutdown Time Exceeded for High Containment Air Temperature and URI 05000348/2010004-01, Failure of Containment Isolation Valve to Provide Proper Indication for its Containment Isolation Function

a. Inspection Scope

On August 14, 2010, the SW from RCP motor air cooler motor-operated valve Q1P16MOV3134 failed to indicate 'closed' during a normal quarterly surveillance test. The valve continued to have dual position indication, and thus the ability of this valve to perform its containment isolation function, was in question. The licensee entered TS 3.6.3 and closed another isolation valve to restore the function as required. This action resulted in a cooling source to containment air temperature being removed. During the afternoon hours of August 14, 2010, the Unit 1 containment average temperature exceeded its TS limit of 120 degrees F. TS 3.6.5 required the licensee to reduce average temperature below 120 degrees F within eight hours, or be in Mode 3 within six hours and in Mode 5 within 36 hours. The licensee requested enforcement discretion on August 15, 2010, to maintain Unit 1 in Mode 1. Discretion was verbally granted by the NRC on August 15, 2010. The NRC determined the requested enforcement discretion was necessary to avoid unnecessary transients as a result of compliance with the license condition and thus, minimize potential safety consequences and operational risks.

Q1P16MOV3134 is a six-inch Enertech butterfly valve operated by a Limitorque motor-operated actuator. Each unit has three Enertech butterfly valves in the supply and return lines of SW from the RCP motor air coolers. Two of these valves provide a containment isolation function upon an engineered safeguards function (ESF) actuation. In 2004 and again in 2005, failures occurred where the Unit 2 valves had dual position indication after a demanded position during surveillance testing. In 2007, the licensee recognized the need to make these valves position limit switch seated, instead of torque switch seated, to correct the dual position indication problem. The licensee implemented minor design changes on all six valves to accomplish this corrective action. The licensee failed to recognize the torque switch settings needed to be increased to provide a margin between the limit switch seating value and the torque switch seating value. In 2008 and 2009, the licensee again experienced instances of dual position indication on these valves. In July 2009, the licensee created WOs to adjust the torque switch settings to ensure an appropriate limit to minimizing the potential for dual indication-type closing

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stroke results. Three of these WOs have been completed, and the remaining three are scheduled to occur in the future.

The inspectors opened URI 05000348/2010004-01, Failure of Containment Isolation Valve to Provide Proper Indication for its Containment Isolation Function, in the third quarter of 2009 to track this issue until the licensee completed its cause determination. The inspectors reviewed this cause determination to ascertain the exact cause of the dual indications and the extent of condition. The inspectors also reviewed the licensee's planned corrective actions and associated WOs. The inspectors also interviewed station personnel related to the site's MOV program and the control of torque switches.

b. Findings

One licensee-identified violation was identified, and is documented in section 4OA7 of this report. This LER and URI are closed.

.3 (Closed) LER 05000348/2010-004-00, Loss of Refueling Integrity

a. Inspection Scope

On October 29, 2010, the licensee discovered one of the containment penetrations had direct access to the outside atmosphere during core alterations. Core alterations commenced on October 28, 2010, in the morning hours with containment refueling integrity established. The licensee had established inside containment isolation of containment penetration 18 utilizing isolation valves inside the containment building. The licensee undertook a scheduled maintenance activity on October 29, 2010, removing the RHR pump suction relief on train B RHR. The removal of the relief valve from the system created an opening inside containment providing direct access from the containment atmosphere to the auxiliary building during the time the relief valve was not installed. During the end of the maintenance activity, the licensee discovered two seal cooler vent valves (located in the auxiliary building) for the train B RHR pump, were open. The replacement relief valve was installed, and containment refueling integrity was lost for about 10 minutes on October 29, 2010, at approximately 4:30 a.m.

The inspectors reviewed the information contained within this LER and in the licensee apparent cause determination. The inspectors also interviewed station personnel. The inspectors reviewed the completed FNP-1-STP-18.4, Containment Mid-Loop and/or Refueling Integrity Verification and Containment Closure. The inspectors reviewed TS 3.9.3, Containment Penetrations, which is applicable during core alterations. TS 3.9.3 require the licensee to immediately suspend core alterations and movement of fuel assemblies within containment, when one or more containment penetrations are not in the required status. The licensee had installed the replacement relief valve at approximately the same time they discovered the loss of refueling integrity. The licensee's cause determination attributed the cause to a latent procedure error occurring when a design change for each RHR pump for each unit installed two additional seal cooler vent valves. The design changes were implemented in the mid-1990s, and station procedures were not revised to accurately implement the plant changes. This resulted in failure to capture the need to control the position of the RHR pump seal

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cooler valves in FNP-1-STP-18.4 and FNP-2-STP-18.4. The inspectors reviewed the licensee's planned corrective actions, which included revisions to the above procedures. The licensee also recognized operations personnel had previously identified a weakness in the area of design change impact reviews, which is captured in CR 2010101103. The inspectors reviewed the licensee's corrective actions related to CR 20101103, which included revision of the operations procedure writer's desktop guide to include an independent review of the design change impact review forms for MSPI equipment, prior to submittal to the design organization and reevaluating design change impact reviews to address recent identified gaps. The inspectors also noted the licensee had assigned an experienced operator to perform the design change impacts to operations procedures. The inspectors determined the licensee corrective actions were sufficient to address the issue.

b. Findings

One licensee-identified violation was identified, and is documented in section 4OA7 of this report. This LER is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspector's normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On April 14, 2011, the NRC presented the inspection results to members of your staff who acknowledged the findings. The NRC confirmed proprietary information was not provided or examined during the inspection.

4OA7 Licensee Identified Violations

The following violation of very low safety significance was identified by the licensee, and is a violation of NRC requirements which meet the criteria of Section VI.A.1 of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

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- 10 CFR 50 Appendix B, Criterion XVI, states in part, that measures shall be established to assure conditions adverse to quality, such as failures, malfunctions, deficiencies, deviation, defective material and equipment and non-conformances are promptly identified and corrected. Contrary to the above, the licensee failed to take timely corrective actions to properly address dual indications experienced on multiple occasions. In 2004, and again in 2005, failures occurred where the Unit 2 valves had dual position indication after a demanded position during surveillance testing. In 2007, the licensee recognized the need to make the Unit 1 and Unit 2 valves position limit switch seated, instead of torque switch seated, to correct the dual position indication problem. The licensee implemented minor design changes on all six valves to accomplish this corrective action. During the implementation of the corrective action, the licensee failed to adjust the torque switch settings to provide sufficient margin between the limit switch seating value and the torque switch seating value. In 2008 and 2009, the licensee again experienced instances of dual position indication on these valves. In July 2009, the licensee created WOs to adjust the torque switch settings to ensure an appropriate limit to minimizing the potential for dual indication-type closing stroke results. The licensee entered this condition in its CAP as CR 2010110828. This finding was assessed using IMC 0609, Phase 1 screening worksheets of Attachments 4 and Appendix H relating to Containment Barrier Integrity, and determined to be of very low safety significance (Green), because the valve passed its local leak rate test, and would not have allowed the entire volume of containment to exit through the opening within a 24 hour period.
- TS 3.9.3 requires the licensee to immediately suspend core alterations and movement of fuel assemblies within containment when one or more containment penetrations are not in the required status. Contrary to the above, the licensee performed maintenance on a Residual Heat Removal (RHR) pump suction relief valve during core alterations which resulted in containment refueling integrity being lost for approximately 10 minutes. On October 29, 2010, the licensee discovered one of the containment penetrations had direct access to the outside atmosphere during core alterations. On October 28, 2010, the licensee had commenced core alterations in the morning hours with containment refueling integrity established. The licensee undertook a scheduled maintenance activity on October 29, 2010, removing the RHR pump suction relief on train B RHR. The removal of the relief valve from the system created an opening inside containment providing direct access from the containment atmosphere to the auxiliary building during the time the relief valve was not installed. This condition lasted for approximately 10 minutes. The licensee installed the replacement relief valve at the point of discovery re-establishing containment refueling integrity. The licensee entered this condition in its CAP as CR 2010101103. This finding was assessed using IMC 0609, Phase 1 screening worksheets of Attachments 4 and Appendix H relating to Containment Barrier Integrity, and determined to be of very low safety significance (Green), because the finding represents a shutdown condition in Mode 6 where decay heat is relatively low and occurred greater than 8 days after the start of the refueling outage.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel

S. Brown, Health Physics Support Supervisor  
P. Cooper Instructional Technical Supervisor  
B. Grinder, Engineering Director  
D. Hobson, Operations Support Superintendent  
J. Horn, Site Support Manager  
R. Martin, Engineering Programs Manager  
W. Oldfield, Licensing Engineer  
T. Pelham, Performance Improvement Supervisor  
C. Peters, HP Manager  
R. Roberson, Fleet Oversight  
L. Smith, Maintenance Manager  
G. Terry, Southern Nuclear Corporate HX/Cooler Eddy Current Testing Program Manager  
S. Varnum, Chemistry Manager  
K. Walker, Service Water Engineer  
C. Westberry, Engineering Systems Manager

#### NRC personnel

Scott M. Shaeffer, Chief, Branch 2, Division of Reactor Projects

### LIST OF REPORT ITEMS

#### Opened

None

#### Opened and Closed

05000348/2011002-01      NCV      Failure to Maintain Safety-Related Cables in a Non-Submerged Environment (Section 1R06.2)

#### Closed

05000364/2010-003-00      LER      Power Supply to 1-2R Load Center Unavailability (Section 4OA3.1)

05000348/2010-003-00      LER      Shutdown Time Exceeded for High Containment Air Temperature (Section 4OA3.2)

05000348/2010-004-00      LER      Loss of Refueling Integrity (Section 4OA3.3)

05000348/2010-004-01      URI      Failure of Containment Isolation Valve to Provide Proper Indication for its Containment Isolation Function (Section 4OA3.2)

#### Discussed

None

## LIST OF DOCUMENTS REVIEWED

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

#### Condition Reports:

2010112115, 2010112779, 2010118051, 2010118228,

#### Procedures:

FNP-0-AOP-21.0, Severe Weather, Revision 29  
FNP-0-SOP-0.12, Cold Weather Contingencies, Version 16.0

#### Work Orders:

1102565801, 2103551401

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

#### Drawings:

D-170119, Sheet 1, Version 34.0  
D-200013, Sheet 2, Version 7.0  
D-205038, Sheet 1, Version 1.0  
D-205038, Sheet 3, Version 1.0

#### Procedures:

FNP-2-SOP-9.0A, Containment Spray System, Version 7.0

### **Section 1R05: Fire Protection**

#### Documents:

Fire Drill Number 20110327-1, U1 ELE Pen RM 334, Fire Zone 34

#### Drawings:

A-508650, Sheet 13, Fire Zone Data Sheet, Aux. Bldg. El. 100'-0", Version 1.0  
A-508651, Sheet 7, Fire Zone Data Sheet, Service Water Intake Structure, Version 6.0  
A-508651, Sheet 8, Fire Zone Data Sheet, Service Water Intake Structure, Version 3.0  
A-509018, Sheet 12, Fire Zone Data Sheet, Aux Bldg. El. 100'-0", Version 2.0  
A-509018, Sheet 13, Fire Zone Data Sheet, Aux. Bldg. El. 100'-0", Version 1.0  
A-509018, Sheet 26, Fire Zone Data Sheet, Aux. Bldg. El. 139'-0", Version 2.0  
D-205038, Sheet 1, Safety Injection System (Containment Spray), Version 1.0  
D-205038, Sheet 2, Safety Injection System (Containment Spray), Version 1.0  
D-204759, Sheet 1, Wiring Diagram for Electrical Penetration Protective Cabinet 2F, Version 3.0

#### Procedures:

FNP-0-ACP-59, Extension Cord Usage and Temporary Electrical Cable Installation Guidelines, Version 5.0  
FNP-0-AOP-29.0, Plant Fire, Version 38.0  
FNP-0-EIP-13.0, Fire Emergencies, Version 24.0  
FNP-0-EMP-1002.01, Electrical Maintenance Precautions and Limitations, Version 40.0  
FNP-0-FVP-14.0, Auxiliary Building Smoke and CO<sub>2</sub>/Halon Removal (Portable Equipment), Version 2.0

**Section 1R06: Flood Protection Measures**Condition Reports:

2010100512, 2011103041, 201103553, 2011103311, 2010110422

Documents:

Calculation BM-99-1932-001, Internal Flooding Assessment  
 UFSAR, Section 3.4, Water Level (Flood) Design  
 NMP-GM-002-F02, Apparent Cause Determination Report for CR 2010100512, Version 7.0

Procedures:

FNP-0-GMP-60.1, General Inspection Outdoor Electrical Duct Run Pull Boxes, Version 7.0

Work Orders:

S092760001, S102782001

**Section 1R07: Heat Sink Performance**Condition Reports

2011101117, U2 A Train SW Strainer (Q2P16F501B) has a packing leak causing water to collect on the floor of the lower elevation of the SWIS. Please generate a W/O to repair

Documents

A181001, Service Water System Functional System Description, Revision 54  
 SM-C080146901-001, Units 1 and 2 Component Cooling Water Heat Exchanger Proto HX  
 Computer Model  
 MC-F-10-0099, Proto Heat Exchanger Small and Large Diesel Heat Exchanger Model  
 SM-C036017701-04, Room Cooler Heat Transfer Performance

Procedures

FNP-0-CCP-708.0, Chemical Addition and Control of the Service Water System, Version 67.0

Work Orders

1070282301, 1103559301, 2102332901, 2102058901

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

Licensed Operator Continuing Training Simulator Exercise Guide: LOCT 10-12 Cycle 4, 2011-S0401

**Section 1R12: Maintenance Effectiveness**Condition Reports:

2007109952, 2010100593, 2010101017, 2010103632, 2010106734, 2010106758, 2010111967, 2011100042

Documents:

Farley Unit 1 Consolidated Data Entry 4.0, MSPI Derivation Report, MSPI High Pressure Injection System, Unavailability and Unreliability Indexes Generation Date 2/1/2011  
 Joseph M. Farley Nuclear Plant, Unit 2 Special Report 2010-002-00, Inoperable Radiation Monitor R-60C, Dated June 3, 2010

Long Range Plan Radiation Monitoring System, revised 9/17/2007  
System Health Report, Farley Radiation Monitors

Procedures:

NMP-AD-008-F01, Applicability Determination, Version 5.0  
FNP-0-MP-5.8, Disassembly Inspection and Repair of Westinghouse/Nuttall Type SU High-Speed Gear Drives (Charging Pump Speed Increaser), Version 4.0  
FNP-0-GMP-21.0, Coupling Alignment, Version 14.0  
FNP-0-SOP-2.8, Charging Pump Lubrication Procedure, Version 9.0  
FNP-0-M-87, Appendix A, Maintenance Rule Scoping Document, Version 20.0  
FNP-10-0047-ES, November, 2010 Maintenance Rule Report

Work Orders:

1070267801, 1072420601, 1082433601, 1090393701, 1091234401, 1092275101, 1102026801, 1103209301, 1103332406, 1103552201, 2082279001

**Section 1R15: Operability Determinations**

Action Items:

2010204996

Condition Reports:

2010106030, 2011100701, 2011100709, 2011100715, 2011100716, 2011100719, 2011100722, 2011100849, 2011101758, 2011101928, 2011101929, 2011101930, 2011101931, 2011103311, 2011103337, 2011103374

Work Orders:

C110157601, C11015760

**Section 1R18: Plant Modifications**

Documents:

10 CFR 50.59 Screening/Evaluation, "2A & 2B SGFP Temporary Modification" dated November 2, 2010  
GE Entergy, Optimization & Controls System & Instrumentation  
TM#2103274201, Unit Two SGFP Bearing Wear Trip Cutout

Drawings:

D-202886, Sheet 1, Version 15.0

Work Orders:

2103274401, 2103274501, OM53705001

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

2010117396, 2011101797, 2011102369, 2011102499, 2011103311, 2011103367, 2011103374, 2010114470

**Drawings:**

D-172761, Sheet 1, Version 14.0  
 D-172936, Sheet 1, Version 21.0  
 D-175039, Sheet 6, Version 8.0  
 D-205012, Sheet 1, Version 40.0

**Procedures:**

FNP-0-EMP-1313.20, Enhanced Inspection of Cutler Hammer 4.16KV Circuit Breakers Type MA-VR350, Version 14.0  
 FNP-0-EMP-1370.01, Electrical Maintenance Procedure, Cable Termination, Splicing and Repair, Version 15.0  
 FNP-0-SOP-0.0, General instruction to Operations Personnel, Appendix I – Control Room Envelope Penetrations, Version 142.0  
 FNP-0-STP-26.2, Control Room Pressurization/Filtration Operability Test, Version 25.0  
 FNP-0-STP-80.2, Diesel Generator 1C Operability Test, Version 57.0  
 FNP-0-STP-218.4, 'B' Train Control Room Pressurization Filter Unit Thermostat Calibration, Version 8.0  
 FNP-1-STP-4.1, 1A Charging Pump Quarterly Inservice Test, Version 61.0  
 FNP-1-STP-213.13, Steam Generator 1A Wide Range Level Q1N11LT0477 Loop Calibration, Version 26.0  
 FNP-2-PMP-1299, Unit 2 Q2P16FV3009B Valve and Actuator Replacement Functional Test Procedure, Version 1.0  
 FNP-2-STP-16.1, 2A Containment Spray Pump Quarterly Inservice Test, Version 47.0  
 FNP-2-STP-23.14, CCW SW Flow Control Valve Quarterly Inservice Test, Version 6.0  
 FNP-1-STP-80.14, Diesel Generator A Train LOSP and Sequencer B1H Load Shedding Circuit Test, Version 53.0

**Work Orders:**

1091526801, 1103433201, 1110583201, 2070138914, 2091426401, 2092422801, 2100312101, 2100373801, S090943901, 1103119401

**Section 1R20: Outage Activities****Drawings:**

U-176400

**Procedures:**

FNP-2-SOP-7.0, Residual Heat Removal System, Version 93.1  
 FNP-2-UOP-1.1, Startup of Unit From Cold Shutdown to Hot Standby, Version 85.1  
 FNP-2-UOP-2.1, Shutdown of Unit From Minimum Load to Hot Standby, Version 59.0  
 FNP-2-UOP-2.2, Shutdown of Unit From Hot Standby to Cold Shutdown, Version 78.0

FNP-2-UOP-2.4, Planned Reactor Shutdown and Cooldown to Cold Shutdown, Version 9.0  
FNP-2-UOP-4.2, Non-Refueling Outage Operation, Version 12.0

Work Orders:

1080790901, 1091294501, 204369702, 2082261101

**Section 1R22: Surveillance Testing**

Drawings:

D-205007, Sheet 1, Version 22.0  
D-205039, Sheet 2, Version 1.0

Procedures:

FNP-1-STP-10.3, Emergency Core Cooling Valves Inservice Test and PORV Block Valve Stroke Test, Version 37.0  
FNP-2-STP-4.3, 2C Charging Pump Quarterly Inservice Test, Version 62.0  
FNP-2-STP-22.2, 2B Auxiliary Feedwater Pump Quarterly Inservice Test, Version 30.0  
FNP-2-STP-23.3, 2C Component Cooling Water Pump Quarterly Inservice Test, Version 36.0  
FNP-2-STP-45.1, CVCS Cold Shutdown Valves Inservice Test, Version 32.0

Work Orders:

1090838001, 1091715201, 1110057701, 2082284301, 209080901, 2091720401, 2092158101

**Section 4OA1: Performance Indicator Verification 71151**

Documents:

Farley Unit 1 and Unit 2 Consolidated Data Entry 4.0, MSPI Derivation Report, MSPI Residual Heat Removal System, Unavailability and Unreliability Indexes Generation Date 2/1/2011  
Unit 1 and Unit 2 Operators Logs from 7/1/2010 to 10/1/2010

**Section 4OA2: Identification and Resolution of Problems 71152**

Condition Reports

2008108206, 2008113041, 2009110006, 2009111293, 2011102971

Documents:

Human Performance Review Board Summary dated March 11, 2011

Drawings:

D-172646, Sheet 1, Version 16.0  
D-172778, Sheet 1, Version 20.0  
D-172779, Sheet 1, Version 14.0

Procedures:

FNP-1-STP-80.8, Diesel Generator 1B 1000KW Load Rejection Test, Version 21.0

Work Orders:

1081634201, 1092364401, 208234201, 2092198601

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

2009204727, 2010204419

**Condition Reports**

2008100050, 2008112219, 2009101938, 20091044096, 2009113341, 2009113365,  
2010113700, 2009113398, 2010100526, 2010101023, 2010101103, 2010110828, 2010111535,  
2010114076, 2010114366, 2010115664

**Documents:**

Letter dated February 7, 2001, Joseph M. Farley Nuclear Plant, Units 1 and 2 Re:Safety  
Evaluation of Licensee Response to Generic Letter 96-05

Letter dated August 19, 2010, Notice of Enforcement Discretion for Southern Nuclear Operating  
Company Regarding Joseph M. Farley Nuclear Plant Unit 1 [NOED NO. 10-2-004]

Tagout 1-DT-R23-E11-00293, Unit 1 B Train RHR – Maintenance Upstream of Pump Discharge

**Procedures:**

FNP-1-STP-18.4, Containment Mid-Loop and/or Refueling Integrity Verification and  
Containment Closure, Version 35.0

FNP-1-STP-627, Local Leak Rate Testing of Containment Penetrations, Version 42.0

FNP-1-STP-627.2, Leak Testing of the Containment Purge System, Version 18.0

**Work Orders:**

1052455202, 1072506602, 1080003001, 1081029901, 1100273401, 1102433502, 1102814303,  
1102814310, 2071001901, 2090433101, 2092675501, 2092160701