



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

October 30, 2009

Mr. J. Randy Johnson  
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 05000348/2009004, 05000364/2009004, 05000348/2009501 AND  
05000364/2009501

Dear Mr. Johnson:

On September 30, 2009, 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 October 8, 2009, with Mr. John Horn and members of your staff and on October 29, 2009, with Mr. Howard Mahan.

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.

This report documents two self revealing findings and one NRC identified finding of very low safety significance (Green). Two of these findings were determined to involve violations of NRC requirements. However, because the findings were of very low safety significance and because they were entered into your corrective action program (CAP), the NRC is treating these findings as non-cited violations (NCVs), consistent with Section VI.A.1 of the NRC's 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 the Farley Nuclear Plant. In addition, if you disagree with the characterization of 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 Resident Inspector at the Farley Nuclear Plant. The information you provide will be considered in accordance with the Inspection Manual Chapter (IMC) 0305.

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2

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 the 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 05000348/20009004, 05000364/2009004,  
05000348/2009501 and 05000364/2009501  
w/Attachment: Supplemental Information

cc w/encl.: (See page 3)

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 the 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

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3

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4

Letter to J. Randy Johnson from Scott M. Shaeffer dated October 30, 2009

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000348/2009004, 05000364/2009004, 05000348/2009501 AND  
05000364/2009501

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 05000348, 05000364

License Nos.: NPF-2, NPF-8

Report No.: 05000348/2009004, 05000364/2009004, 05000348/2009501, and  
05000364/2009501

Licensee: Southern Nuclear Operating Company, Inc.

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

Location: Columbia, AL

Dates: July 1 2009, through September 30, 2009

Inspectors: E. Crowe, Senior Resident Inspector  
S. Sandal, Resident Inspector  
G. Kuzo, Senior Health Physicist (Sections 2PS3, 4OA1, 4OA5)  
H. Gepford, Senior Health Physicist (Section 2OS3)  
R. Moore, Senior Reactor Inspector (Section 4OA5)  
D. Jones, Senior Reactor Inspector (Section 4OA5)  
A. Nielsen, Health Physicist (Sections 2PS1, 4OA1, 4OA5)  
L. Miller, Senior Emergency Preparedness Inspector  
(Sections 1EP2, 1EP3, 1EP4, 1EP5, 4OA1, 4OA5)

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000348/2009004, 05000364/2009004, 05000348/2009501, and 05000364/2009501; 07/01/2009 – 09/30/2009; Joseph M. Farley Nuclear Plant, Units 1 and 2; Surveillance Testing, Event Follow-up and Other Activities.

The report covered a three-month period of inspection by the resident inspectors, two senior health physicists, two senior reactor inspectors, a senior emergency preparedness inspector and a health physicist. Three Green findings, two of which were NCVs were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

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

#### Cornerstone: Mitigating Systems

- Green. An NRC identified NCV of 10 CFR 50.65(a)(1), Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, was identified for failure to monitor and maintain the emergency air system's capability to operate the steam generator atmospheric relief valves (ARVs) and turbine driven auxiliary feedwater (TDAFW) pump steam admission valves since 1995. This finding has been entered into the licensee's CAP as condition report (CR) 2009101539.

This finding was greater than minor because it was associated with the equipment performance attribute and affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to preclude undesirable consequences (i.e. core damage). The degradation of the reliability and capability of the emergency air system was attributed to the lack of adequate monitoring and maintenance. This finding was assessed using the Phase 1 screening worksheet of the SDP and determined a Phase 3 analysis was required. Phase 3 results characterized the performance deficiency as very low safety significance (Green) based on risk. The inspectors identified a cross-cutting aspect in the problem identification and resolution area of corrective action program (P.1(c)). (Section 4OA5.2)

- Green. A self-revealing NCV of Technical Specification (TS) 5.4.1, Procedures, was identified for failure to implement surveillance test procedure instructions for starting the Unit 1 TDAFW pump. The failure resulted in an over-speed trip and inoperability of the pump. This finding has been entered into the licensee's CAP as condition report (CR) 2009110308.

Enclosure

The failure to implement surveillance test procedure instructions for starting the Unit 1 TDAFW pump was a performance deficiency. This finding was greater than minor because it adversely affected the equipment performance attribute of the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems responding to initiating events to prevent undesirable consequences (i.e., core damage).

This finding was assessed using the Phase 1 screening worksheet of the SDP and determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for greater than the TS allowed outage time, and was not potentially risk-significant due to external events. The inspectors identified a cross-cutting aspect in the human performance area of work practices (H.4(b)). The licensee established procedure instructions requiring both steam supplies to the TDAFW pump be opened simultaneously to prevent over-speeding the pump, however, personnel did not follow those procedures. (Section 1R22)

- Green. A self-revealing finding was identified for a failure to implement procedures to ensure that temporary equipment carts were immobilized in order to prevent inadvertent contact with safety related equipment. Specifically, the Unit 1 'H' bus protective relay cabinet resulting in inoperability of the 1C Emergency Diesel Generator (EDG). This finding was entered into the licensee's CAP as CR 2009101710.

Failure to implement a procedure to ensure temporary equipment carts were immobilized to prevent inadvertent contact with the Unit 1 'H' bus protective relay cabinet was a performance deficiency. This finding was greater than minor because it adversely affected the equipment reliability attribute of the mitigating systems cornerstone objective to ensure the availability, reliability and capability of systems responding to initiating events to prevent undesirable consequences (i.e., core damage). This finding was assessed using the Phase 1 screening worksheet of the SDP and determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for greater than the TS allowed outage time. The finding did not involve a total loss of any safety function, as identified by the licensee through a Probabilistic Risk Assessment (PRA), Individual Plan Examination of External Events (IPEEE), or similar analysis, contributing to external event-initiated core damage accident sequences (i.e., initiated by a seismic, flooding, or severe weather event). The inspectors identified a cross-cutting aspect in the human performance area of work practices component (H.4(b)). The licensee had established a procedure requiring all wheeled items left in safety-related areas be made incapable of rolling and personnel did not follow the procedure. The procedure the licensee failed to implement was not safety related, therefore, the performance deficiency did not result in a violation of regulatory requirements. (Section 4OA3.1)

B. Licensee-identified Violations

None.

Enclosure

## 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 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

#### 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 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 component cooling water (CCW) system during 1B CCW pump equipment outage
- Unit 1 CCW system and service water (SW) system during welding repairs of 1A CCW pump mini-flow vent valve (V0210)
- Unit 1/2 electrical distribution system including the EDGs during electrical fault on the 2C EDG
- Unit 2 station SW system train 'A' during repair activities to 2E SW pump

Complete Walk-Down. The inspectors conducted a complete walk-down of the accessible portions of the following system. This inspection sample was completed using the guidance listed in Operating Experience Smart Sample FY2009-02. The inspectors used licensee procedure FNP-1-SOP-22.0, AFW System, and Functional System Description (FSD) A181010, AFW System, to verify the system alignment of on-service equipment. The inspectors also reviewed personnel, reviewed control room logs, Maintenance Rule (MR) monthly reports, CRs, quarterly system health reports, outstanding work orders (WOs), and industry operating experience (OE) to verify

Enclosure

alignment and equipment discrepancies were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

- Unit 1 AFW system

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Protection Area Tours: The inspectors conducted a tour of the four 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, spent fuel pool (SFP) area, Fire Zone 4
- Unit 1, DC distribution room, Fire Zones 18 and 19
- Unit 2, cable spreading room, Fire Zone 6
- Unit 2, service water intake structure (SWIS), Fire Zones 72A and 72E

Fire Drill: On July 22, 2009, the inspectors observed a fire drill for a simulated fire in the Unit 1 non-radiological portion of the Auxiliary Building in the 139' elevation hallway. The fire was simulated to affect the DC Electrical Equipment Room air handling unit. The inspectors observed licensee response in the fire equipment staging area, main control room, and entry into the simulated fire area to verify it was in accordance with plant 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>/Halone Removable (Portable Equipment) to verify these procedures were properly implemented.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performancea. Inspection Scope

The inspectors reviewed the results of performance testing for the 2C EDG Jacket Water Heat Exchanger (HX) documented in S072024101. The inspectors verified the licensee utilized the periodic maintenance method outlined in Electric Power Research Institute (\*EPRI) report NP-7552, HX Performance Monitoring Guidelines and that the station procedure FNP-0-ETP-4368, Performance Test For Units 1&2 Small DG Jacket Water HXs accurately reflected those guidelines. The inspectors evaluated this activity for conditions masking degraded performance, common cause heat sink performance problems increasing risk, and heat sink performance problems resulting in initiating events or affecting multiple HXs in mitigating systems. The inspectors also reviewed the licensee's CR database to verify HX problems were being identified and resolved.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

Resident Inspector Quarterly Review: On September 15, 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-S804 conducted in the licensee's simulator for a steam generator (SG) tube leak on the 1A SG with loss of power to PK-444A controller. Additional failures included FK-122 fails low in auto, bank D rod K6 sticks at 222 steps, main turbine fails to manual control, bank D rod K10 sticks, and feed regulating valve 1A fails high in auto. 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 of significance were identified.

1R12 Maintenance Rule Effectivenessa. 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

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(8) appropriateness of performance criteria for structures, systems, and components (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 2009109700, Abnormal noise during 2E SW pump start
- CR 2009107856, Failure of Unit 1 'B' Section TDAFW Pump Inverter Section

b. Findings

Introduction. The NRC identified an issue of concern regarding the licensee's failure to monitor the condition of the Unit 1 and Unit 2 SW pump seismic rings. The failure to implement measures to monitor the material condition of the seismic rings resulted in component degradation to the extent that the 2E SW pump was unable to perform its safety function in response to a design basis seismic event. This issue of concern will be characterized as an unresolved item (URI) pending further inspection by the NRC to determine both (1) the extent of condition for this issue (i.e. if a performance deficiency exists) and (2) the degree to which the reliability of plant equipment was adversely impacted as a result of the failure to monitor the affected components (i.e. more than minor).

Description. On August 2, 2009 during a performance run of the 2E SW pump, the licensee noticed abnormal noise in the wet pit area of the service water intake structure (SWIS) in the vicinity of the 2E SW pump. The control room operators declared the pump inoperable. The licensee inspected the 2E SW pump seismic ring remotely and determined the ring had dropped approximately 5 inches at its most remote point from the SWIS wall. The seismic ring is a hoop encircling the pump's discharge column allowing approximately 0.200 inch clearance with the discharge column. The hoop is bolted onto a bracket which is bolted to the SWIS vertical wall inside the wet pit. Divers entered the SWIS wet pit on August 14, 2009 and confirmed the indications seen on the remote camera. On August 15, 2009, the divers torqued the upper bolts of the wall bracket and replaced two bolts connecting the hoop of the seismic ring to the wall bracket. This activity restored the seismic ring to the required location. The divers performed ultra-sonic measurements of the wall bracket and discovered evidence of corrosion at multiple locations. The most excessive corrosion observed was located in the lower right portion of the bracket and resulted in the lower right corner of the bracket corroding so the bolt hole and corner was missing from approximately 35 percent of the circumference. Other locations did not have sufficient corrosion to adversely affect the structural integrity of the wall bracket. The two lower bolts for the wall bracket were corroded to the extent that their fasteners and most of the bolt threads were missing. These bolts were not replaced. The licensee performed an operability determination for the as-left condition of the seismic ring and declared the pump operable for this condition on August 15, 2009.

The inspectors did not identify an immediate safety concern for this issue because the licensee had taken corrective actions to repair the 2E SW pump seismic ring following discovery of the issue. Additionally, the licensee implemented interim compensatory measures to maximize the availability of potentially affected SW pumps pending completion of diver inspections that would determine the material condition of the remaining SW pump seismic rings.

The inspectors determined that in order to appropriately evaluate and disposition this issue of concern, additional inspection would be required to better understand: (1) the extent of condition associated with this issue (supported by the completion of diver inspections that were in progress at the end of the inspection period), and (2) the degree to which the reliability of plant equipment may have been adversely impacted as a result of the failure to monitor the affected components. This issue of concern was identified as URI 05000348,364/2009004-01 Failure to Implement Performance Monitoring of Service Water Pump Seismic Supports..

#### 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

##### a. Inspection Scope

The inspectors reviewed the following four activities to verify appropriate risk assessments were performed before 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.

- Unit 2, August 5, GREEN Risk Condition during 2C DG outage concurrent with Unit 2 4160V 'H' bus outage
- Unit 2, August 14, YELLOW Risk Condition during 2E SW pump diver inspection
- Unit 2, August 24, YELLOW Risk Condition during planned maintenance on Q2E11HCV603B concurrent with surveillance test of 2C DG
- Unit 1, September 8, RED Risk Condition during emergent repairs to 1A CCW pump mini-flow vent pipe.

##### b. Findings

No findings of significance were identified.

#### 1R15 Operability Evaluations

##### a. Inspection Scope

The inspectors reviewed the following four operability evaluations to verify they met the requirements of licensee procedures NMP-OS-007 and NMP-AD-012, ODs and

Functionality Assessments. The scope of this inspection also included a review of the technical adequacy of evaluations, adequacy of compensatory measures, and impact on continued plant operation.

- CR 2009109305, Failure of 2B SGAFW Isolation Valve to close
- CR 2009109849, Failure of circuit breaker Q2R15BKRDH01 to rack from “connect” position to “test” position during planned maintenance
- CR 2009110250, Calibration method of Foxboro transmitters using current measurements
- CR 2009110580, Exhaust gas leak on 2B EDG

b. Findings

No findings of significance 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-2-STP-23.8, CCW Valve In-service Test, following repairs to Q2P17V0288
- FNP-1-STP-23.2, 1B CCW Pump Quarterly Inservice Test, following equipment outage on Q1P17P0001B
- FNP-1-STP-22.20, TDAFW Pump Steam Admission Valves Air Accumulator Test, following repairs to Q1N12HV3235B
- FNP-2-STP-213.27, Main Steam to Atmospheric Relief Valve Control Q2N11PT3371C Loop Calibration, following repairs to the atmospheric relief valve controller (N2N11PC3371CA)
- FNP-2-STP-220.10, Vent Stack Flow Totalizer N2P41FT2879 Loop Calibration and Operation Test, following replacement for the flow transmitter
- FNP-0-IMP-429.1, Temperature Indicator Calibration (Generic), following out of tolerance temperature values on diesel driven fire pump (N1P43P002) water temperature indicator

b. Findings

No findings of significance were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors reviewed the following four 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 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 and attended selected briefings to determine if procedure requirements were met. Documents reviewed are listed in the Attachment.

Surveillance Tests

- FNP-1-STP-21.3, TDAFW Pump Steam Supply Valves Valve IST
- FNP-1-STP-22.23, TDAFW Pump Trip and Throttle Valve Mechanism and Indication Operability Test
- FNP-1-STP-80.1, DG 1B Operability Test

In-Service Test (IST)

- FNP-1-STP-22.16, TDAFW Pump Quarterly IST Test ( $T_{avg} \geq 547^{\circ}\text{F}$ ) with Preservice Test Appendix

b. Findings

Introduction. A Green, self-revealing NCV of TS 5.4.1, Procedures, was identified for failure to implement surveillance test procedure instructions for starting the Unit 1 TDAFW pump which resulted in an over-speed trip and inoperability of the pump.

Description. On August 14, 2009, the licensee authorized the start of a scheduled surveillance test for the Unit 1 TDAFW pump in accordance with FNP-1-STP-22.16. The surveillance procedure required, in part, that the TDAFW pump be started to demonstrate operability of the pump.

On August 15, 2009, the steam supply from the 1B SG to the TDAFW pump was isolated by closing the manual valve (Q1N12V006A) downstream of the air-operated steam supply valve (Q1N12HV3235A) as required by surveillance procedure instructions. The control room operator then started the pump by first opening the steam supply valve from the 1B SG (Q1N12HV3235A). Because the 1B SG steam supply had been isolated by a downstream manual valve as required earlier in the test procedure, no steam was being admitted to the TDAFW pump. The steam admission valve to the TDAFW pump (Q1N12HV3226) received an open demand signal when the steam supply valve from the B SG was opened to support starting of the pump. The control room operator then fully opened the steam supply valve from the 1C SG (Q1N12HV3235B) and full steam flow from the 1C SG was supplied to the TDAFW pump through the open steam admission valve. The sequence of valve operations as performed by the control room operator admitted steam to the TDAFW pump at a rate the governor valve could not respond to,

Enclosure

and an over-speed trip of the TDAFW pump occurred. The licensee declared the TDAFW pump inoperable when the trip and throttle valve closed until actions were completed to reset the trip and throttle valve approximately 22 minutes later. The licensee entered the issue into its CAP as CR 2009110308.

The inspectors reviewed procedure FNP-1-STP-22.16 and concluded the surveillance test procedure contained instructions requiring both steam supply valves to the TDAFW pump (Q1N12HV3235A and Q1N12HV3235B) to be opened simultaneously to prevent over-speeding of the TDAFW pump during performance of the test. The inspectors concluded the sequential manner the SG steam supply valves were operated as described above was not in accordance with established procedure and directly contributed to the TDAFW pump over-speed event.

Analysis. The failure to properly implement surveillance test procedure instructions for starting the Unit 1 TDAFW pump was a performance deficiency. This finding was greater than minor because it adversely affected the equipment performance attribute of the mitigating systems cornerstone objective ensuring the availability, reliability and capability of systems responding to initiating events to prevent undesirable consequences (i.e., core damage). This finding was assessed using the Phase 1 screening worksheet of the SDP and determined to be of very low safety significance (Green), because it did not result in an actual loss of safety function of a single train for greater than the TS allowed outage time and was not potentially risk-significant due to external events. The inspectors identified a cross-cutting aspect in the human performance area of work practices (H.4(b)). The licensee established procedure instructions requiring both steam supplies to the TDAFW pump be opened simultaneously to prevent over-speeding the pump, however, personnel did not follow those procedures.

Enforcement. TS 5.4.1 states, in part, written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in RG 1.33, Revision 2, Appendix A, February 1978. Section 8 of Appendix A to RG 1.33 recommends procedures for surveillance tests and requires implementing procedures for surveillance tests listed in the TS. Procedure FNP-1-STP-22.16 requires opening both steam supplies to the TDAFW pump simultaneously to prevent over-speeding the pump during performance of the test. Contrary to the above, on August 15, 2009, the licensee failed to simultaneously open both steam supplies to the TDAFW pump during the performance of FNP-1-STP-22.16 and an over-speed trip of the pump occurred. As a result of the over-speed trip, the licensee declared the TDAFW pump inoperable until actions were completed to reset the trip and throttle valve and return the pump to operable status approximately 22 minutes later. Because this failure to properly implement surveillance procedure test instructions has been entered into the CAP as CR 2009110308, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000348/2009004-02 Failure to Implement Surveillance Test Instructions to Prevent Over-Speed of the TDAFW Pump.

## Cornerstone: Emergency Preparedness (EP)

1EP2 Alert and Notification System Testinga. Inspection Scope

The inspector evaluated the adequacy of licensee's methods for testing the alert and notification system in accordance with NRC Inspection Procedure 71114, Attachment 02, "Alert and Notification System Evaluation". The applicable planning standard 10 CFR Part 50.47(b)(5) and its related 10 CFR Part 50, Appendix E, Section IV.D requirements were used as reference criteria. The criteria contained in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, was also used as a reference.

The inspector reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the alert and notification system on a biennial basis.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentationa. Inspection Scope

The inspector reviewed the licensee's Emergency Response Organization (ERO) augmentation staffing requirements and process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The qualification records of key position ERO personnel were reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection were reviewed to assess the effectiveness of corrective actions. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, "Emergency Response Organization Staffing and Augmentation System." The applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed various documents which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the ERO staffing and augmentation system on a biennial basis.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, revision 49 of the Farley Nuclear Plant Emergency Plan were implemented based on the licensee's determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspector conducted a sampling review of the Plan changes and implementing procedure changes made between March 1, 2008, and August 31, 2009, to evaluate for potential decreases in effectiveness of the Plan. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, "Emergency Action Level and Emergency Plan Changes." The applicable planning standard (PS), 10 CFR 50.47(b)(4) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed the corrective actions identified through the Emergency Preparedness program to determine the significance of the issues and to determine if repeat problems were occurring. The facility's self-assessments and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their emergency preparedness program. In addition, inspector reviewed licensee's self-assessments and audits to assess the completeness and effectiveness of all emergency preparedness related corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, "Correction of Emergency Preparedness Weaknesses." The applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the correction of emergency preparedness weaknesses on a biennial basis.

Enclosure

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

On August 12, 2009, the inspectors observed the licensee's response to an unannounced emergency drill. The inspectors evaluated licensee performance to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspections observed emergency response operation to verify event classification and notifications were performed in accordance with FNP-0-EIP-9.0, Emergency Classification and Actions. The inspectors used procedure NMP-EP-303.0, Drill and Exercise Standards, as the inspection criteria. The inspectors also attended the licensee critique of the drill to compare any inspector-observed weaknesses with those identified by the licensee in order to verify whether the licensee was properly identifying failures.

- August 12, simulated tornado which damaged the SWIS and the common high-voltage switchyard. The event resulted in a dual unit LOSP, resulting in the trip of both unit reactors, and loss of service air. The 1B EDG trip later in the simulation resulted in an upgrade of the emergency classification to a Site Area Emergency.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety (OS) and Public Radiation Safety (PS)

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring Instrumentation and Post-Accident Sampling Systems

During tours of the auxiliary building, Radiologically Controlled Area (RCA) exit points, and administrative building areas, the inspectors observed installed radiation detection equipment including selected area radiation monitors, personnel contamination monitors (PCM), portal monitors (PM), small article monitors (SAM), and whole body counter (WBC) equipment. During the tours, the adequacy of the equipment's physical location and material condition were evaluated.

From a review of selected records and discussions with cognizant licensee representatives, the inspectors evaluated completion and adequacy of equipment calibrations for area radiation monitors and continuous air monitors and assessed radiation monitoring system operability and reliability.

Enclosure

During equipment walk-downs, the inspectors observed functional checks of various fixed and portable radiation monitoring/detection instruments with a Health Physics Technician (HPT). The observations included source checks of PCM, PM, and SAM equipment. The inspectors reviewed calibration records and discussed the functional testing and testing intervals for selected PCM and PM equipment located at the RCA and protected area exits. PM equipment detection capabilities were demonstrated using a low-level mixed radionuclide source that was passed through the equipment. The operability and analysis capabilities of the WBC equipment were evaluated.

For selected portable survey instrumentation used in field tasks, the inspectors observed HPT selection of survey instruments and use of instruments during selected task coverage. Availability of portable instruments for licensee use was evaluated through observation of staged instruments, potential and on-going activities, and discussion with licensee personnel. For select frisker and portable survey instruments used in the field, the inspectors noted operability and verified calibration dates. Calibration data for selected portable instruments staged or recently used for coverage of radiation workers were also reviewed.

Operability and reliability of selected radiation detection instruments were reviewed against 10 CFR Part 20; Technical Specification (TS) Section 5.4, Procedures; Final Safety Analysis Report (FSAR) Chapters 11 and 12; and applicable licensee procedures. Documents reviewed during the inspection are listed in Sections 2OS3 of the Attachment.

#### Self-Contained Breathing Apparatus (SCBA) and Protective Equipment.

Selected SCBA units staged for emergency use in the Control Room and other locations were inspected for material condition and adequate bottle air pressure. The inspectors also reviewed monthly inspection records for selected SCBA units. In addition, certification records associated with supplied-air quality were reviewed and discussed.

Qualifications for staff responsible for testing and repairing SCBA equipment were evaluated through a review of selected training records. Selected Control Room operators were interviewed to determine their knowledge of available SCBA equipment locations, including availability of corrective lens inserts if needed. In addition, respirator qualification records were reviewed for selected licensee personnel.

Licensee activities associated with maintenance and use of respiratory protection equipment were reviewed against 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection; American National Standards Institute (ANSI)-Z88.2-1992, American National Standard for Respiratory Protection; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the Attachment.

#### Problem Identification and Resolution.

Selected Corrective Action Program (CAP) documents associated with instrumentation and protective equipment were reviewed and assessed. Inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in

accordance with NMP-GM-002, Corrective Action Program, Rev 8.0. Documents reviewed are listed in Section 2OS3 of the Attachment.

The inspectors completed the nine specified line-item samples detailed in Inspection Procedure (IP) 71121.03.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment

During inspector walk-downs, accessible sections of the liquid and gaseous radioactive waste (radwaste) and effluent systems were assessed for material condition and conformance with system design diagrams. The inspection included floor drain tanks, liquid waste system piping, monitor tanks, liquid radwaste monitors, plant vent effluent monitors, and associated airborne effluent sample lines. The inspectors interviewed licensee staff regarding radwaste equipment configuration, recent changes to radwaste systems, and effluent monitor operation.

The inspectors reviewed performance records and calibration results for selected radiation monitors, flowmeters, and air filtration systems. For effluent monitors Unit 1 (U1) RE-15 (Steam Jet Air Ejector), U1 RE-20A&B (Service Water), Unit 2 (U2) RE-14 (Plant Vent), and U2 RE-18 (Liquid Radwaste) the inspectors reviewed the last two isotopic calibration records. The last two surveillances on the U1 and U2 Auxiliary Building (rad-side) ventilation filtration systems also were reviewed. The inspectors evaluated out-of-service effluent monitors and compensatory action data for the period March 2007 – July 2009. In addition, plant vent sample line and vent duct flowrates were reviewed and discussed with chemistry staff to evaluate the adequacy of representative sampling.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; RG 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plants; TS Section 5; the Offsite Dose Calculation Manual (ODCM); and FSAR Chapters 9 and 11. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the Attachment.

Effluent Release Processing and Quality Control (QC) Activities

The inspectors reviewed licensee procedures for sample collection and directly observed collection of weekly airborne effluent samples from the U2 Plant Vent. Chemistry technician proficiency in collecting, processing, and counting the samples, as well as in preparing the applicable release permits was evaluated. The inspectors reviewed recent liquid and gaseous release permits including pre-release sampling results, effluent

Enclosure

monitor setpoints, and accuracy of offsite dose calculations. The inspectors also reviewed the 2007 and 2008 annual effluent reports to evaluate reported doses to the public and to review ODCM changes.

QC activities regarding gamma spectroscopy and beta-emitter detection were discussed with count room technicians and Chemistry Department supervision. For selected detection instruments the inspectors reviewed daily QC check records and associated trending graphs. In addition, results of the 2007 and 2008 radiochemistry cross-check program were reviewed.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I; and TS Section 5.4 Procedures and records reviewed during the inspection are listed in Section 2PS1 of the Attachment.

#### Problem Identification and Resolution

Selected CRs associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with procedure NMP-GM-002, Corrective Action Program, Rev 8.0. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Reviewed documents are listed in Section 2PS1 of the report Attachment.

The inspectors completed all three specified line-item samples detailed in IP 71122.01.

#### b. Findings

No findings of significance were identified.

### 2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

#### a. Inspection Scope

##### REMP Implementation

The inspectors observed selected environmental monitoring program sample collection and monitoring activities as specified in the licensee's Offsite Dose Calculation Manual (ODCM). The inspectors observed material condition and noted operability, including verification of sampling equipment flow rates/volumes, for the weekly airborne particulate filter and iodine cartridge change-outs at selected atmospheric sampling stations and for surface water samplers. The inspectors directly observed collection of control location milk samples and verified location and material condition of eight environmental thermoluminescent dosimeters. Land use census results, missed samples and changes to the ODCM and sample collection/processing activities were discussed with environmental technicians and knowledgeable licensee staff.

Enclosure

The inspectors reviewed calibration and maintenance surveillance records for the installed environmental air sampling stations air flow totalizer equipment. The inspectors also reviewed calendar year (CY) 2007 and CY 2008 Radiological Environmental Operating Reports, CY 2007 and CY 2008 inter-laboratory cross-check program results, and current procedural guidance for environmental sample collection and processing. Selected environmental measurements were reviewed for consistency with licensee effluent data and evaluated for radionuclide concentration trends. The inspectors independently verified detection level sensitivity requirements for surface water tritium and for particulate filter gross beta quantitative radionuclide analyses.

Procedural guidance, program implementation, quantitative analysis sensitivities, and environmental monitoring results were reviewed against 10 CFR Part 20; Appendix I to 10 CFR Part 50; TS Sections 5.4.1, 5.5.1, and 5.6; ODCM; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and the Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program - 1979. Documents reviewed are listed in Section 2PS3 of the Attachment.

#### Meteorological Monitoring Program

The inspectors toured the primary meteorological tower and observed local data collection equipment readouts. The inspectors observed the physical condition of the tower and its instruments and discussed equipment operability, maintenance history, and backup power supplies with responsible licensee staff. The inspectors evaluated transmission of locally generated meteorological data to the main control room operators. For the meteorological measurements of wind speed, wind direction and temperature, the inspectors reviewed applicable calibration records for applicable tower instrumentation and evaluated measurement data recovery for calendar years 2007 and 2008. In addition, the inspectors evaluated the accuracy of meteorological data transmission to the licensee's Emergency Offsite Facilities and to the NRC Operations Center.

Licensee procedures and activities related to meteorological monitoring were evaluated against: ODCM; FSAR; RG 1.23, Meteorological Monitoring Programs For Nuclear Power Plants, and ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites. Documents reviewed are listed in Section 2PS3 of the Attachment.

#### Unrestricted Release of Materials from the Radiologically Controlled Area (RCA)

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 also observed source check testing of these instruments and discussed equipment sensitivity, alarm set-points and release program guidance with licensee staff. The inspectors compared recent 10 CFR Part 61 results for the DAW waste stream with radionuclides used in calibration and check sources to evaluate the appropriateness and accuracy of release survey instrumentation. The inspectors also reviewed the last two calibration records for selected release point survey instruments.

Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Documents reviewed are listed in Sections 2OS3 and 2PS3 of the Attachment.

Problem Identification and Resolution

The inspectors reviewed selected CRs in the areas of environmental monitoring, meteorological monitoring, and release of materials. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with NMP-GM-002, Corrective Action Program, Rev 8.0. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Documents reviewed are listed in section 2OS3 and 2PS3 in the Attachment.

The inspectors completed all ten specified line-item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data for the 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.

Emergency Preparedness Cornerstone

- Emergency Response Organization Drill/Exercise Performance (DEP)
- Emergency Response Organization Readiness (ERO)
- Alert and Notification System Reliability (ANS)

For the review period, January 1, 2008, through June 30, 2009, the inspector examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspector verified the accuracy of the DEP through review of a sample of drill and event records. The inspector reviewed selected training records to verify the accuracy of the ERO PI for personnel assigned to key positions in the ERO. The inspector verified the accuracy of the PI for ANS reliability through review of a sample of the licensee's records of periodic system tests. Licensee procedures, records and other documents reviewed within this inspection area are listed in the Attachment.

Mitigating Systems Cornerstone

- Mitigating Systems Performance Indicator, Cooling Water Systems

Barrier Integrity Cornerstone

- Reactor Coolant System (RCS) Activity
- RCS Leakage

The inspectors reviewed samples of raw PI data, Licensee Event Reports (LERs), and Monthly Operating Reports for the period covering July 2008 through June 2009. 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.

Occupational Radiation Safety Cornerstone

The inspectors reviewed PI data collected from October 1, 2008, through June 30, 2009, for the Occupational Exposure Control Effectiveness PI. For the reviewed period, the inspectors assessed CAP records to determine whether HRA, VHRA, or unplanned exposures, resulting in TS or 10 CFR 20 non-conformances, had occurred during the review period. In addition, the inspectors reviewed selected personnel contamination event data, internal dose assessment results and ED alarms for cumulative doses and/or dose rates exceeding established set-points. The reviewed documents relative to this PI are listed in Sections 2OS3 and 4OA1 of the Attachment.

Public Radiation Safety Cornerstone

The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from October 1, 2008, through June 30, 2009. For the assessment period, the inspectors reviewed cumulative and projected doses to the public, out-of-service effluent radiation monitors and compensatory sampling data, and selected CRs related to Radiological Effluent Technical Specifications/ODCM issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in sections 4OA1 and 2PS1 of the Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems.1 Daily CR Reviews

As required by Inspection Procedure (IP) 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

Enclosure

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 two issues 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 2008105195, EDG Operability During Surveillance Testing
- CR 2008106454, Fleet Oversight Action For Review - Procedure Adherence Related Issues

b. Findings

Introduction. The NRC identified an issue of concern regarding the licensee's failure to translate EDG system design into surveillance test procedures that rendered LOSP load sequencers inoperable during the performance of those tests. This issue of concern will be characterized as an unresolved item (URI) pending further inspection to determine what evaluations were completed by the licensee prior to scheduling and performing surveillance tests during modes of plant operation that required the EDGs and emergency load sequencers to be operable.

Description. On May 16, 2008, the licensee completed a review of an engineering judgement regarding the operation of the LOSP circuits with a diesel generator operating in the test mode. The engineering review was being performed in response to industry OE that identified issues where a diesel undergoing surveillance testing would not respond as desired during an LOSP event. As a result of that analysis, the licensee concluded that during a LOSP event while the diesel is in test mode and paralleled with offsite power (such that the LOSP relays actuate prior to the degraded grid or under-frequency relays), a LOSP load shed would occur and the diesel would remain running with its output breaker closed onto the bus. However, the automatic load sequencer would not start safety-related loads because the logic of LOSP circuit verifies that the diesel output breaker is open prior to allowing the load start sequence. For the condition identified above, the diesel would remain running and connected to the bus without emergency loads energized because the sequencer would not load the diesel.

In response to the engineering analysis, the licensee entered CR 2008105195 into the CAP on May 24, 2008, and began declaring the EDGs inoperable while applying the 10 day completion time of condition B for TS 3.8.1, AC Sources – Operating, when the diesels were paralleled with the offsite power source during surveillance tests. The NRC

Enclosure

reviewed licensee actions in response to CR 2008105195 and the requirements of TS 3.8.1. The inspectors concluded that the licensee had identified a condition in which surveillance requirements for the load sequencer would not be satisfied in response to a design basis LOSP event. Therefore, the inspectors concluded that the 12 hour completion time for an inoperable automatic load sequencer as specified in condition G of TS 3.8.1 should be applied. The inspectors also concluded that previous performances of 24 hour EDG endurance surveillance runs exceeded the TS allowed outage time for an inoperable sequencer. As a result of the inspector's concerns regarding application of TS 3.8.1 condition G for an inoperable sequencer, the licensee deferred future performance of 24 hour EDG surveillance tests pending implementation of a design change in the EDG test circuit that would allow emergency loads to auto-start.

The inspectors determined that in order to appropriately evaluate and disposition this issue of concern, additional inspection would be required to better understand: (1) when the licensee began to schedule the performance of 24 hour EDG surveillance tests during plant modes of operation that required the emergency load sequencers to be operable, (2) what evaluation(s) for the schedule changes were performed by the licensee prior to the performance of those surveillance tests, and (3) whether or not the adequacy of those evaluations constituted a violation of regulatory requirements.

The inspectors did not identify an immediate safety concern for this issue because: (1) the licensee had taken actions to modify surveillance test procedures to provide guidance for the operators to mitigate an LOSP condition during surveillance tests of the EDGs and (2) the licensee had deferred 24 hour EDG surveillance tests that would exceed the allowed outage time for an inoperable load sequencer pending implementation of a design change in the EDG test circuit that would allow emergency loads to auto-start in response to an LOSP event. This issue of concern was identified as URI 05000348,364/2009004-03, Load Sequencer Operability during EDG Surveillance Tests.

c. Observations

The inspectors reviewed CR 2008106454 and determined the licensee accurately captured internal assessments, Institute of Nuclear Power Operations (INPO), and recent NRC observations related to procedural adherence issues in a timely manner. The inspectors reviewed the licensee's evaluation and disposition of issue for reportability and the licensee apparent cause determination. The licensee's cause determination identified inadequate program monitoring by management, lack of clear or conflicting management expectations, and lack of accountability. The licensee performed a common cause analysis identifying contributors to procedural adherence to be procedure quality, less than adequate work instructions, perceived schedule pressures and lack of management oversight and re-enforcement. The licensee also performed a broadness review identifying that lack of procedural compliance occurred in all groups and types of procedures over the past few years, including WOs and radiation work permits. The inspectors determined the licensee identification of root and contributing causes of the problem and classification and prioritization of the resolution of the problem were accurate. The inspectors reviewed the licensee-proposed

Enclosure

corrective actions including prompt coaching reinforcing management expectations regarding procedure use and adherence, development and delivery of a presentation by key site managers related to procedure use and adherence, future safety culture assessments, periodic reviews of departmental procedures deemed “information use” for inclusion in departmental training. The inspectors determined the licensee’s corrective actions were appropriate to address all identified causes except lack of accountability. The inspectors identified corrective actions of each site department to develop examples of good accountability to be included in departmental training. The inspectors have noted increased focus at the site related to accountability, not credited in the condition report. The licensee plans to perform an effectiveness review of its corrective actions at a future date. The inspectors plan to evaluate this review and focus on the licensee’s effectiveness with a specific focus on accountability.

#### 4OA3 Event Follow-up

##### .1 (Closed) LER 05000348/2009-001-00: EDG Auto Start due to Inadvertent Relay Actuation

###### a. Inspection Scope

On February 16, 2009 at 4:55 PM, the 1C EDG received an auto start signal due to de-energization of 4160 volt bus 1H. The bus was de-energized when a material handling cart inadvertently struck a relay cabinet containing the bus protective relays. The issue was documented in the licensee’s CAP as CR 2009101710. The inspectors performed a follow-up inspection of the event to gain understanding of the conditions leading up to the event, and actions taken by the licensee following the event. Additionally, the inspectors reviewed the root cause report to assess the detail and thoroughness of the evaluation and proposed corrective actions.

###### b. Findings

This LER is closed with one finding identified.

Introduction. A Green, self-revealing finding was identified for a failure to implement procedures to ensure temporary equipment carts were immobilized in order to prevent inadvertent contact with the Unit 1 ‘H’ bus protective relay cabinet. This failure to implement procedures governing the proper storage and restraint of temporary equipment in the vicinity of the 1H relay cabinet resulted in inadvertent contact with the cabinet and actuation of protective relays rendering the 1C EDG inoperable.

Description. On February 16, 2009 an equipment outage was in progress for the 1-2A EDG. Disassembly of the diesel was ongoing and personnel were moving parts from the 1-2A EDG room and adjacent switchgear room. While pulling a temporary equipment cart toward the 1-2A EDG room, personnel lost control of the cart while negotiating a turn and bumped another cart located against the switchgear room wall in close proximity to the 1H bus protective relay cabinet. This second cart struck a third cart located immediately adjacent to the 1H relay cabinet. The third cart contained a large cooler with ice and drinks which made physical contact with the 1H relay cabinet.

Enclosure

Because of the mechanical shock due to the inadvertent contact with the 1H bus relay cabinet, the phase 2 differential relay actuated the 1H bus lockout relay. Actuation of the 1H bus lockout relay caused the normal supply breaker (DF-13) to open and de-energized the 1H bus. The under voltage condition on the 1H bus initiated an automatic start of the 1C EDG. Because power was not lost to the 1F bus, the 1C EDG output breaker did not attempt to close. However, with the 1H bus lockout relay actuated, the 1C EDG would not have been available to power safety-related loads on the 1F bus in response to a LOSP event. The licensee declared the 1C EDG inoperable for Unit 1 until actions were completed to reset the protective relays for the 1H bus, to restore power to the 1H bus by closing DF-13, and to remove the temporary equipment carts from the vicinity of the 1H protective relay cabinet. The licensee entered the issue into its CAP as CR 2009101710.

The inspectors reviewed the licensee's root cause analysis of the event and concluded the licensee had not taken actions to immobilize the temporary equipment carts left adjacent to the 1H bus relay cabinet as required by station procedures. Specifically, procedure FNP-0-ACP-35.3, "Administrative Control of Tools and Equipment Left Unattended in the Plant" requires in part that "All wheeled items left in safety-related areas shall not be touching existing equipment and shall be made incapable of rolling by removing the wheels, adding brakes, blocking wheels, or other means." The inspectors also concluded the temporary equipment carts were placed close to the 1H relay cabinet at the beginning of the 1-2A EDG equipment outage starting on February 15, 2009.

Analysis. The failure to implement procedures used to ensure temporary equipment carts were immobilized to prevent inadvertent contact with the Unit 1 'H' bus protective relay cabinet was a performance deficiency. This finding was greater than minor because it adversely affected the equipment reliability attribute of the mitigating systems cornerstone objective ensuring the availability, reliability and capability of systems responding to initiating events to prevent undesirable consequences (i.e., core damage). This finding was assessed using the Phase 1 screening worksheet of the SDP and determined to be of very low safety significance (Green), because it did not result in an actual loss of safety function of a single train greater than the TS allowed outage time, and did not involve the total loss of any safety function, identified by the licensee through a PRA, IPEEE, or similar analysis, contributing to external event-initiated core damage accident sequences (i.e., initiated by a seismic, flooding, or severe weather event). The inspectors identified a cross-cutting aspect in the human performance area of work practices component (H.4(b)). The licensee had established a procedure requiring all wheeled items left in safety-related areas be made incapable of rolling and personnel did not follow the procedure. The procedure the licensee failed to implement was not safety related, therefore, the performance deficiency did not result in a violation of regulatory requirements.

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement since the procedure the licensee failed to implement was not safety-related. Because this finding does not involve a violation of a regulatory requirement and has very low safety significance, it is identified as FIN 05000348/2009004-04, Failure to Implement Procedures to Used to Prevent Seismic Interaction with Safety-Related Equipment.

Enclosure

.2 (Closed) LER 05000348/2008-003-00: EDG 1-2A Lube Oil Heat Exchanger Leak

a. Inspection Scope

On July 21, 2008, the licensee discovered in-leakage of SW into the 1-2A EDG lube oil heat exchanger. The EDG was declared inoperable because of the excessive leakage. The licensee also had the Unit 1 Train B EDG OOS for planned maintenance to its exhaust system. The combination of both diesels being OOS required entry into TS 3.8.1 Conditions E and F. Condition F required Unit 1 to enter Mode 3 within 6 hours of failing to meet Condition E, allowing 8 hours to restore one of the above two diesels. The licensee commenced a unit shutdown at 5:41 AM CST on July 22, 2008, and reached Mode 3 at 10:46 AM CST.

Eddy current and pressure testing was performed on the lube oil HX resulting in identifying two leaking tubes. The licensee plugged those tubes and an additional four tubes as a precautionary measure. The HX was hydrostatically tested following tube plugging with no indicated leakage. The entire diesel lube oil sump contents were drained and the engine cleaned to remove any residual water. EDG 1-2A was returned to service on July 29, 2008. The licensee performed analysis of tube extracted from the HX in February, 2009. The analysis indicated the leaking tube and four other tubes experienced phenomena similar to inlet end erosion occurring at the termination of the Plastacor lining. The analysis discovered no evidence of other corrosion mechanisms on either the internal or external surfaces of the heat exchanger tubes.

The inspectors performed a follow-up inspection of the event to gain an understanding of the conditions leading up to the event and actions taken by the licensee following the event. Additionally, the inspectors reviewed the root cause report to assess the detail and thoroughness of the evaluation and proposed corrective actions.

b. Observations

The inspectors reviewed WOs documenting the original application of epoxy coating identified as "Plastacor" to the jacket water and lube oil HXs of the Farley EDGs. The inspectors noted the licensee utilized vendor personnel and procedures to apply the coating in 3 mil layers. Each successive layer was extended over the previous layer by approximately one half inch to create a "feathered" edge to reduce flow turbulence. The documents did not indicate any misapplication of the Plastacor. The licensee originally installed the coating to mitigate the effects of "tube end erosion" on its DG HXs. The inspectors reviewed the licensee root cause determination and vendor analysis which indicated the leaking tube and four other tubes experienced phenomena similar to inlet end erosion occurring at the termination of the Plastacor coating. The inspectors evaluated photographs of the cut-away view of the damaged tube and reached the same conclusion as the vendor. The inspectors determined the application of Plastacor had the effect of moving the zone of influence for "tube end erosion" inward approximately six inches. Additionally, the inspectors noted in the cut-away, the termination point of the Plastacor had "bulge." The inspectors did not discover any evidence supporting a determination of the cause of the "bulge." The licensee determined the presence of this

Enclosure

“bulge” would have caused additional turbulence which may have influenced the tube flaw.

Based upon vendor analysis and engineering judgment, the licensee decided to apply Plastacor coating inward an additional six inches so the inlet ends of its DG HXs would have 12 inches of Plastacor coating. The inspectors determined this interim corrective action was sufficient based upon the licensee’s plan to replace the HX tube with a stronger material within the next two years. No findings of significance were identified and no violation of NRC requirements occurred. 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 inspectors’ normal plant status reviews and inspection activities.

###### b. Findings

No findings of significance were identified.

##### .2 (Closed) URI 05000348,364/2009006-02: Degraded Emergency Air System Conditions

###### a. Inspection Scope

During the component design basis inspection performed January 26 – February 27, 2009, the team identified an unresolved item (URI) related to degraded emergency air system conditions due to inadequate performance monitoring and maintenance of the emergency air system. During the inspection, the licensee performed testing to assess the condition of the system and identified that the system was degraded. The item was unresolved pending further inspection and interface with the licensee to determine the extent of condition and impact from the degraded emergency air system conditions.

###### b. Findings

Introduction: The inspectors identified a Green NCV of very low safety significance involving a violation of 10 CFR 50.65(a)(1), Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, for the licensee’s failure to monitor and maintain the emergency air system’s capability to operate the steam generator atmospheric relief valves (ARV) and turbine driven auxiliary feedwater

(TDAFW) pump steam admission valves. The emergency air system components had not been adequately maintained since plant start-up testing in 1977 and 1981 for Units 1 and 2.

Description: The emergency air system was scoped into the station maintenance rule (MR) program (FNP-0-M-87, Maintenance Rule Scoping Manual) in 1994. The MR scoping document stated that the emergency air system provided a mitigating function to prevent core damage and radioactive release by providing back-up air to the ARVs and the TDAFW steam admission valves to allow the cooldown of the reactor coolant system. The use of the emergency air system for these purposes was directed by the emergency operating procedures. The station's functional system description for Instrument Air (A-181012) stated that the ARVs and TDAFW steam admission valves shall be provided with an emergency air supply. The UFSAR, Section 10.3.8, Main Steam Atmospheric Power Relief Valves, stated that in the event that a high-energy line break prohibits operator access for local operations of the power relief valves with the simultaneous loss of offsite power and valve air supply, an alternate air supply consisting of two seismic category I air compressors (emergency air compressors) was provided for remote operation of the ARVs.

The inspectors noted that although the emergency air compressors were periodically started and run for approximately one hour to an isolated header, the flow path between the emergency air compressor and the end use components (ARVs and TDAFW) was not verified. The inspectors requested maintenance and operational documentation that would provide reasonable assurance that the emergency air system could perform the functions stated above. The components downstream of the receiver were isolated during testing. The downstream components that were not operated or maintained since 1977 and 1981, for Units 1 and 2 respectively, included piping, check valves, manual valves, pressure control valves, three-way solenoid valves, pressure gages, and air regulators. The licensee initiated CR 2009101539, to document that the functional capability of the emergency air system had not been demonstrated since start-up testing.

Following identification of this issue, the licensee performed a test to verify the flow path between the emergency compressors and the end use components for both trains of each unit. The test identified a blocked flow path due to a seized closed check valve (NV075A) in the Unit 1, train 1A emergency air header downstream of the compressor. The licensee's investigation of the check valve determined that the valve failure was caused by rust build-up inside this piston type check valve. Each unit had five of these check valves in the emergency air start system.

The team concluded that a common cause vulnerability of the emergency air systems existed for both units related to the system air quality and degradation of the piping. The system contained carbon steel piping, did not include dryers or filters and was subject to moisture in stagnant piping; conditions that would contribute to the formation and transport of rust. In the equipment history, the inspectors noted two previous indications of degraded piping conditions. Two Unit 2 work orders (WOs 2062451701 and 2082451701) documented the repair of seized (stuck open) check valves (NV075A and NV075B) in July 2006 and August 2008. The WOs documented the cleaning of rust

Enclosure

from the valve internals. A stuck open check valve could result in inadequate air flow being provided to downstream components or could allow air from the opposite train to be diverted away from the SG ARVs and TDAFW steam admission valves. Additionally, the rust in the degraded piping could be transported to the end use components and adversely impact their operation. In the week following the onsite CDBI, the licensee performed piping internal inspections which provided additional indications of common cause vulnerability due to degraded piping in both units as well as an additional seized check valve (NV075B).

The inspectors identified no immediate safety concern because the end use components were normally supplied by the instrument air system via a different flow path with one of the non-safety instrument air compressors supplied by the emergency diesel generator. Additionally the station had the capability for local-manual operation of the end use components.

Analysis: The performance deficiency was the station's failure to monitor and maintain the emergency air system's capability as required by the maintenance rule (10 CFR 50.65). This finding is more than minor because it is associated with the equipment performance attribute and affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to preclude undesirable consequences (i.e. core damage). Specifically, lack of adequate monitoring and maintenance contributed to the development and failure to identify, degraded emergency air system reliability and capability. The inspectors' SDP Phase 2 assessment concluded that the failure of Unit 1 emergency air train 1A represented an actual loss of safety function of one or more non-Tech Spec trains of equipment designated as risk-significant per 10 CFR 50.65, for greater than 24 hours, therefore an SDP Phase 3 assessment was required.

A Phase 3 Significance Determination was completed and characterized the performance deficiency as very low safety significance (Green). Critical assumptions associated with the analysis included:

- Emergency Air System (EAS) Discharge check valve 75A out of service closed for the entire exposure time
- EAS Compressor 1B out of service for 9 days
- An increased failure to open probability for discharge check valves 75A & B
- Consistent with the increase independent failure probability, an increased common cause contribution for discharge check valves 75A & B failing to open
- Consistent with test results, an increased EAS/normal instrument air boundary check valve failure probability (16A, B, C)
- Use of the manual hand wheel on the Atmospheric Relief Valves was credible for all but the Steam line Break Outside of Containment accident
- One year exposure time

The dominant accident sequence involved a Steam Generator Tube Rupture followed by a failure of the normal Instrument Air System and the subsequent failure of EAS. Without an air system the ability to remotely control the ARVs and depressurize was lost.

Enclosure

Then operators failed to manually depressurize using ARV manual hand wheels, leading to core damage.

The inspectors identified a cross-cutting aspect in the corrective action program in the area of problem identification and resolution in that the station failed to thoroughly evaluate problems such that the resolutions address causes and extent of condition as necessary. Specifically, when repeated stuck closed check valves were identified and repaired in 2006 and 2008, the licensee failed to assess the potential for system degradation [P.1(c)].

Enforcement: 10 CFR 50.65(a)(1) states, in part, that licensee's shall monitor the performance or condition of structures, systems, and components against licensee established goals, in a manner sufficient to provide reasonable assurance that such components are capable of fulfilling their intended function. Contrary to the above, the licensee failed to monitor the performance or condition of a system in a manner sufficient to provide reasonable assurance such that the system is capable of fulfilling its intended function. The licensee failed to perform appropriate predictive or performance monitoring to provide reasonable assurance that the emergency air system was capable of providing air to the Unit 1 and 2 TDAFW steam admission valve and ARVs. Specifically, since 1995, when the emergency air system was classified as being within the scope of the maintenance rule monitoring program the licensee had not periodically maintained or operated the components required to provide air to the ARVs and TDAFW pump as demonstrated by the air system check valve failure in February 2008. Because this finding is of very low safety significance and because it was entered into the licensee's corrective action program as CR 2009101539 it is considered a non-cited violation consistent with Section VI.A.1 of the NRC enforcement Policy: NCV 05000348,364/2009004-05, Failure to Monitor and Maintain the Capability of the Emergency Air System.

.3 (Closed) NRC Temporary Instruction (TI) 2525/175, Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review

The inspectors completed Temporary Instruction TI 2515/175, Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review. Appropriate documentation of the results was provided to NRC, HQ, as required by the TI. This completes the Region II inspection requirements for this TI for Farley Nuclear Plant.

.4 (Closed) NRC Temporary Instruction (TI) 2515/173 Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

a. Inspection Scope

The inspectors reviewed elements of the licensee's environmental monitoring program to evaluate compliance with the voluntary Groundwater Protection Initiative (GPI) as described in Nuclear Energy Institute (NEI) 07-07, Industry Ground Water Protection Initiative – Final Guidance Document, August 2007 (ADAMS Accession Number ML072610036). Inspectors interviewed personnel, performed walk-downs of selected areas, and reviewed the following items:

Enclosure

- Records of the site characterization of geology and hydrology.
- Evaluations of SSCs that contain or could contain licensed material and evaluations of work practices that involved licensed material for which there is a credible mechanism for the licensed material to reach the groundwater.
- Implementation of an onsite groundwater monitoring program to monitor for potential licensed radioactive leakage into groundwater.
- Procedures for the decision making process for potential remediation of leaks and spills, including consideration of the long term decommissioning impacts.
- Records of leaks and spills recorded, if any, in the licensee's decommissioning files in accordance with 10 CFR 50.75(g).
- Licensee briefings of local and state officials on the licensee's groundwater protection initiative.
- Protocols for notification to the local and state officials and to the NRC regarding detection of leaks and spills.
- Protocols and/or procedures for thirty-day reports if an onsite groundwater sample exceeds the criteria in the radiological environmental monitoring program.
- Groundwater monitoring results as reported in the annual effluent and/or environmental monitoring report.
- Licensee and industry assessments of implementation of the groundwater protection initiative. (Note the NEI audit of GPI implementation was in-progress at the time of the inspection but unavailable for NRC review).

b. Findings

No findings of significance were identified.

The inspectors noted that the licensee has not completely implemented the communication requirements of NEI 07-07 Objective 2.1, "Stakeholder Briefing". Although the licensee has made initial contact with state representatives, no effort to identify and brief local stakeholders has been made. The licensee has entered this issue into their corrective action program as CR 2009111874. This completes the Region II inspection requirements.

**4OA6 Meetings, Including Exit**

On October 8, 2009, and on October 29, 2009, the NRC presented the inspection results to Mr. John Horn, Mr. Howard Mahan and members of your staff who acknowledged the findings. The NRC confirmed proprietary information was not provided or examined during the inspection.

On September 18, 2009, the lead emergency preparedness inspector presented the inspection results to Mr. J. Horn and other members of your staff. The inspector confirmed that any proprietary information was provided during the inspection was returned.

On August 10, 2009, the inspectors discussed preliminary results of the onsite radiation protection inspection with Mr. R. Johnson, Site Vice President, and other responsible staff. The inspectors noted that proprietary information was reviewed during the course of the inspection but would not be included in the documented report. During a September 24, 2009, teleconference with H. Mahan, the inspectors discussed final disposition of issues associated with the adequacy of neutron monitoring instrumentation calibrations, control room respiratory protection equipment, ERDS data transmission to the NRC Headquarters Operations Center, and implementation of the ground water monitoring program. No findings of significance were identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee personnel

K. Armstrong, Emergency Preparedness Supervisor  
S. Brown, Health Physics Support Supervisor  
C. Collins, Plant Manager  
A. Gray, Performance Improvement Supervisor  
B. Griner, Engineering Support Manager  
D. Hall, Operations Training Supervisor  
P. Hayes, Engineering Director  
D. Hobson, Operations Superintendent  
L. Hogg, Security Manager  
J. Horn, Site Support Manager  
J.R. Johnson, Site Vice President  
T. Livingston, Chemistry Manager  
H. Mahan, Principal Licensing Engineer  
R. Martin, Technical Services Manager  
B.D. McKinney, Licensing Supervisor  
C. Medlock, Site Design Manager  
W. Oldfield, Fleet Oversight Supervisor  
C. Peters, Health Physics Manager  
L. Smith, Assistant Maintenance Manager  
R. Wells, Outage and Scheduling Manager

#### Southern Company

Mary Beth Lloyd, Southern Nuclear Operating Company

#### NRC personnel

Scott M. Shaeffer, Chief, Branch 2, Division of Reactor Projects  
E. Crowe, Senior Resident Inspector

### **LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED**

#### Opened

05000348,364/2009004-01	URI	Failure to Implement Performance Monitoring of Service Water Pump Seismic Supports (Section 1R12)
05000348,364/2009004-03	URI	Load Sequencer Operability during EDG Surveillance Tests (Section 4OA2.2)

#### Opened and Closed

05000348/2009004-02	NCV	Failure to Implement Surveillance Test Instructions to Prevent Over-Speed of the TDAFW Pump (Section 1R22)
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05000348/2009004-04 FIN Failure to Implement Procedures Used to Prevent Seismic Interaction with Safety-Related Equipment (Section 4OA3.1)

05000348,364/2009004-05 NCV Degraded Emergency Air System Conditions (Section 4OA5.2)

Closed

05000348,364/2009006-02 URI Degraded Emergency Air System Conditions (Section 4OA5.2)

05000348/2009-001-00 LER EDG Auto Start due to Inadvertent Relay Actuation (Section 4OA3.1)

05000348/2008-003-00 LER Emergency Diesel Generator 1-2A Lube Oil Heat Exchanger Leak (Section 4OA3.2)

05000348,364/2515/175 TI Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review (Section 4OA5.3)

05000348,364/2515/173 TI Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative (Section 4OA5.4)

Discussed

None

## LIST OF DOCUMENTS REVIEWED

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

#### Condition Reports:

2007102121, 2008105884, 2008108021, 2009101416, 2009102314, 2009103283, 2009103407, 2009103458

#### Action Items:

2007201458, 2008205196

#### Documents:

A-181000, Component Cooling Water System Functional System Description, Version 23.0

A-181001, Service Water System Functional System Description, Version 53.0

A-181010, Auxiliary Feedwater System Functional System Description, Version 19.0

FSAR Section 9.2, Station Cooling Water Systems

FSAR Section 6.5, Auxiliary Feedwater System

Memo from M. Ludlam to File, "Plant Joseph M. Farley Response to NRC IN 2008-13: Main Feedwater System Issues and Related 2007 Reactor Trip Data", dated October 22, 2008

System Health Report, Auxiliary Feedwater and Safety Related Aux Steam, 4<sup>th</sup> Quarter 2008

System Health Report, Auxiliary Feedwater and Safety Related Aux Steam, 1<sup>st</sup> Quarter 2009

System Health Report, Auxiliary Feedwater and Safety Related Aux Steam, 2<sup>nd</sup> Quarter 2009

#### Drawings:

D-170119, Sheet 1, Version 34.0

D-170119, Sheet 2, Version 46.0

D-170119, Sheet 3, Version 17.0

D-172701, Sheet 1, Version 5.0

D-175002, Sheet 1, Version 48.0

D-175007, Sheet 1, Version 30.0

D-177001, Sheet 1, Version 20.0

D-200013, Sheet 2, Version 22.0

D-205002, Sheet 1, Version 31.0

D-207001, Sheet 1, Version 18.0

#### Procedures:

FNP-0-SOP-0.0, General Instructions to Operations Personnel, Version 127.0

FNP-1-SOP-22.0, Auxiliary Feedwater System, Version 62.0

FNP-2-SOP-24.0, Station Service Water, Version 62.0

FNP-2-SOP-36.0, Plant Electrical Distribution Line-up, Version 8.0

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

#### Drawings:

A-508650, Sheet 20, Version 13.0

A-508650, Sheet 34, Version 2.0

A-508651, Sheet 8, Version 5.0

A-509018, Sheet 32, Version 7.0

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

#### Documents:

Licensed Operator Continuing Training Simulator Exercise Guide, OPS-56400A LOCT 08-10 Cycle 8, High Intensity Training, 09-S804, dated August 24, 2009

#### Procedures:

FNP-0-EIP-9.2, Emergency Classification, Version 7.0  
 FNP-1-AOP-2.0, Steam Generator Tube Leakage, Version 33.0  
 FNP-1-AOP-16.0, CVCS Malfunction, Version 14.0  
 FNP-1-AOP-17.0, Rapid Load Rejection, Version 21.0  
 FNP-1-AOP-19.0, Malfunction of Rod Control System, Version 26.0  
 FNP-1-AOP-100, Instrumentation Malfunction, Version 8.0  
 FNP-1-EEP-0, Reactor Trip or Safety Injection, Revision 37  
 FNP-1-IMP-213.12, Steam Header Pressure N1C24PT0464, Version 17.0

### **Section 1R12: Maintenance Rule Effectiveness**

#### Condition Reports:

2003000761, 2008109247, 2008110018, 2008111973, 2008112544, 2008110780, 2008111271, 2008111819, 2008112727, 2008112741, 2008113823, 2008113825, 2009101227, 2009101467, 2009101482, 2009101581, 2009102359, 2009102437, 2009102485, 2009103320, 2009104608, 2009106299, 2009107856, 2009109329, 2009109700, 2009109873, 2009109992, 2009110308, 2009110310, 2009110311, 2009110313, 2009110319, 2009110325

#### Action Items:

2003201083, 2003201084, 2004201531, 2004204320

#### Documents:

FNP-09-0051-ES, June, 2009 Maintenance Rule Report, dated 7/31/2009  
 FNP-09-0056-ES, July, 2009 Maintenance Rule Report, dated 8/28/2009  
 SC-87-904-001, Service Water Pumps – Seismic Supports, Version 1.0  
 Seismic Stress Analysis 08C02145/49, Appendix F, Seismic Support Gap of 0.1985” to Control over Differential Building Displacements, dated 10/31/2006  
 FNP-0-ETP-1007, Service Water Wet Pit Cleanup, Version 8.0 through 10.0  
 FNP-0-M-87, Maintenance Rule Scoping Manual, Version 20.0  
 FNP-2-MP-42.1, Removal, Installation and Alignment of Johnston Service Water Pumps, Version 1.0  
 SNC Memo FNP 4-7, J. Aufdenkampe to R. Martin, Farley Nuclear Plant – Unit 2 Plant Service Water Seismic Supports, dated August 21, 2009  
 Unit 2 Control Room Logs, dated August 2, 2009  
 A181001, Functional System Description – Service Water System, Version 53.0  
 Farley FSAR, Section 9.2.1.4, Tests and Inspections, Revision 22  
 Certificate of Calibration 13206, Parker Instrument, Cygnus 1 S/N 4501, dated May 10, 2009

Drawings:

U-209741, Sectional Illustration Service Water Pumps, Revision 3

Work Orders:

1072825202, 1072832201, 1090094001, 2051571403, 2061820801, 2082054901, 2082197601, 20822446801, 2082258201, 2082478601, S092208301, S041864601

**Section 1R15: Operability Evaluations**Condition Reports:

2009109305, 2009109849, 2009110250, 2009110580, 2009107823, 2009105496, 2009107873

Drawings:

D-177001, Sheet 1, Version 20.0

D-205007, Sheet 1, Revision 21.0

D-207001, Sheet 1, Version 18.0

Documents:

Farley TS 3.8.9, Distribution Systems – Operating

Farley SR 3.8.9.1, Distribution Systems – Operating

Farley TS 3.8.9 Bases, Distribution Systems – Operating

Farley SER, Supplement 4, Section 8.3.1, A-C Power System, dated September 1980

Procedures:

FNP-0-SOP-0.0, General instructions to Operations Personnel, Version 124.0

Work Order:

2092116101, 1091912801, 1091915501

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

2009110151, 2009103283, 2009106933, 2008104507

Documents:

D-205002, P&ID Unit 2 Component Cooling Water System, Sheet 2, Version 19.0

2-DT-09-P17-00503, Clearance Tag List, Revision 2

Procedures:

FNP-0-MP-18.3, Kerotest Check Valves Inspection and Rework, Version 1.0

FNP-2-STP-23.8, Component Cooling Water Valve In-service Test, Version 36.0

FNP-1-STP-22.20, TDAFW Pump Steam Admission Valves Air Accumulator Test, Version 11.0

FNP-1-STP-23.2, 1B Component Cooling Water Pump Quarterly Inservice Test, Version 37.0

FNP-1-IMP-210.3, Component Cooling Water 1B Heat Exchanger Inlet Flow Loop Calibration  
Q1P17FT3043B

FNP-2-STP-213.27, Main Steam to Atmospheric Relief Valve Control Q2N11PT3371C Loop  
Calibration

FNP-2-STP-220.10, Vent Stack Flow Totalizer N2P41FT2879 Loop Calibration and Operation Test, Version 16.0

FNP-0-IMP-429.1, Temperature Indicator Calibration (Generic), Version 10.0

Work Orders:

99M0306601, 2080093601, 2092216701, 2041442501, 107504201, 1063162401, 10909843301, 2063135701, 2091555501, 1080999501, S062489701

**Section 1R22: Surveillance Testing**

Condition Reports:

2009107314

Documents:

OD 09-07, Q1R43A502 Emergency Diesel Generator 1B, Version 1.0

Procedures:

FNP-0-ACP-52.1, Guidelines for Scheduling of On-Line Maintenance, Version 52.0

FNP-1-STP-21.3, TDAFWP Steam Supply Valves Valve Inservice Test, Version 18.0

FNP-1-STP-22.16, Turbine Driven Auxiliary Feedwater Pump Quarterly Inservice Test (TAVG  $\geq$  547° F) With Preservice Test Appendix, Version 50.0

FNP-1-STP-22.23, Turbine Driven Auxiliary Feedwater Pump Trip and Throttle Valve Mechanism and Indication Operability Test, Version 12.0

FNP-1-STP-80.1, Diesel Generator 1B Operability Test, Version 46.0

Work Orders:

1080393101, 1080393201, 1080393301, 1082031901, 1082229101, 2082298401

**Section 1EP2: Alert and Notification System Testing**

Procedures and Manual

FNP-0-TCP-53.0, ANS Testing and Maintenance, Rev. 4

FNP-0-TCP-28.1, FNP Tone Alert Radio Distribution and Maintenance, Rev. 4  
13575, Whelen WPS 4000 series manual, 2001

Records and Data

Records of Silent, Full Cycle, and Growl ANS testing -

Selected documentation of ANS repair and annual preventative maintenance conducted in accordance with EPFAM section 3.3 -

**Section 1EP3: Emergency Response Organization (ERO) Augmentation**

Procedures

FNP-0-EIP-8.1, Emergency Phone Directory, Rev. 9

FNP-0-EIP-8.2, Plant Personnel Home Telephone Directory, Rev. 4

NMP-EP-001, Corporate Emergency Response Organization (ERO), Rev. 6

Records and Data

Crew 2 Drill Self Assessment Drill Report, December 04, 2008  
 Training Exercise Report, February 12, 2008  
 Annual Exercise Report, March 12, 2008  
 Crew 01 Drill Report, August 10, 2009

**Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes**Change packages for Plans and Procedures

FNP-0-EP-0.0, FNP Emergency Plan, Rev. 49  
 FNP-0-EIP-0.0, Emergency Organization, Rev. 22  
 FNP-0-EIP-3.0, Duties of the Emergency Director, Rev. 17  
 FNP-0-EIP-4.0, Health Physics Support to the Emergency Plan, Rev. 38  
 FNP-0-EIP-5.0, Maintenance Support to the Emergency Plan, Rev. 12  
 FNP-0-EIP-6.0, TSC Setup and Activation, Rev. 41  
 FNP-0-EIP-8.3, Communications Equipment Operating Procedures, Rev. 12  
 FNP-0-EIP-9.0, Emergency Actions, Rev. 60  
 FNP-0-EIP-9.1, Automated Dose Method, Rev. 11  
 FNP-0-EIP-9.2, Emergency Classification, Rev. 7  
 FNP-0-EIP-9.3, Personal Computer-Automated Dose Assessment Methods, Rev. 20  
 FNP-0-EIP-10.0, Evacuation and Personnel Accountability, Rev. 38  
 FNP-0-EIP-16.0, Emergency Equipment and Supplies, Rev. 54

**Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies**Audits and Self-Assessments

F-EP-2009, Fleet Oversight Audit of Emergency Preparedness, April 6, 2009  
 J-EP-2008, Joint Fleet Oversight Audit of Emergency Preparedness, March 27, 2008  
 C-EP-2009 Fleet Oversight Audit of Plants Farley, Hatch and Vogtle Offsite Emergency Preparedness Support, March 25, 2009  
 C-EP-2007, Quality Assurance Audit of Plants Farley, Hatch and Vogtle Offsite Emergency Preparedness Support, March 20, 2007  
 C-EP-2008, Fleet Oversight Audit of Plants Farley, Hatch and Vogtle Offsite Emergency Preparedness Support, April 29, 2008

Condition Report (CR)

2007108587, ENN phone at the Houston County Sheriff's Office required resetting  
 2009102721, Tone Alert Radio coverage walkdown  
 2009103225, Safety conscious work environment  
 2009105268, 25 Henry county residences identified as not in TAR database  
 2009109789, Tracking CR for final listing of TAR refusals spring 2009  
 2009110347, Small tree near meteorological tower may be larger than acceptable per RG1.23  
 2009110758, 150 ft wind speed telemetry indication for ERDS  
 2009111467, FNP-0-EIP-0 and FNP-0-EIP-6 need to be reviewed against NEI-99-02 Rev. 5

**Section 1EP6: Drill Evaluation**Procedures:

FNP-0-EIP-9.0, Emergency Actions, Version 60.0  
 NMP-EP-303, Drill and Exercise Standards, Version 1.0

**Section 2OS3: Radiation Monitoring Instrumentation and Protective Equipment**Procedures, Guidance Documents and Manuals

FNP-0-RCP-1, Schedule, Health Physics Group Activities, Ver. 39.0  
 FNP-0-RCP-73, Operation of the Shepherd Model 149 Neutron Source Calibrator, Ver. 2.0  
 FNP-0-RCP-77, Operation and Calibration of Eberline Model 1000B, 1000B-R Multiple Source Gamma Calibrator, Ver. 10.0  
 FNP-0-RCP-78, Operation and Calibration of the Eberline Portal Monitor PCM-1B, Ver. 26.0  
 FNP-0-RCP-79, Operation and Calibration of the Eberline PM-7 Personnel Monitor, Ver. 9.0  
 FNP-0-RCP-110, Sampling of Service Air to Meet Respiratory Limits, Ver. 11.0  
 FNP-0-RCP-201, Calibration and Control of Fixed and Portable Health Physics Instrumentation, Ver. 26.0  
 FNP-0-RCP-207, Operation and Calibration of Eberline E-140 and E-140N Count Rate Meter, Ver. 11.0  
 FNP-0-RCP-214, Operation and Calibration of Eberline Analog Smart Portable Model ASP-1, Ver. 19.0  
 FNP-0-RCP-260.1, Operation and Calibration of the IRD 2000 Dosimeter Irradiator/DosiCal Software, Ver. 4.0  
 FNP-0-RCP-260.2, Operation and Calibration of the DMC 2000 GN Dosimeter, Ver. 1.0  
 FNP-0-RCP-285, Operation and Calibration of the Bicrin NE SAM-9 Small Articles Monitor, Ver. 4.0  
 FNP-0-RCP-287, Operation and Calibration of the MGP Instruments Telepole, Ver. 5.0  
 FNP-0-EIP-9.2, Emergency Classification, Ver. 7  
 FNP-0-EIP-16.0, Emergency Equipment and Supplies, Ver. 54

Records and Data Reviewed

Calibration Record: RAM-100, s/n 5601-006, 8/7/09  
 Calibration Record: Tennelec 5E, s/n 69712-1, 8/4/09  
 Calibration Record: Electronic Dosimeter Calibrator, 1/15/09  
 Calibration Record: SAM-9, s/n HP-GSD-013, 7/31/09; SAM-9, s/n HP-GSD-012, 7/17/09  
 Calibration Record: PM-7, s/n 7, 3/30/09  
 Calibration Record: PCM-1B, s/n 22, 7/17/09  
 Calibration of U2 R-27A: 5/6/07, 11/9/08  
 Calibration of U2 R-27B: 4/26/07, 11/17/08  
 Calibration of U2 R-2: 4/13/07, 11/3/08  
 Calibration of U1 R-7: 10/19/07, 4/22/09  
 Calibration of R-35B: 8/23/07, 10/19/08  
 Calibration of U1 R-5: 7/25/06, 1/9/08  
 Annual Certification: Eberline Multiple Source Gamma Calibrator, 1/20/09  
 Respirator Qualification Report by Employee, Operations Department, 8/12/09  
 Air Quality Data, Bauer Compressor (8/30/06, 12/21/06, 3/27/07, 6/25/07, 3/26/08, 10/6/08, 12/11/08)

Air Quality Data, Houston Co. Vol. Fire Department (7/09/08, 12/16/08, 6/18/09)  
 Air Quality Data, Service Air (Various dates associated with airline/bubble hood use)  
 Respirator Recertification/Inventory Sheet (July 2009, June 2009)

#### Corrective Action Program (CAP) Documents

Condition Report (CR) 2005106870, During a July 2005 NRC inspection it was identified that HP had moved a neutron source used for instrument calibration and source checks  
 CR 2007100661, A number of personnel lack knowledge on the storage location for small and large respirators that are used with SCBA packs  
 CR 2008103787, EP staff informed U1 R-29B out of service and had been for more than 7 days  
 CR 2008105638, Several weaknesses associated with the supplied air system used for bubble suits and air lines were noted  
 CR 2008105640, Plant service air system and SCBA tank fill systems do not employ in-line, real-time carbon monoxide monitors  
 CR 2008107464, SFP area monitor R-5 declared inoperable due to check source not being able to cause an increase greater than or equal to 1.3 E-3 R/h  
 CR 2009101741, During the process of revising our current HP JPM on the operation of the Multi-Source Gamma Calibrator, it was noted there were some discrepancies between the procedure/manual and how we use the equipment  
 CR 2009103057, During performance of corrective action for CR 2009101741, two discrepancies were noted in the HP Calibration process  
 CR 2009105782, RE0008 failed low several times in a ten minute time period before failing low and staying off-scale low  
 CR 2009106143, Plant Farley Respiratory Protection Program improvements  
 CR 2009109384, U1 rad monitor R-2 saturating frequently  
 CR 2009109421, During I&C troubleshooting plan on R2 saturating, various rad monitors came into alarm unexpectedly

### **Section 2PS1: Radioactive Gases and Liquid Effluent Treatment and Monitoring Systems**

#### Procedures, Guidance Documents, and Manuals

FNP-1-CCP-213.1, Gaseous Effluent Radiation Monitoring System Setpoints, Ver. 19.0  
 FNP-2-CCP-212, Detailed Guidance for Unit 2 WMT Releases, Ver. 19.0  
 FNP-1-CCP-643, Sampling Points for Potential Radiological Effluents, Ver. 33.0  
 NMP-GM-002, Corrective Action Program, Rev 8.0

#### Records and Data Reviewed

Annual Radioactive Effluent Release Report, 2007 and 2008  
 Design Change Package C071193601, Liquid Radwaste Processing System, 10 CFR 50.59 Screening  
 Temporary Modification 1070696501, Jumper installation to allow sampling of modified continuous containment release  
 Work Order (WO) 1062538101, Calibration of U1 Steam Jet Air Ejector Lo-range Rad Monitor RE-15, 4/8/08  
 WO 1041266301, Calibration of U1 Service Water Rad Monitor RE-20A, 8/12/05  
 WO 1060583301, Calibration of U1 Service Water Rad Monitor RE-20A, 7/19/07  
 WO 1041061101, Calibration of U1 Service Water Rad Monitor RE-20B, 2/8/05  
 WO 1070004901, Calibration of U1 Service Water Rad Monitor RE-20B, 2/13/07

WO 2052861701, Calibration of U2 Plant Vent Stack Rad Monitor RE-14, 9/23/06  
 WO 2062539101, Calibration of U2 Plant Vent Stack Rad Monitor RE-14, 1/14/08  
 WO 2063102601, Calibration of U2 Liquid Waste Processing Rad Monitor RE-18, 2/14/08  
 WO 2060448601, Calibration of U2 Vent Stack Flow Totalizer, 11/13/07  
 WO 2070767401, Calibration of U2 Vent Stack Flow Totalizer, 4/27/09  
 WO 2050522801, Calibration of the U2 Waste Monitor Pump Flowmeter, 5/31/06  
 WO 2060448801, Calibration of the U2 Waste Monitor Pump Flowmeter, 11/15/07  
 Calibration Source Traceability Summary, Serial Nos. 128 and 129  
 Effluent Monitor Out-of-service Log, March 2007 – July 2009  
 Gaseous Radioactive Waste Release Permits G-20090716-0917-B, G-20090716-0915-B, G-20090709-0905-C, G-20090806-0956-C  
 Liquid Radioactive Waste Release Permits L-20090810-1360-B, L-20090718-1325-B  
 Results of Radiochemistry Cross-Check Program, 2007 and 2008  
 WO S-04000319, U2 Auxiliary Building Rad Side Vent Filtration Testing, 3/18/04  
 WO 2060406701, U2 Auxiliary Building Rad Side Vent Filtration Testing, 12/13/07  
 WO S-04000318, U1 Auxiliary Building Rad Side Vent Filtration Testing, 3/18/04  
 WO 1060406601, U1 Auxiliary Building Rad Side Vent Filtration Testing, 12/13/07

#### CAP Documents

F-CRW-2008, Fleet Oversight Audit of Chemistry and Radioactive Waste, 2/3/09  
 CR 2007100708, Documentation for calibration source traceability could be better organized  
 CR 2007102133, New modified continuous containment release was potentially bypassing purge sampling point  
 CR 2008100704, RE-18 failed low following liquid release  
 CR 2008102728, Interface box for rad monitors RE-29A & B is obsolete  
 CR 2008103721, U1 RE-29B failed its calibration  
 CR 2008105025, U1 RE-18 Maintenance Rule classification changed to A1  
 CR 2008111287, Slightly elevated tritium levels in river water environmental sample  
 CR 2009109155, Count room instrument taken out of service

#### **Section 2PS3: Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program**

##### Procedures and Guidance Documents

Offsite Dose Calculation Manual for Joseph M. Farley Nuclear Plant, Version (Ver.) 23  
 Farley Nuclear Plant Environmental Monitoring Procedure (FNP-0-ENV) - 17, Meteorological Tower, Ver. 29.0  
 FNP-0-ENV - 101. Schedule, Environmental Monitoring Program, Ver. 30.0  
 FNP-0- Emergency Plan Implementing Procedure – (EIP)-8.3, Communications Equipment Operating Procedures, Ver. 12  
 FNP-0-EIP-9.1, Automated Dose Assessment Method, Ver. 11  
 FNP - 0 – Instrument Maintenance Procedure (IMP) – 255.2, Environmental Air Monitoring Station Preventative Maintenance and Calibration

Records and Data Reviewed

Work Order (WO) S071171901, Calibration of Primary Meteorological Station Instrumentation, 05/12/09

WO S063154401, WO S063154301, WO S071132201, WO S072021901, WO S072021601, WO S072022201, WO S063154801, WO S072021801 Associated With: Perform Preventative Maintenance Per FNP-0-IMP-255.2 for the following locations: Blakey Station, (10/07/08); Paper Mill Cedar Springs (10/09/08); River Water Structure (12/12/08); Dothan, AL (07/24/08); South of Firing Range (07/15/09); Neals Landing, FL (07/16/09); North Plant Boundary (10/13/08); Columbia, AL (07/13/09)

WO S071739401 & WO S071133401, Preventative Maintenance on Environmental Water Sampler (Paper Mill at Cedar Springs, GA, 05/27/09 & 11/26/08)

WO S071133501 & WO 071739301, Preventative Maintenance on Dam Environmental Water Sampler, (Andrews Dam 05/27/09 & 11/24/08)

Joint Frequency Distribution Wind Speed and Direction, 1/1/08-12/31/08

Plant Farley Meteorological Tower Data Recovery, January 1, 2008 – December 31, 2008; and January 1, 2008 – December 31, 2008

Minimum Detectable Concentrations Calculations for: Tritium in Water 11/15/08, Tritium in Ground Water, Gross Beta Analysis of Particulate Filter Samples 01/94

CAP Documents

Audit Number CFO 2009-059, Southern Nuclear Operating Company Supplier Quality Audit Report of the GPC Environmental Laboratory, May 18 – May 21, 2009.

CR 2007100305, Environmental air sampler at Neal's Landing lost approximately 1Hr and 45 minutes of sample time during weekly sampling period

CR 2007101102, Environmental air monitoring stations at RWIS (0501) and the Met Tower were reading 0 LPM at the time of filter change-out.

CR 2007101609, Environmental air monitoring station near the Met Tower (1601) Lost ~ 27.5 hours during the weekly sampling period

CR 2007104982, Environmental air monitoring station at Blakely (0215) lost approximately 75 minutes during the last weekly sampling period

CR 2007111612, Environmental air monitoring station at Columbia (1605) had a lower than expected sample volume for the current sample.

CR 2007105482, Environmental air monitoring station at Neal's Landing (0718) showed 0 LPM at time of filter change-out

CR 2007105869, Environmental air monitoring station at Neal's Landing (0718) lost approximately 3.5 hours of sample time during last sample period,

CR 2007106502, Environmental air monitoring station at Neal's Landing (0718) Lost ~ 2.25 hours of sample time during last sampling period

CR 2007108006, Environmental air monitoring station at Neal's Landing (0718) was found tripped during routine filter change-out. \*\*\*

CR 2007108421, Environmental air monitoring station at Neal's Landing (0718) was found tripped during routine filter change-out

CR 2007110993, Environmental air station at Neal's Landing (0718) was found tripped during routine filter change-out

CR 2007111610, Environmental air station at Neal's Landing was operating SAT at Time of Filter Change-out on 11/6/07 but following filter change-out totalizer was showing 0 LPM

CR 2007111612, Environmental air monitoring station at Columbia (1605) had lower than expected sample volume

- CR 2008103522, Environmental monitoring station at Blakely (0215) lost approximately 1 hour of sample time during the weekly sampling period
- CR 2008104250, Environmental monitoring stations run time deficiencies noted for North Perimeter (1601) Lost approximately 2 hours; Columbia (1605) lost approximately 2 hours; and Ashford (1108) lost ~ 1.25 hours
- CR 2008105037, Environmental air monitoring station at the Paper Mill (0703) lost approximately 1 hour of sample time during the sampling period
- CR 2008105635, Environmental air monitoring station at the Met Tower (1601) lost approximately 23 hours of sampling time during the weekly sampling period
- CR 2008105891, Environmental air monitoring station at the Paper Mill (0703) lost approximately 2 hours of sample time during the sampling period
- CR 2008106602, Environmental air monitoring station at the South Southeast Boundary (0701) lost approximately 2 hours during the sample period
- CR 2008107578, Environmental air monitoring station at the North Perimeter (1601) was found not Running
- CR 2009101892, Environmental air monitoring station at the RWIS (0501) removed from service between 2/16/09 through 02/19/09
- CR 2009103480, SSE Environmental Air Monitoring Station (0701) Showed a Loss of 6 Hours and 5 Minutes of Run Time
- CR 2009103944, Environmental air monitoring station at the firing range was found not running – totalizer unit problem
- CR 2009105175, Tracking CR associated with the REMP Program missed air sample
- CR 2009106938, Environmental air monitoring station at Blakely (0215) was found not running – lost power for approximately 1 hour
- CR 2009107849, Difficulties identified for readouts on environmental air sampling totalizers
- CR 2008104563, Tracking of FNP REMP TLD Anomalies
- CR 2008106842, TLD anomalies identified with 2<sup>nd</sup> quarter collections – RC-1104 Location
- CR 2009108199, Environmental TLD at the northwest plant site boundary (1401) is missing
- CR 2008106857, Sample supply valve found isolated from environmental water sampler at the Paper Mill,
- CR 2008104736, Sample supply hose found removed from sample reservoir and sample supply valve found isolated,
- CR 2008101317, Depleted desiccant for environmental river water samplers at Andrews Dam and Paper Mill locations
- CR 2008106134, Environmental water sampler at Paper Mill (07030) temporarily secured due to shutdown at the Mill – deviation for the 2008 REMP Report
- CR 2008111287, Tracking/Trending CR associated with elevated tritium concentration data for 3<sup>rd</sup> quarter (2008) river water at the Paper Mill sampling area.
- CR 2008108902, Air particulate filter from the Columbia Air Monitoring Station (1605) collected on 08/26/08 were lost
- CR 2007100929, Backup Met Tower wind speed on the IPC does not agree with recorder at the Met Tower
- CR 2007102385, RMDA removed from service, previous automatic meteorological calculations No longer being automatically performed
- CR 2007104434, Secondary delta temp values for Primary Met Tower drift and are out-of-agreement with Primary and Tertiary Channels

CR 2007105664, Ambient temperature sensor at the Primary Meteorological Tower not reading correctly  
 CR 2007110460, Primary Met Tower tertiary delta T and 35 foot (') horizontal bivariate recorders are not operating properly  
 CR 2007111842, The 35' wind speed indications at the backup met tower do not agree with the 35' wind speed indications at the primary tower  
 CR 2007111850, Wind speed values on the IPC (WINDSPD-35 and WINDSPD-150P) are not in agreement with the windspeed values that are ERDS points  
 CR 2007112900, The secondary delta temp Sensor at the Met Tower does not agree with the primary or tertiary Sensors  
 CR 2008104972, The 150' wind speed value on the IPC and ERDS Systems are Not in Agreement.  
 CR 2008106601, The 150' wind direction at the primary met tower is not operating properly  
 CR 2008110974, The primary met tower 35' ambient temperature and backup met tower ambient temperature values are not in agreement within the acceptance values  
 CR 2009104150, Trending CR regarding primary and backup met tower operability issues  
 CR 2009108135, Met tower 150' sensors no longer mounted correctly  
 CR 2009109750, Discovery of fixed contamination associated with grinder wheel catch-plate

#### **Section 40A1: Performance Indicator Verification 71151**

##### Procedures

FNP-0-AP-54, Preparation and Reporting of NRC Performance Indicator Data and NRC Operating Data, Rev. 12

##### Documents:

Farley Unit 1 and Unit 2 Consolidated Data Entry ROP Parent Process Data Review Reports for Reactor Coolant System Activity and Identified Leakage  
 Farley Unit 1 and Unit 2 Consolidated Data Entry Unavailability and Unreliability Derivation Reports for Cooling Water Systems  
 FNP-0-AP-54, Preparation and Reporting of NRC Performance Indicator Data and NRC Operating Data, Version 12.0  
 Selected Unit 1 and Unit 2 Control Room Logs from July 2008 through June 2009

##### Records and Data

Siren System Availability Test Records, January 1, 2008, through June 30, 2009  
 ERO Personnel Participation, January 1, 2008, through June 30, 2009  
 DEP Opportunities, January 1, 2008, through June 30, 2009  
 Access Control Alarms Report Data, October 1, 2008, - June 30, 2009  
 Gaseous Radioactive Waste Release Permits G-20090714-0912-C, G-20090813-0971-C  
 Liquid Radioactive Waste Release Permits L-20090713-1318-B  
 CR 2009102151, When automatic closure of RCV-14 is tested, RE-19 and RE-26 come into alarm

##### CAP Documents

CR 2009105629, Dose rate alarm received during work evolution for change-out of RCS filter  
 CR 2009104023, Dose alarm received during work activities within Unit 1 containment

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

2008205168, 2008205170, 2008205171, 2007203472

Condition Reports:

2006100701, 2007102003, 2007104092, 2008102092, 2008102490, 2008105195, 2008105348, 2009101335

Documents:

DOEJ-FRC072420401-E001, LOSP with Diesel in Test, dated May 16, 2008  
 TS 3.8.1, AC Sources – Operating  
 E-042, Steady State Diesel Generator Loading Calculation for LOSP, SI and SBO, Version 18  
 SE-90-1845-2-PE, Large, Small, and SBO Diesel Dynamic Study, Revision 5  
 A181005, Functional System Description Diesel Generator System, Version 34.0

Procedures:

FNP-0-STP-80.6, Diesel Generator 1-2A 24 Hour Load Test, Version 26.0  
 FNP-0-STP-80.7, Diesel Generator 1C 24 Hour Load Test, Version 22.0  
 FNP-1-STP-80.6, Diesel Generator 1B 24 Hour Load Test, Version 22.0  
 FNP-2-STP-80.6, Diesel Generator 2B 24 Hour Load Test, Version 17.0

Work Orders:

C072420401, 1060375001, S060354701, S060354601, 2060449301

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

2008205769, 2008205812, 2008205813, 2008205814, 2008205815, 2008205816, 2008205817, 2008205818, 2008205819, 2008205820, 2008205822, 2008205823, 2008205824, 2008205825, 2008205826, 2008205827, 2008205828, 2008205829, 2008205830, 2008205815, 2008205831, 2008205832, 2008205833, 2008205834, 2008205835, 2008205836, 2008205837, 2008205838, 2008205839, 2008205840, 2008205841, 2008205842, 2008205843, 2008205856, 2008205858, 2009203281, 2009203282, 2009203283, 2009203284, 2009203285, 2009203286, 2009203287, 2009203288, 2009203290, 2009205413, 2009205415, 2009205421, 2009205424, 2009205548, 2009205902, 2009206435, 2009206434

Condition Reports:

2008107290, 2009103249, 2009103250, 2009103286

Documents:

American-Standard Heat Transfer Division, Type CPS, CP & CPK Exchangers  
 BM-99-1932-001, Farley Internal Flooding Assessment  
 DCR 96-0-9056, Process Coating for D/G Heat Exchangers, Revision 3  
 Plant Farley 1-2A Diesel Generator Lube Oil Cooler Tubing Evaluation, dated February 19, 2009  
 ECUTED Calibration Standard Certification  
 (iTi) Integrated Technologies, Inc, preliminary report 01-51, Diesel Generator 2B Inter-cooler

PRC-DeSoto, Technical Data Bulletin PR-855, Fire Stop Foam, Issued 10/2000

Procedures:

FNP-0-EMP-1370.02, Installation and Repair of Penetration or Conduit Seals, Version 15.0  
 FNP-0-ETP-4368, Performance Test for Units 1 & 2 Small Diesel Generator Jacket Water Heat Exchangers, Version 8.0  
 FNP-0-GMP-30.1, Tribology Program, Version 7.0  
 FNP-1-FSP-39, Visual Inspection of Penetrations (Non Fire Barrier), Version 16.0  
 FNP-2-FSP-39, Visual Inspection of Penetrations (Non Fire Barrier), Version 18.0

Work Orders:

1070945601, 1090492201, 1090983501, 2063398301, 2090492501, 2090659901, 2090980901, 2090981201, 2090982601, 2090983401, S090469701, S090653101

**Section 40A5: Other**

CR 2009101902, Obstruction in Discharge Piping of 1A Emergency Air Compressor [Seized Check Valve]  
 CR 2009101903, Air Leaks at PCV2885A and PCV2885C  
 CR 2009101906, 1B Emergency Air Compressor Will Not Unload  
 CR 2009101539, No Assurance that Air from the Emergency Air Compressors Will Supply the ARVs  
 CR 2009100845, There is no Performance Criterion for Monitoring Availability of Function R43-F03 (emergency air compressors)  
 FNP-1-SOP-62.0, Emergency Air System, Version 16.0  
 OPS-52520F, AOP-6.0, Loss of Instrument Air  
 WO 2062451701, Emergency Air Compressor 2A Reservoir Outlet Check Valve, Completed 6/4/08  
 WO 2081628601, Emergency Air Compressor 2B Reservoir Outlet Check Valve, Completed 8/08  
 WO 2062451701, Repair of Check valve NV075A, completed 7/2006  
 WO 2082451701) Repair of Check valve NV075B, completed 8/2008  
 FNP-2-STP-65.1, Emergency Air Compressor 2A Operability Test, 9/13/2007, 3/26/2008, and 8/14/2008  
 FNP-2-STP-65.2, Emergency Air Compressor 2B Operability Test, 7/5/2007, 12/20/2007, and 6/5/2008

**Temporary Instruction 2515/173 – Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative**

Offsite Dose Calculation Manual, Ver. 23  
 NMP-EN-002, Actions for Potential Groundwater Contamination Events, Ver. 2.0  
 FNP-0-ENV-798, On-site Ground Water Monitoring Program, Ver. 1.0  
 FNP-0-RCP-29, Contamination Guidelines, Ver. 40.0  
 FNP-0-SHP-30, Waste Disposal, Ver. 28.0  
 FNP-0-RCP-1, Schedule, Health Physics Group Activities, Ver. 38.0  
 FNP-0-GMP-81.0, General Excavating and Trenching Guidelines, Ver. 13.0  
 Groundwater Monitoring Report, March 2009  
 System Health Report, Spent Fuel Pool Cooling and Cleanup, 2<sup>nd</sup> Quarter 2009

Underground Piping Systems Risk Ratings

10 CFR 50.75(g) Leak/Spill Decommissioning Record

Email from Mary-Beth Lloyd, Southern Nuclear Operating Company, to Myron Riley, State of Alabama, 8/22/08

C-1460116-03, Calculation of Tritium Deposition at the J.M. Farley Nuclear Plant, 12/27/07

CR 2008201119, Establish audit frequencies for groundwater monitoring programs

CR 2008201146, Update FSAR to include groundwater monitoring program

CR 2009111874, Initial briefing of stakeholders regarding the Farley ground water protection program did not include local contacts

CFO-2009-059, Audit of Georgia Power Company Environmental Laboratory

Southern Nuclear Fleet Focused Groundwater Self Assessment, 7/7/08 – 8/8/08