



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

April 29, 2010

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 05000348/2010002 AND 05000364/2010002

Dear Mr. Johnson:

On March 31, 2010, 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, discussed on April 8, 2010, with you and members of your staff.

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

This report documents one self-revealing and three NRC-identified findings of very low safety significance (GREEN). These four 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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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 05000348/2010002, and 05000364/2010002  
w/Attachment: Supplemental Information

cc w/encl.: (See page 3)

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Letter to J. Randy Johnson from Scott M. Shaeffer dated April 29, 2010

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000348/2010002 AND 05000364/2010002

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 05000348, 05000364

License Nos.: NPF-2, NPF-8

Report No.: 05000348/2010002, and 05000364/2010002

Licensee: Southern Nuclear Operating Company, Inc.

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

Location: Columbia, AL

Dates: January 01, 2010, through March 31, 2010

Inspectors: E. Crowe, Senior Resident Inspector  
S. Sandal, Resident Inspector  
J. Nadel, Resident Inspector  
L. Pressley, Project Engineer  
S. Rose, Senior Project Engineer (Section 1R17)  
R. Berryman, Senior Reactor Inspector (Section 1R17)  
C. Even, Reactor Inspector (Section 1R17)

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000348/2010002 and 05000364/2010002; 01/01/2010 – 03/31/2010; Joseph M. Farley Nuclear Plant, Units 1 and 2; Fire Protection; Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications; and Event Follow-up.

The report covered a three-month period of inspection by the resident inspectors. One self-revealing and three NRC-identified Green NCVs were identified. The significance of most findings is indicated by its color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process (SDP)." Findings for which the SDP does not apply may be Green or 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," (ROP) Revision 4, dated December, 2006.

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

Cornerstone: Initiating Events (IE)

- Green An NRC-identified NCV of License Condition 2.C.(4) was identified for the failure to control combustible material in the Unit 1 Component Cooling Water (CCW) Pump area as required by the licensee's administrative controls program. Workers left combustible material in the area of the 1A CCW pump motor, which is identified as a 10 CFR 50, Appendix R, Section III.G.2.b area. Twenty feet of cable separation exists in the area, but because no fire barrier exists, no intervening combustibles or fire hazards are allowed. Work Order (WO) 1082262401 was generated by licensee personnel to clean the sight-glasses on the inboard and outboard motor bearings of the 1A CCW pump. Part of the preparation and planning process includes a transient fire load analysis, which is included in the maintenance work instructions. In the case of this WO, the instructions utilized the fire load analysis data for the Unit 1 CCW heat exchanger area instead of the CCW pump area, and was included in the written instructions. The inspectors determined these inadequate work instructions contributed to the performance deficiency. The licensee entered their failure to control combustible material into their CAP for resolution (CR 2009114934) for resolution. The licensee's immediate corrective action was removal of the material from the location.

The finding was more than minor because it adversely affected protection against the external factors attribute of the Initiating Events (IE) cornerstone, to limit the likelihood of those events upsetting plant stability and challenging critical safety functions during shutdown, as well as power operations. Specifically, this finding affected plant safety-related equipment required for the safe shutdown of the plant in the event of a plant fire. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 and Appendix F of MC 0609. The inspectors determined the presence of combustible materials was a low degradation finding against the fire protection program, because the identified material had a low likelihood of causing a fire from an existing source of heat or electrical energy. The inspectors determined the finding was of very low safety significance (Green) because of the low degradation rating. This finding was assigned a cross-cutting aspect in the

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resources component of the Human Performance area because complete, accurate and up-to-date design documentation, procedures, work packages, and correct labeling of components were not provided (H.2(c)). (Section 1R05)

- Green. A self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings, was identified for the licensee's failure to maintain combustible material a distance of 35 feet or greater from the "hot work" area as required by station procedure FNP-0-AP-38, Use of Open Flame. Unit 1 entered a Notification of Unusual Event (NOUE) emergency action level on December 12, 2009, when a fire occurred in the CCW heat exchanger/pump room. The fire occurred below and to one side of the scaffold near the service water (SW) supply to the 1A CCW heat exchanger isolation valve Q1P16V003A. The cause of the fire was combustible material left in the work area by licensee personnel performing lead abatement on piping supports for a plant modification. Welding personnel had later entered the area, performed welding/grinding activities, then placed work-related material in a concentrated area under the work area. The licensee entered this performance deficiency into their CAP (CR 2009114825) for resolution.

The finding was more than minor because it adversely affected the protection against the external factors attribute of the IE cornerstone to limit the likelihood of those events upsetting plant stability and challenge critical safety functions during shutdown, as well as power operations. Specifically, this finding resulted in upsetting plant stability and potentially affected plant safety-related equipment. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 and Appendix F of MC 0609 SDP, and determined a Phase 2 analysis was required. Fire Damage State (FDS) 0 was assigned to the actual fire and any postulated fires due to the performance deficiency. FDS 0 indicated that no functions failed as a consequence of these fires. In the actual fire there was no functional damage to any target. Also, the peak heat release had happened and passed when the fire was extinguished. Consistent with Inspection Manual Chapter 0609, Appendix F, a maximum heat release rate of 200 KW was selected for the postulated transient combustible fires. No targets were observed in the zone of influence where the combustible material was located. Under step 2.2 of Appendix F performance deficiencies associated with FDS 0 fires were not analyzed in the Fire Protection SDP as a risk contributor. Therefore, the finding was determined to be of very low safety significance (Green). A contributing cause of the finding is the failure of supervisory personnel to ensure the area was free of combustible material as required by FNP-0-AP-38 and the actual open flame permit. Therefore, this finding was assigned a cross-cutting contributing cause related to the Human Performance work-practices component, and its aspect of the licensee ensures supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported (H.4(c)). (Section 4OA3)

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green NCV of TS 5.4.1 for the failure to maintain emergency procedure FNP-1/2-ESP-1.3, Transfer to Cold Leg Recirculation, Rev. 19. ESP-1.3 contained a step to verify containment sump level was sufficient to

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adequately cover the containment sump screens prior to initiating cold leg recirculation following a loss of coolant accident (LOCA) which led to a full flow recirculation. The containment sump level specified by the procedure was not sufficient to ensure suction vortexing and air ingestion into the emergency core cooling system (ECCS) would have been prevented. This finding was entered into the licensee's corrective action program as condition report (CR) 20101101103. Planned corrective actions included issuing a standing night order to ensure adequate containment sump level is verified prior to transferring to cold leg recirculation and formally changing the value in ESP-1.3.

This finding is more than minor because it affects the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems (containment spray and residual heat removal) that respond to initiating events (LOCAs which lead to full flow recirculation phase) to prevent undesirable consequences (i.e., core damage) and the cornerstone attribute of Procedure Quality, i.e. Operating (Post Event) Procedures (EOPs). The team assessed this finding using the SDP and determined that the finding was of very low safety significance (Green) because the inspectors determined that there was no loss of safety system function. Safety system function was determined to be maintained since the analyzed LOCAs in the accident analysis of the facility updated final safety analysis report (UFSAR) would introduce sufficient water into the containment from ECCS and the reactor coolant system (RCS) to provide sufficient containment sump level to ensure water level above the sump screens to prevent air introduction. This finding was reviewed for cross-cutting aspects and none were identified since the performance deficiency has existed since initial operation and is not indicative of current licensee performance. (Section 1R17)

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings for the failure to implement procedure NMP-AD-012, Operability Determinations and Functionality Assessments. Specifically, the licensee failed to revise the existing prompt determination of operability (PDO) as required by NMP-AD-012 for the Unit 2 Turbine Driven Auxiliary Feedwater (TDAFW) pump when significant non-conservative changes in water content of oil samples challenged assumptions used to establish pump operability. This issue was entered into the licensee's CAP as CR 2010101426.

The finding is more than minor because it is associated with the reactor safety mitigating systems cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, this finding was analogous to MC0612, Appendix E example 3.j in that a reasonable doubt about the continued operability of the pump existed prior to further evaluation. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 of MC 0609, SDP and determined to be of very low safety significance because the finding did not result in the loss of safety function of a single train or screen as risk significant due to external events. This finding was assigned a cross-cutting aspect in the Resources component of the Human Performance area in that complete, accurate and up-to-date design documentation,

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procedures, work packages, and correct labeling of components were not provided (H.2(c)). Specifically, the oil sampling program procedures and methods lacked the detail and rigor necessary to verify assumptions in the PDO and called into question the continued operability of the TDAFW pump. (Section 1R15)

B. Licensee-identified Violations

None

## REPORT DETAILS

### Summary of Plant Status

Unit 1 started the report period at 100 percent Rated Thermal Power (RTP). On February 21, 2010, the unit was ramped to 92 percent RTP for main condenser tube isolation and tube leak repairs. The unit was returned to 100 percent RTP on February 22, 2010, but later ramped to 85 percent RTP due to concerns with imbalance loading and its effects on the main condenser. The main condenser tube was repaired on February 26, 2010, and the unit returned to 100 percent RTP. The unit was ramped to 85 percent RTP on March 7, 2010, for an additional main condenser tube leak. The additional tube leak was repaired on March 10, 2010, and the unit returned to 100 percent 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 until March 26, 2010, when the unit started an RCS temperature coast-down for its upcoming refueling outage. The unit ended the inspection period at 94 percent RTP.

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

Seasonal Readiness Review. The inspectors evaluated implementation of the licensees' Cold Weather Contingency procedure, FNP-0-SOP-0.12, and conditions for entry into the procedure. The inspectors examined heat tracing lines on the condensate storage tanks and Refueling Water Storage (RWS) tanks to verify these protections for cold weather conditions were functional. The Emergency Diesel Generator (EDG) building and Service Water Intake Structure (SWIS) were also evaluated to ensure provisions were implemented to compensate for any known deficiencies. Documents reviewed are listed in the Attachment.

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

- Projected freezing temperatures for January 7-9, 2010

##### b. Findings

No findings of significance were identified.

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## 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.

- EDG 1-2A, 1C, 2B during 1B EDG Outage.
- Unit 1 - Safety-related Electrical Distribution System including 2C EDG during 1B EDG Outage.
- Unit 1 – Train B residual heat removal (RHR) system during planned maintenance to the 1A RHR pump.
- EDG 1B, 1C, 2B and 2C during 1-2A EDG Outage.

### 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 licensees' 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, CCW Heat Exchanger Room, Fire Zone 6
- Unit 2, 100' elevation Piping Penetration Room, Fire Zone 1
- Unit 1, Auxiliary Building 100' elevation, Fire Areas 4 and 5.
- Unit 1, MS Valve Room, Fire Zone 6

b. Findings

Introduction A Green NRC-identified NCV of License Condition 2.C.(4) was identified for failure to control combustible material in the Unit 1 CCW pump area as required by the licensees' administrative controls program. Workers left combustible material in the area of the 1A CCW pump motor which was specified as "no intervening combustible material allowed" in accordance with the licensees' Fire Hazard Analysis.

Description On December 15, 2009, NRC inspectors discovered a canvas tool bag containing three plastic bottles, paper "wipe-alls," flashlight, hammer, and two work packages sitting atop the check valve for the 1A CCW pump. The tool bag was unattended and in an area clearly marked "No Combustible Material." The Farley Fire Hazard Analysis identifies two areas in room 185 (Fire Zone 1-006), each having different fire loadings. One is the CCW heat exchanger area, which has a higher allowed combustible material loading. The other area is the 1A CCW pump area, identified as a 10 CFR 50, Appendix R, Section III.G.2.b area. The area has 20 feet of cable separation, but because no fire barrier exists, no intervening combustibles or fire hazards are allowed in this area. Station procedure FNP-0-ACP-35.2, Flammable Material and Combustible Material Control, provides guidelines for bringing combustibles into plant areas and designates the CCW pump area as allowing zero solids or liquids in the area. The licensee has also painted a 4-inch red stripe on the floor of the area marked as "No Combustible Material."

Work Order (WO) 1082262401 had been generated by licensee personnel to clean the sight-glasses on the inboard and outboard motor bearings of the 1A CCW pump. Part of the preparation and planning process included a transient fire load analysis in the maintenance work instructions. In the case of this WO, the instructions incorrectly utilized the fire load analysis data for the Unit 1 CCW heat exchanger area instead of the CCW pump area. The worker carrying the canvas bag into the area had possession of these instructions. The inspectors determined these inadequate work instructions contributed to the performance deficiency.

Analysis The licensees' failure to maintain combustible material outside an area deemed as "no intervening combustible area" in accordance with 10 CFR 50, Appendix R, Section III.G.2.b, and by station procedure FNP-0-ACP-35.2 was a performance deficiency. The finding was more than minor because it adversely affected protection against the external factors attribute of the IE cornerstone to limit the likelihood of those events upsetting plant stability, and challenging critical safety functions during shutdown as well as power operations. Specifically, this finding affected plant safety-related equipment required for the safe shutdown of the plant in the event of a fire in the plant. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 and Appendix F of MC 0609, SDP. The inspectors determined the presence of combustible materials was a low degradation finding against the fire protection program because the identified material had a low likelihood of causing a fire from existing source of heat or electrical energy. The inspectors determined the finding was of very low safety significance (Green) because of the low degradation rating. This finding was assigned a cross-cutting aspect in the resources component of the Human Performance area in that

complete, accurate and up-to-date design documentation, procedures, work packages, and correct labeling of components were not provided. (H.2(c))

Enforcement License condition 2.C.(4), for Unit 1 requires the licensee to implement and maintain in effect all provisions of the approved fire protection program as described in the UFSAR for the facility, which implements the fire protection requirements of 10 CFR 50.48 and 10 CFR 50, Appendix R. 10 CFR 50, Appendix R, Section III.G.2.b requires separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. Contrary to the above, on December 15, 2009, the licensee left combustible material in the area of the 1A CCW pump motor, which is specified as “no intervening combustible material allowed” in accordance with the licensee’s Fire Hazard Analysis. Because this finding is of very low safety significance and has been entered into the CAP as CR 2009114934, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000348/2010002-01, Failure to Control Combustible Material in a “No Intervening Combustible Allowed Area” of the Plant.

#### 1R06 Internal Flood Protection

##### .1 Review of Areas Susceptible to Internal Flooding

###### a. Inspection Scope

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

- Unit 2 Containment Purge Air Equipment Room

###### b. Findings

No findings of significance were identified.

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

###### a. Inspection Scope

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

- Cable Vault B1M53
- Cable Vault B2M51

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

Resident Inspector Quarterly Review: On February 11, 2010, 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 10-S1004, conducted in the licensees' simulator for a steam generator (SG) tube leak, pressurizer pressure controller PK-444, failure of main turbine controls, and a SG tube rupture on the 1A SG. 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 licensees' scenario. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Effectiveness

a. Inspection Scope

The inspectors reviewed the following two activities for: (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) scoping in accordance with 10 CFR 50.65(b) of the MR; (4) characterizing reliability issues for performance; (5) trending key parameters for condition monitoring; (6) charging unavailability for performance; (7) classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and (8) appropriateness of performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) and/or appropriateness and adequacy of goals and

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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 2008107536, Mechanical governor zero stop failure on the 1-2A EDG
- CR 2009114968, RHR Containment Sump Isolation Valve Motor-Operated Valve (MOV) 8812's circuit breaker discovered open

b. Findings

No findings of significance were identified.

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; NMP-GM-006, Work Management; and NMP-OS-007, Conduct of Operations.

- Unit 2, January 5, 2010, GREEN maintenance risk condition concurrent with unavailability of the automatic function for the 2B EDG Fuel Oil Transfer Pump (FOTP)
- Unit 2, February 9, 2010, GREEN maintenance risk condition concurrent with unavailability of the Turbine Driven Auxiliary Feedwater (TDAFW) pump.
- Unit 1, February 18, 2010, ORANGE maintenance risk condition associated with repairs to Spent Fuel Pool (SFP) makeup and both trains of SFP cooling inoperable.
- Unit 2, March 25, 2010, GREEN maintenance risk condition concurrent with unavailability of the A Train RHR system during removal of the encapsulation for MOV 8811B.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following seven operability evaluations to verify they met the requirements of licensee procedures NMP-OS-007, Conduct of Operations, and

NMP-AD-012, ODs and Functionality Assessments. The scope of this inspection also included a review of the technical adequacy of the evaluations, adequacy of compensatory measures, and impact on continued plant operation. Documents reviewed are listed in the Attachment.

- CR 2010100260, Through wall leak on SW return line for 1D Containment Cooler at drain valve Q1P16V253D
- CR 2010100404, 2B RHR Pump main control room hand switch with loose wire
- CR 2010100733, U2 2A Charging Pump (CHG) Gas Voids at Critical Point 12B. Ultrasonic Test (UT) Inspection after Volume Control Tank (VCT) transient to determine gas void volume and operability evaluation of A Train ECCS.
- CR 2010100819, Penetration Room Filtration Quarterly Operability and Valve Inservice Test on Unit 1 Train B.
- CR 2010101394, 1B EDG lube oil low pressure discovered on maintenance run of engine.
- CR 2010100838, 1A charging pump low oil flow in inboard motor bearing
- CR 2010101426, Unit 2 TDAFW pump lubricating system discovered with water in the system

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, for the failure to implement procedure NMP-AD-012, Operability Determinations and Functionality Assessments. Specifically, the licensee failed to revise the existing prompt determination of operability (PDO) as required by NMP-AD-012 for the Unit 2 TDAFW pump when significant non-conservative changes in water content of oil samples challenged assumptions used to establish pump operability.

Description: On February 8, 2010, the licensee noticed the oil samples taken from bearing reservoirs following operation of the Unit 2 TDAFW pump on February 6, were cloudy. The licensee entered this condition into their CAP as CR 2010101426. Laboratory analysis indicated each of the samples contained a small amount of water (183 ppm, 326 ppm, and 105 ppm). On February 9, 2010, the licensee flushed the TDAFW pump oil system and replaced its contents (approximately 5 gallons). The licensee sampled the new oil and took oil samples after operation of the pump for two hours to establish a baseline for assumptions in their PDO. Water content of the new oil was 10 ppm and the remaining samples ranged from 141 ppm to 189 ppm. The licensee completed the PDO on February 10 and concluded the pump was operable based upon assumptions that included: a water content limit of 5000 ppm, a pump mission time of 24 hours, and a calculated leak rate, based on the pump run times and samples results, of 50 ppm per hour.

On March 7, 2010, the licensee took additional oil samples as part of their monitoring of the TDAFW pump. Analysis of these oil samples indicated 487 ppm and 1239 ppm of water content which were documented in CR 2010102591. The NRC inspectors questioned licensee personnel related to these sample results. The licensee indicated

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that the oil sample containing 1239 ppm of water could have been due to poor sampling techniques. The licensee further indicated that the oil sample containing 487 ppm of water was reflective of initial assumptions because seven hours of pump operation had occurred. The inspectors constructed a time line of oil samples taken and periods of operation of the pump. From this time line, the inspectors discovered that the potential existed for only one hour of operation of the pump. The licensee had flushed the oil system during the evolution of sampling and records did not clearly indicate whether the oil samples were taken prior to flushing or following flushing. The inspectors discussed this observation with the licensee. The licensee was not able to clearly establish the point at which these samples were taken.

The inspectors discovered that clear records of where samples were taken, at which times, and after what length of pump operation were not maintained. The inspectors interviewed licensee personnel and discovered that work instructions did not require this level of rigor in obtaining oil samples or describe required techniques to obtain representative samples. The inspectors noted that the licensee had failed to recognize that elevated water content in oil samples obtained on March 7, 2010, challenged water in-leakage assumptions made in the original PDO which would require revision to the PDO as specified by NMP-AD-012. The inspectors also concluded that the lack of procedural guidance governing the sampling of the TDAFW pump bearing oil reservoirs significantly contributed to unreliable water content results and, therefore, contributed to the lack of subsequent formal evaluation to address the potential impact of those sample results on pump operability. As a result of the inspector's questions, the licensee revised the PDO as required by NMP-AD-012 and concluded that previous oil samples results which had challenged water in-leakage assumptions were 'non-representative' due to variability in sampling techniques. The licensee also took corrective action to revise oil sampling procedures and established compensatory measures to continue to monitor the non-conforming condition.

Analysis: The failure to revise an existing PDO for the Unit 2 TDAFW pump as required by NMP-AD-012 when significant non-conservative changes in water content of oil samples challenged PDO assumptions used to establish assurance of pump operability was a performance deficiency. The finding is more than minor because it is associated with the reactor safety mitigating systems cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, the finding was analogous to MC0612, Appendix E example 3.j in that a reasonable doubt about the continued operability of the pump existed prior to further evaluation. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 of MC 0609, SDP and determined to be of very low safety significance because the finding did not result in the loss of safety function of a single train or screen as risk significant due to external events. This finding was assigned a cross-cutting aspect in the Resources component of the Human Performance area in that complete, accurate and up-to-date design documentation, procedures, work packages, and correct labeling of components were not provided (H.2(c)). Specifically, the oil sampling program procedures and methods lacked the detail and rigor necessary to verify assumptions in the PDO and called into question the continued operability of the TDAFW pump.

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Enforcement: 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, requires, in part, that activities affecting quality shall be prescribed by documented procedures, of a type appropriate to the circumstances, and shall be accomplished in accordance with these procedures. NMP-AD-012 specifies that when new information becomes available that significantly changes the assumptions or conditions under which the PDO was prepared and these changes are non-conservative (margin above minimum safety, structure, component function is reduced), a revised PDO shall be prepared. Contrary to the above, the licensee failed to revise the PDO (until prompted by NRC inspectors) for water intrusion into the Unit 2 TDAFW pump when analysis of oil samples taken on March 7, 2010 indicated a significant non-conservative change in the assumptions under which the initial PDO was prepared. Because this finding is of very low safety significance and has been entered into the licensee's CAP as CR 2010101426, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000364/2010002-02, Failure to Re-Evaluate Significant Changes in Assumption to Prompt Operability Determination of Unit 2 TDAFW Pump.

#### 1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications

##### a. Inspection Scope

The inspectors reviewed selected samples of evaluations to confirm that the licensee had appropriately considered the conditions under which changes to the facility, UFSAR, or procedures may be made, and tests conducted, without prior NRC approval. The inspectors reviewed evaluations for six changes and additional information, such as drawings, calculations, supporting analyses, the UFSAR, and Technical Specifications (TS) to confirm that the licensee had appropriately concluded that the changes could be accomplished without obtaining a license amendment. The six evaluations reviewed are listed in the List of Documents Reviewed.

The inspectors reviewed samples of changes for which the licensee had determined that evaluations were not required, to confirm that the licensee's conclusions to "screen out" these changes were correct and consistent with 10 CFR 50.59. The 15 "screened out" changes reviewed are listed in the List of Documents Reviewed.

The inspectors evaluated engineering design change packages for nine material and design based modifications to evaluate the modifications for adverse effects on system availability, reliability, and functional capability. The nine modifications and the associated attributes reviewed are as follows:

MDC 2070508501, Rework MOV8826A and 8826B Open Torque Switches to Eliminate Inadvertent Trip (Mitigating Systems)

- Timing
- Control Signals
- Equipment Protection
- Operations

- Licensing Basis
- Failure Modes

MDC 2072729301, Bypass Open Torque Switch for RHR/LHSI MOVs 8606A/B and 8812A/B (Mitigating Systems)

- Timing
- Control Signals
- Equipment Protection
- Operations
- Licensing Basis
- Failure Modes

DCP 1072206301, Nominal Setpoints and Calibration Band Changes to Intermediate Range P-6, Turbine Impulse Pressure P-13, and Reactor Coolant Pump (RCP) Undervoltage Trip (Mitigating Systems)

- Control Signals
- Operations
- Failure Modes
- Licensing Basis

DCP 2989937801. Unit 2 Containment Coolers A and B Coil Replacement (Mitigating Systems)

- Material/Replacement Components
- Licensing Basis
- Failure Modes
- Flowpaths
- Pressure Boundary
- Process Medium
- Seismic Qualification
- Post Modification Testing

DCP 1063064701, Barton Environmentally Qualified (EQ) Seal Replacement (Mitigating Systems)

- Material/Replacement Components
- Structural
- Equipment Protection

MDC 1081659901, Replace 1C Service Water (SW) Pump Motor with River Water (RW) Motor (Mitigating Systems)

- Energy Needs
- Material/Replacement Components
- Timing
- Equipment Protection

DCP 1063327001, Bus F and G 4160 VAC Breaker Replacement (Mitigating Systems)

- Control Signals

- Process Medium
- Timing

DCP 2070420201, Removal of U2 Auxiliary Building Stairwell No. 2 Sump Pumps

- Equipment Protection
- Licensing Basis
- Energy Needs
- Equipment Protection
- Licensing Basis
- Flowpaths
- Pressure Boundary

DCP 2071559501, Replace Turbine-Driven Auxiliary Feedwater (TDAFW) Pump Minimum Flow Orifice Q2N23FO3219

- Material/Replacement Components
- Licensing Basis
- Failure Modes
- Flowpaths
- Pressure Boundary
- Process Medium
- Failure Modes
- Seismic Qualification
- Post Modification Testing

Documents reviewed included procedures, engineering calculations, modification design and implementation packages, work orders, site drawings, corrective action documents, applicable sections of the living UFSAR, supporting analyses, TS, and design basis information. The inspectors additionally reviewed test documentation to ensure adequacy in scope and conclusion. The inspectors' review was also intended to verify that all details were incorporated in licensing and design basis documents and associated plant procedures.

The inspectors also reviewed selected Condition Reports (CRs) and the licensee's recent self-assessment associated with modifications and screening/evaluation issues to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated and tracked to completion.

b. Findings

Introduction. The inspectors identified a Green NCV of TS 5.4.1 for the failure to maintain emergency procedure FNP-1/2-ESP-1.3, "Transfer to Cold Leg Recirculation," Rev. 19. ESP-1.3 contained a step to verify that containment sump level was sufficient to adequately cover the containment sump screens prior to initiating cold leg recirculation following a loss of coolant accident (LOCA) which led to full flow recirculation. The containment sump level specified by the procedure was not sufficient to ensure suction vortexing and air ingestion into the emergency core cooling system

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(ECCS) would have been prevented.

Description. Emergency procedure FNP-1/2-ESP-1.3, "Transfer to Cold Leg Recirculation," Rev. 19, step 7.1 required operators to check containment sump level was greater than 2.4 feet. This step required operators to transition to the loss of emergency coolant recirculation procedure if this response was not obtained. The inspectors determined that an indicated containment sump level of 2.4 feet correlated to an elevation of approximately 108' 8". The top of the containment sump screens was located at an elevation of approximately 109' 3". Calculations SM-1050912301-001, "NPSH Calculation from Containment Sump to the Residual Heat Removal (RHR) Pumps – Recirculation Mode;" and SM-1050912301-002, "Net Positive Suction Head (NPSH) Calculation From Containment Sump to the Containment Spray (CS) Pumps – Recirculation Mode," analyzed the minimum containment sump level required to prevent vortexing of the sump screens during full flow conditions as being 3" over the top of the screens. This corresponded to an elevation of approximately 109' 6".

Vortexing at the inlet of the sump screens could lead to air ingestion into the suctions of the CS, RHR, or safety injection (SI) pumps. Air ingestion into these pumps could render these components inoperable.

Emergency Procedure FNP-1/2-EEP-1, "Loss of Reactor or Secondary Coolant," Rev. 29, step 16.1 required operators to check refueling water storage tank (RWST) level less than 12.5 feet. If this response was obtained, the operators were required to transition to the cold leg recirculation procedure. The inspectors determined that approximately 329,000 gallons of water is required to achieve a containment sump level of 109' 6". The inspectors also determined that at 12.5 feet in the RWST, a minimum of 294,891 gallons of RWST would have been discharged from the RWST. This water was assumed to have ended up in the containment sump via the break in the reactor coolant system (RCS) which caused the LOCA. The large break LOCA scenarios analyzed in the accident analysis of the facility UFSAR and the corresponding procedure actions per EEP-1 and ESP-1.3 all resulted in additional water from the ECCS accumulators (approximately 22,500 gallons), and approximately ten minutes of at least one train of CS pumps running (approximately 26,000 gallons) being introduced into containment and contributing to containment sump level prior to the initiation of cold leg recirculation. The inspectors also table-topped and used the facility training simulator to evaluate the possibility of a small break LOCA scenario that could deplete RWST water while maintaining RCS pressure high enough to prevent discharge of the ECCS accumulators and containment pressure low enough to prevent initiation of CS. The inspectors determined that this was not a credible scenario based on the facility UFSAR and procedural guidance to initiate RCS cooldown and depressurization for small break LOCAs. The inspectors concluded that the analyzed LOCAs in the accident analysis of the facility UFSAR would introduce at least 329,000 gallons of water into the containment which would provide at least 3" of water over the top of the containment sump screens to prevent air introduction into the ECCS.

Consistent with the requirements of NUREG-0737, Clarification of TMI Action Plan Requirements, and NUREG-0737, Supplement 1, the inspectors reviewed scenarios beyond those described in the accident analysis of the facility UFSAR such as multiple

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failures or operator errors which could result in significant amounts of RWST water being diverted outside of containment coincident with a LOCA. The inspectors determined that these types of scenarios could have resulted in operators attempting to initiate cold leg recirculation with only 2.4 feet in the containment sump.

Analysis. The failure to maintain an emergency procedure that would ensure adequate containment sump level prior to the initiation of recirculation following a LOCA was a performance deficiency. This finding was more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems (CS and RHR) that respond to initiating events (LOCAs which lead to full flow recirculation phase) to prevent undesirable consequences (i.e., core damage) and the cornerstone attribute of Procedure Quality, i.e. Operating (Post Event) Procedures (EOPs). The team assessed this finding using the SDP and determined that the finding was of very low safety significance (Green) because the inspectors determined that there was no loss of safety system function. Safety system function was determined to be maintained since the analyzed LOCAs in the accident analysis of the facility UFSAR would introduce sufficient water into the containment from ECCS and the RCS to provide sufficient containment sump level to ensure water level above the sump screens to prevent air introduction.

The inspectors reviewed the performance deficiency for cross-cutting aspects and determined that none were applicable since this performance deficiency was not indicative of current licensee performance.

Enforcement. Technical Specification 5.4.1, "Procedures", requires in part that procedures shall be established, implemented, and maintained covering the activities in Regulatory Guide (RG) 1.33, Rev. 2, "Quality Assurance Program Requirements." Appendix A of RG 1.33 states, in part, that typical safety-related activities such as combating emergencies and other significant events including loss of coolant shall be covered by written procedures. Contrary to the above, Farley did not develop and maintain procedures to combat LOCAs resulting in full flow recirculation. This condition has existed since modification of the ECCS sump strainers in October 2007 for Unit 1 and May 2007 for Unit 2. The licensee issued a standing night order to ensure adequate containment sump level is verified prior to transferring to cold leg recirculation and plans to formally change the value in ESP-1.3. Because this finding is of very low safety significance (Green) and is entered into the licensee's corrective action program as CR 20101101103, this finding is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000348/364/201002-03, Violation of Technical Specification 5.4.1 for Failure to Maintain Procedures for Full Flow Recirculation After a Loss of Coolant Accident.

## 1R18 Plant Modifications

### a. Inspection Scope

The inspectors reviewed the following temporary plant modification to ensure safety

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functions of important safety systems had been unaffected. The inspectors also verified design bases, licensing bases and performance capability of risk-significant SSCs had not been degraded through modifications. The inspectors verified any modifications performed during increased risk-significant configurations did not place the plant in an unsafe condition. The inspectors evaluated system operability, availability, configuration

control, post-installation test activities, documentation updates, and operator awareness of the modifications. Documents reviewed are listed in the Attachment.

#### Temporary Plant Modifications

- WO 110132501, Local amperage meters installed on breaker cabinet for SW Pumps 1A, 1D, 1E, 2D, 2E for interim monitoring of pump health conditions

#### b. Findings

No findings of significance were identified.

### 1R19 Post Maintenance Testing

#### a. Inspection Scope

The inspectors reviewed the criteria contained in licensee procedure 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-1-SOP-36.4, 120V AC Distribution Systems following maintenance to the TDAFWP uninterruptible power supply
- FNP-1-STP-18.5, Containment Minipurge and Exhaust Valve Inservice Test following maintenance to MOV 3131
- FNP-1-STP-80.16, Degraded Grid Voltage and Loss of Voltage Protection relays Operability Test Modes 1, 2, 3, & 4 following failure of undervoltage lamp to illuminate during sequencer testing.
- FNP-2-STP-47.0, Miscellaneous Valves Inservice Test following maintenance to containment isolation valve MOV 8082
- FNP-2-STP-23.8, Component Cooling Water Valve Inservice Test following maintenance on CCW check valve Q2P17V0288
- FNP-2-STP-22.16, TDAFWP Inservice Test following maintenance to the lube oil system/filter due to filter gasket failure

#### b. Findings

No findings of significance were identified.

## 1R22 Surveillance Testing

### a. Inspection Scope

The inspectors reviewed the following eight 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, Conduct of Operations, and attended selected briefings to determine if procedure requirements were met. Documents reviewed are listed in the Attachment.

#### Containment Isolation Valve

- FNP-1-STP-18.5, Containment Minipurge and Exhaust Valve Inservice Test
- FNP-2-STP-47.0, Miscellaneous Valves Inservice Test for containment isolation valve Q2HV8028

#### RCS Leakage Detection

- FNP-1-STP-9.0, RCS Leakage Tests

#### In-Service Test (IST)

- FNP-1-STP-16.1, 1A Containment Spray Pump Quarterly Inservice Test

#### Surveillance Tests

- FNP-1-STP-27.1, A.C. Source Verification - during 1B EDG Outage
- FNP-2-STP-22.1, 2A AFWP Quarterly Inservice Test
- FNP-2-STP-24.13, 2D SW Pump Biennial Comprehensive Pump Test (Dye Flow Test)
- FNP-1-STP-905.1, Unit 1 1B Auxiliary Building Battery Service Test

### b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

## 1EP6 Drill Evaluation

### a. Inspection Scope

On February 24, 2010, the inspectors observed the licensees' response to an emergency drill. The inspectors evaluated licensee performance to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors 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

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procedure NMP-303.0, Drill and Exercise Standards, as the inspection criteria. The inspectors also attended the licensee critiques 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 issues.

- February 24, 2010, simulated RCS leakage with failure of reactor to trip (accomplished via de-energization of rod drive motor generator sets). Failed fuel contributed to increased containment radiation levels. 1A RHR pump and 1B Motor Driven Auxiliary Feedwater Pump (MDAFWP) tripped on overload conditions providing opportunities for crews to prioritize resources. Containment leakage developed from leaking electrical penetration requiring a General Emergency declaration.

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.

Initiating Events Cornerstone

- Unplanned Trips
- Unplanned Power Changes per 7,000 Critical Hours

Mitigating Systems Cornerstone

- MSPI, RHR System

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

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 licensees' CAP. This review was accomplished by reviewing hard copies of CRs, attending daily screening meetings and accessing the licensees' computerized database.

### .2 Selected Issue Follow-up Inspection

#### a. Inspection Scope

In addition to the routine review, the inspectors selected the issue listed below for a more in-depth review. The inspectors considered the following during review of the licensees' actions: (1) complete and accurate identification of problems in a timely manner; (2) identification of corrective actions which are appropriately focused to correct the problem; (3) evaluation and disposition of operability/reportability issues; (4) consideration of common cause and previous occurrences; (5) classification and prioritization of problem resolution; (6) identification of root and contributing causes of the problem; (7) completion of corrective actions in a timely manner commensurate with the safety significance of the issue; (8) implementation of interim corrective actions and/or compensatory measures to minimize the problem and/or mitigate its effects, until permanent action can be implemented.

- Containment Particulate and Gaseous Radiation Monitors (R-11/12), Containment and SFP Exhaust Ventilation Radiation Monitors (R-24A/B, R-25A/B)

#### b. Findings

No findings of significance were identified.

### .3 Operator Work-Around Annual Review

#### a. Inspection Scope

The inspectors performed a detailed review of the licensees' operator workaround list, operator burden list and control room deficiency list for Units 1 and 2 in effect on January 26, 2010. The inspectors reviewed the proposed corrective actions and schedule for each item on the lists. The inspectors reviewed the compensatory actions and cumulative effects on plant operation. The inspectors verified each item was being dispositioned in accordance with plant procedure FNP-0-ACP-17.0, Work-Around Program.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 December 12, 2009 Notification of Unusual Event (NOUE) due to Fire in Unit 1 CCW Heat Exchanger/Pump Room

a. Inspection Scope

On December 7, 2009, the licensee started preparatory work on piping support components for a permanent modification to Unit 1 FCV-3009A, which controls SW exiting the 1A CCW Heat Exchanger. These activities continued on December 12, 2009, and included lead abatement and welding grinding activities to piping supports for the valve. A fire started in debris left in the area after work ended on December 12, 2009. The inspectors reviewed station documents detailing the work scope, control of fire watches, and station ingress and egress logs. The inspectors reviewed the requirements of FNP-0-AP-38, Use of Open Flame, and the actual open flame permit; the administrative controls required by the Farley UFSAR; and the fire hazard analysis for the above associated area. The inspectors reviewed the licensee's root cause determination of the fire, interviewed station personnel, and licensee corrective actions.

b. Findings

Introduction A Green, self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings, was identified for the licensee's failure to maintain combustible materials at least 35 feet from the work area. This resulted in the occurrence of a fire in the Unit 1 CCW heat exchanger/pump room.

Description Unit 1 entered a NOUE emergency action level on December 12, 2009, when a fire occurred in the CCW heat exchanger/pump room. The fire occurred near the SW supply to 1A CCW heat exchanger isolation valve Q1P16V003A. The licensee entered FNP-0-AOP-29.0, Plant Fire, after receiving the report of fire at 6:22 PM. Plant stability was affected, in that, the control room operators swapped the CVCS charging pump suction to the RWST (required by above procedure), causing turbine load to be reduced to maintain RCS temperature. The fire brigade proceeded to the fire area and reported the fire had been extinguished at 6:47 PM (23 minutes later). The licensee performed visual inspections of the outside of the motor operated isolation valve. Flames melted the insulation on the isolation valve. The motor and internal gearing mechanism of the isolation valve was not inspected. The licensee did cycle the valve which opened and closed with no evidence of degradation.

During the morning and early evening of December 12, 2009, licensee personnel performed lead abatement on piping supports to be modified for the installation of FCV-3009A, SW outlet of the 1A CCW heat exchanger. Personnel placed a Klien canvas tool bag on scaffolding located in the area and a poly bag and vacuum underneath the scaffold, which was established as a material storage area. Additionally, a broom, dust

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pan, and a partially full poly bag were placed beneath the scaffold. Welding personnel entered the area and performed welding/grinding activities until approximately 5:00 PM. Workers placed debris and other work-related material in a concentrated area under the work area and left the work site at approximately 5:30 PM.

FNP-0-AP-38.0, Figure 1, is the licensee's Open Flame Permit providing authorization to commence "hot work," and provides instructions to the Group Foreman and Open Flame Fire Watch. A copy of this document is required to be maintained on hand by the job site worker. The Group Foreman inspects the work area and confirms precautions have been taken to prevent the fire. One of the seven precautions includes verification that floors are swept clean of combustibles; the combustible floor is wet-down or covered; no combustibles are present; combustibles are covered; wall and floor openings are covered; and covers are suspended beneath work to collect sparks. Another precaution requires the Group Foreman to brief the Open Flame Fire Watch of their duties. The inspectors also inspected the fire area and reviewed pictures taken by the licensee of the fire remains. These activities indicate combustible material was within 35 feet of the work area, which is prohibited by the Open Flame Permit.

Analysis The licensees' failure to maintain combustible material at a distance of 35 feet or greater from the "hot work" area as required by station procedure FNP-0-AP-38 was a performance deficiency. The finding was more than minor because it adversely affected protection against the external factors attribute of the IE cornerstone to limit the likelihood of events upsetting plant stability, as described above, and challenging critical safety functions during shutdown (CCW equipment in the fire area), as well as power operations. Specifically, this finding resulted in upsetting plant stability and potentially affected plant safety-related equipment. This finding was assessed using the Phase 1 screening worksheets of Appendix 4 and Appendix F of MC 0609, SDP, and determined a Phase 2 analysis was required. Fire Damage State (FDS) 0 was assigned to the actual fire and any postulated fires due to the performance deficiency. FDS 0 indicated that no functions failed as a consequence of these fires. In the actual fire there was no functional damage to any target. Also, the peak heat release had happened and passed when the fire was extinguished. Consistent with Inspection Manual Chapter 0609, Appendix F, a maximum heat release rate of 200 KW was selected for the postulated transient combustible fires. No targets were observed in the zone of influence where the combustible material was located. Under step 2.2 of Appendix F performance deficiencies associated with FDS 0 fires were not analyzed in the Fire Protection Significance Determination Process as a risk contributor. Therefore, the finding was determined to be of very low safety significance (Green). A contributing cause of the finding is the failure of supervisory personnel to ensure the area was free of combustible material as required by FNP-0-AP-38 and the actual open flame permit. Therefore, this finding was assigned a cross-cutting contributing cause related to the Human Performance work-practices component, and its aspect of the licensee ensures supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported (H.4(c))

Enforcement 10 CFR 50, Appendix B, Criterion V states in part that, "activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with

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these instructions, procedures, or drawings.” Contrary to the above, on December 12, 2009, licensee personnel allowed combustible materials within 35 feet of the work area, which were later ignited by a hot particle from “hot work.” This condition existed for approximately five hours, and the fire burned for approximately 23 minutes until extinguished by the station’s fire brigade. Because the finding is of very low safety significance and has been entered into the licensee’s CAP as CR 2009114825, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000348/2010002-04, Failure to Maintain Control of Combustible Material.

#### 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, ensuring 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. The quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspector’s normal plant status reviews and inspection activities.

###### b. Findings

No findings of significance were identified.

##### .2 Institute of Nuclear Power Operations (INPO) Report Review

During this inspection period the final INPO Evaluation Report dated January, 2010 was reviewed. The report contained no safety issues not already known by the NRC.

#### 4OA6 Meetings, Including Exit

On April 8, 2010, the NRC inspectors presented the inspection results to Mr. Randy Johnson and other members of the Farley Nuclear Plant staff who acknowledged the findings. The NRC confirmed proprietary information was properly identified and controlled during this inspection.

#### 4OA7 Licensee Identified Violations

None

ATTACHMENT: SUPPLEMENTAL INFORMATION

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## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee personnel

K. Armstrong, Emergency Preparedness Supervisor  
M. Byrd, Mechanical/Civil Design Supervisor  
B. Griner, Engineering Support Manager  
P. Hayes, Engineering Director  
L. Hogg, Security Manager  
J. Horn, Site Support Manager  
J.R. Johnson, Site Vice President  
T. Livingston, Chemistry Manager  
H. Mahan, Licensing Engineer  
R. Martin, Technical Services Manager  
D. McInnes, Engineer - Engineering Support  
B.D. McKinney, Licensing Supervisor  
C. Medlock, Site Design Manager  
W. Oldfield, Fleet Oversight Supervisor  
L. Pattilo, Engineer - Engineering Support  
J. Sloan, Sr. Engineer - Engineering Support  
G. Slone, Engineer - Engineering Support  
W. Sorrell, Engineer – Site Design  
R. Wells, Outage and Scheduling Manager  
T. Youngblood, Plant Manager

#### 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

None

#### Opened and Closed

05000348/2010002-01	NCV	Failure to Control Combustible Material in a No Intervening Combustible Allowed Area of the Plant (Section 1R05)
05000364/2010002-02	NCV	Failure to Re-Evaluate Significant Changes in Assumption to Prompt Operability Determination of Unit 2 TDAFW Pump (Section 1R15)
05000348/364/2010002-03	NCV	Violation of Technical Specification 5.4.1 for Failure to Maintain Procedures for Full Flow Recirculation After a Loss of Coolant Accident (Section 1R17)

05000348/2010002-04

NCV Failure to Maintain Control of Combustible Material  
(Section 40A3)

Closed

None

Discussed

None

## **LIST OF DOCUMENTS REVIEWED**

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

#### Condition Reports:

2010100028, 2009100392, 2009105387, 2009106504, 2009110819, 2009113168, 2009113177, 2009114278

#### Procedures:

FNP-0-AOP-21.0, Severe Weather, Revision 27  
FNP-0-SOP-0.12, Cold Weather Contingencies, Version 15.0

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

#### Documents:

FNP-1-SOP-36.0, Plant Electrical Distribution Line-Up, Version 15.0  
FNP-2-SOP-36.0, Plant Electrical Distribution Line-Up, Version 9.0  
FNP-1-SOP-36.2, 4160V AC Electrical Distribution System, Version 22.0  
FNP-2-SOP-36.2, 4160V AC Electrical Distribution System, Version 27.0  
FNP-1-SOP-36.3, 600, 480 and 208/120 Volt AC Electrical Distribution System, Version 60.0  
FNP-0-SOP-38.0-1-2A, 1-2A Diesel Generator and Auxiliaries, Revision 3.0  
FSAR 8.3 Onsite Power Systems, Revision 16

#### Drawings:

D-203096, Loads Diagram (Emergency), Version 10.0  
D-207000, Single Line-Electrical Auxiliary System (Normal - 4160V & 600V), Version 23.0  
D-207001, Single Line-Electrical Auxiliary System (Emergency - 4160V & 600V), Revision 18.0

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

Condition Reports: 2009114825, 2009114934, 2009115047, 2009115073

#### Documents:

A-350971, 10 CFR 50 Appendix R Fire Protection Program for Operating Nuclear Power Plants Sec. III.G, III.J, and III.O Re-evaluation Manual  
A-506301, 10 CFR 50 Appendix R Engineering Evaluations, Version 5.0  
DCP 1039993101, Reroute 4KV Train B Power Cable for Component Cooling Water Pump 1A Farley Operating License, Appendix C  
FSAR, Section 9B

#### Drawings:

A-508650, Sheet 2, Version 2.0  
A-508650, Sheet 3, Version 4.0  
A-508650, Sheet 8, Version 3.0  
A-508650, Sheet 9, Version 12.0  
A-508650, Sheet 10, Version 3.0  
A-508650, Sheet 11, Version 1.0  
A-508650, Sheet 12, Version 2.0

A-508650, Sheet 22, Version 1.0  
A-509018, Sheet 13, Version 1.0

Procedures:

FNP-0-ACP-35.2, Flammable Material and Combustible Material Control, Version 13,  
FNP-0-AP-39, Fire Patrol and Watches, Version 16.0,  
FNP-0-SOP-0.4, Fire Protection Program Administration Procedure, Version 74.0

**Section 1R06: Internal Flood Protection**

Condition Reports:

2010102857

Documents:

Calculation BM-99-1932-001, Internal Flooding Assessment

Drawings:

D-207774, Version 2  
D-207775, Version 4

Work Orders: 2040606101, QSR31006-S091928301

**Section 1R11: Licensed Operator Requalification**

Documents:

OPS-56400A, LORT 08-10 Cycle 10, 10-S1004, Aop-2, Aop100, Sop-72.0, EEP-3, approved  
01/08/2010

**Section 1R12: Maintenance Rule Effectiveness**

Action Items:

2008205473, 2008205474, 2008205475, 2008205476, 2008205477, 2008205478, 2008205480,  
2008205481, 2008205482, 2008205483, 2008207418, 2008207419

Condition Reports:

2008100851, 2008102325, 2008103413, 2008103418, 2008104703, 2008107536, 2008109901,  
2008110439, 2009103812, 2009105587, 2009109178, 2009114968, 2009115293

Documents:

Completed surveillances from 12/01/2009 – 12/15/2009 for FNP-1-STP-71.0, Main Control  
Room Remote Valve Verification, Version 20.0

Procedures:

FNP-0-EMP-1701.01, Electrical Equipment Condition Testing (Meggering), Version 13.0  
FNP-0-MP-13.15, Checking Governor Speed Setting Stop Adjustments of 1C and 2C Diesel  
Engines, Version 8.0  
FNP-0-MP-78.0, Governor Speed Setting Adjustment for Diesel Generator 1-2A, 1B, or 2B,  
Version 12.0

FNP-1-STP-71.0, Main Control Room Remote Valve Verification, Version 20.0

Work Orders:

1081696301, 1092869301, 2081696401, 2082432601, S081526901, S081641801, S081696501, S081696601

**Section 1R15: Operability Evaluations**

Condition Reports:

2010100260, 2010100404, 2010100733, 2010100775, 2010100819, 2010100820, 2010102754, 2009106789, 2009108100, 2009113434

Procedures:

FNP-0-ETP-4574.0, Gas Accumulation Monitoring and Trending, Version 6.0  
 FNP-2-SOP-2.1, App. R, Chemical and Volume Control System Plant Startup and Operation, Version 106.0  
 FNP-1-STP-20.0B, Penetration Room Filtration System Train A and Train B Quarterly Operability and Valve Inservice Test, Version 47.0  
 NMP-AD-012, Operability Determinations and Functionality Assessments, Version 7.0  
 NMP-AD-012-F03, Immediate Determination of Operability (IDO) Template, Version 1.0  
 NMP-ES-024-511, Ultrasonic Thickness Examination Procedure, Version 1.0

Drawings:

D-175022, Sheet 1, Revision 30  
 D-175022L, Sheet 1, Revision 1

Documents

Calculation SS-2010100260-001, Flaw Evaluation for Service Water 1" Drain Line  
 OD-09-02, Prompt Determination of Operability  
 OD-10-04, Prompt Determination of Operability  
 TS 3.6.6, Containment Spray and Cooling Systems  
 TS 3.7.12, Penetration Room Filtration (PRF) System

Work Orders:

1090397201, 2071401801, 2091932401, 2101047101, 2101068403, 2101068404, 2101217201

**Section 1R17: Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications**

Calculations

E-095, Auxiliary Building Battery Capacity and Voltage Evaluation, Revision 9  
 E-115, Auxiliary Building Battery – DC Control Circuit Lengths, Revision 4  
 MC-F-07-0018, (Calc. 38.03) Containment Sump Levels During Recirculation, Version 7.0  
 MC-F-07-0056, Snubber Reduction – Piping Stress Analysis of Containment Spray, Version 1.0  
 MC-F-07-0057, Containment Spray System, Version 1.0  
 MC-F-07-0069, Unit 2 Containment Heat Sink Margin Tracking Calculation, Version 1.0  
 MC-F-07-0075, Containment Spray Header Fill Time, Version 1.0  
 MC-F-08-0116, Input to Diesel Dynamic Study, 09/08

SE-94-0470-001, Unit 1 As Build Load Study, Revision 5  
 SM-1050912301-001, NPSH Calculation from Containment Sump to the Residual Heat Removal (RHR) Pumps – Recirculation Mode, Version 3.0  
 SM-1050912301-002, NPSH Calculation from Containment Sump to the Containment Spray (CS) Pumps - Recirculation Mode, Version 3.0  
 SM-2050912001-006, SBLOCA Vortex and Air Ingestion of Partially Submerged Sump, Version 1.0

#### Condition Reports

CR 2009107961, RWST May Be Impacted if the RWST is Aligned to the SFP Purification Loop

#### Condition Reports Written as a Result of the Inspection

CR 2010101103, ESP-1.3 Containment Sump Level Low Limit Not Revised  
 CR 2010101019, Designated Operator Assigned to Isolate RWST Cannot Be Assigned to Fire Brigade

#### Completed Test Procedures

FNP "At the Valve" Test Data Sheet for Q1N21MOV3232A performed on November 11, 1989; April 14, 1994; March 31, 1997; and October 4, 2007

#### Design Change Packages

DCP 1050912301, ECCS Sump Screens, Version 4.0  
 DCP 1051571101, Replace Unit 1 Service Water Pumps, Version 12.0  
 DCP 2050912001, Unit 2 Containment Sump Screen Modifications, Version 9.0  
 DCP 2062800201, Unit 2 Containment Spray Full Flow Test Line, Version 6.0  
 DCP 2070420201, Removal of Unit 2 Auxiliary Building Stairwell No. 2 Sump Pumps, Version 3.0  
 DCP 2071559501, Replace TDAFW Pump Minimum Flow Line Orifice N2N23FO3219, Version 4.0  
 DCP 2072448001, New Air Cylinders Installed for the Downstream MSIV's, Version 4.0  
 DCP C070799001, Replacement of Diesel Generator Building Roof, Version 3.0  
 MDC 2070508101, MOV 8811 A & B Extended Open Torque Switch Bypass Setting, Version 1.0  
 MDC 2070508501, Extend the Open Torque Switch Bypass for Q2E13MOV8826A and B, Version 1.0  
 MDC 2072729301, Q2E11MOV8706 A(B) and Q2E11MOV8812A(B) Torque Switch Bypass Setting, Version 1.0  
 MDC 2090693201, Q2E21MOV8100 RCP Seal Water Return Isolation, Revision 1

#### Documentation of Engineering Judgment

DOEJ-FM1081659901, Seismic Qualification of River Water Pump Motor for Replacement of Service Water Pump Motor, 08/08  
 DOEJ-FRC092028601-M001, Effect of a Refueling Water Purification Line Break on RWST Level, ECCS Pumps NPSH and ECCS Screen Vortexing, Version 1.0

#### Drawings

A-170059, Service Water Lube and Cooling Water Pressure Control to Service Water

## Pumps Sheet 206, Revision 2

D-170113, P&amp;ID Service Water Pumps Cooling and Lube Water System, Version 28.0

D-170119, Service Water System Sheet 1, Revision 34

D-171870, Architectural Service Water Intake Structure Plan, Revision 12

D-172749, Service Water Pump 1C – Bus 1K, Revision 12

D-175043, P&amp;ID – Spent Fuel Pool Cooling System Sheet 1, Revision 26

D-177186, Elementary Diagram Auxiliary Feedwater Pump 1B, Revision 12

D-177193, Elementary Diagram Residual Heat Removal Pumps, Revision 11

D-177646, Elementary Diagram Loading Sequencer B1G ESS, Revision 16

D-181900, Installation Details for Pressure Transmitters Sheet 2, Revision 6

D-181900, Installation Details for Pressure Transmitters Sheet 3, Revision 2

D-200014, Service Water Pumps Cooling and Lube Water System, Revision 34

D-205038, P&amp;ID – Safety Injection System Sheet 1, Revision 36

D-205038, P&amp;ID – Safety Injection System (Containment Spray) Sheet 3, Revision 29

D-205043, P&amp;ID – Spent Fuel Pool Cooling System Sheet 1, Revision 26

U611594, Cooling Coil for Allis Chalmers Motors, Revision 1

U175792, Wiring Diagram Compartment No 10 4kV Bus 1G, Revision 1

Full Evaluations

1-DT-07-R19-920, Battery Units and Lighting Unit 2A TRN Cable Tunnel, Version 1.0

2-DT-07-V46-00493, Radioactive Lab AHU Tagged Out &gt;90 Days, Version 1.0

DCP 1050912301, Containment Sump Screen Modifications, Version 4.0

DCP 2050912001, Containment Sump Screen Modifications, Version 9.0

FNP-1(2)-SOP-54.0, Spent Fuel Pit Cooling and Purification System, RWST Silica Removal By  
The Boric Acid Recovery System, Version 1.0

MDC 2090693201, Minor JOG Changes for MOV 8100

Other Documents

EGS-TR-23004-01, Instructions for Using Patel Thread Sealant P-1, Revision 1

Field MOV Data Sheet for Valve Q1E11MOV8811A, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8811B, dated January 26, 2010

Field MOV Data Sheet for Valve Q2E11MOV8811A, dated January 26, 2010

Field MOV Data Sheet for Valve Q2E11MOV8811B, dated January 26, 2010

Field MOV Data Sheet for Valve Q1E11MOV8706A, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8706B, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8812A, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8812B, dated January 27, 2010

Field MOV Data Sheet for Valve Q2E11MOV8706A, dated January 27, 2010

Field MOV Data Sheet for Valve Q2E11MOV8706B, dated January 27, 2010

Field MOV Data Sheet for Valve Q2E11MOV8812A, dated January 27, 2010

Field MOV Data Sheet for Valve Q2E11MOV8812B, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8826A, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8826B, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8826A, dated January 27, 2010

Field MOV Data Sheet for Valve Q1E11MOV8826B, dated January 27, 2010

QP010572/001, Motor Refurbish Inspect and Test, 05/02

SCM-CGDP-005, Commercial Grade Dedication Plan, Revision 11

SCM-CGDP-005.05, Commercial Grade Dedication Plan, Revision 1

Procedures

FNP-0-EMP-1130.02, Service Water and River Water Motor Replacement, Revision 10  
 FNP-0-EMP-1501.11, MOV Inspection and Adjustment, Revision 15  
 FNP-0-ESB-1.3, Farley Nuclear Plant Specific Background Document for FNP-1/2-ESP-1.3,  
 Transfer to Cold Leg Recirculation, Version 2.0  
 FNP-1-STP-22.9, Auxiliary Feedwater Pumps 1A and 1B Auto Start Test, Revision 14  
 FNP-1-STP-22.16, Turbine Driven Auxiliary Feedwater Pump Quarterly Inservice Test (Tavg  $\geq$   
 547F) With Preservice Test Appendix, Version 53.0  
 FNP-1-STP-34.2, Containment ECCS Sump Intake Inspection, Version 4.0  
 FNP-1-STP-256.16, B1F and B1G Sequencer Relays Response Time Test, Revision 17  
 FNP-1/2-EEP-1, Loss of Reactor or Secondary Coolant, Revision 29  
 FNP-1/2-ESP-1.3, Transfer to Cold Leg Recirculation, Revision 19  
 FNP-2-IMP-224.18, Containment Sump Level Calibration, Version 4.0

Screened Out Items

DCP 1051571101, Replace Unit 1 SW Pump, Version 12.0  
 DCP 1063064701, Barton EQ Seal Replacement, 11/07  
 DCP 1063327001, Bus F and G 4160 VAC Breaker Replacement, 04/08  
 DCP 1071559601, Unit 1 MCC Bucket Replacements, 02/09  
 DCP 2062245201, Replace #2 and Spare Main Transformers, 06/08  
 DCP 2062800201, Unit 2 Containment Spray Full Flow Test Line, Version 6.0  
 DCP 2072448001, New Air Cylinders Installed for the downstream MSIVs (U1-3370A, B, and  
 C), Version 4.0  
 DCP 2091575501, DG 2B Load Test Trip Circuitry from LOSP Sequencer B2G, 09/09  
 DCP C070799001, Replacement of Diesel Generator Building Roof, Version 3.0  
 ED 1071846401, Limitorque SB Actuator Motor, Revision 1  
 ED 1081003901, 125VDC 20A 2-Pole Breaker, 06/08  
 MDC 1081659901, Replace 1C SW Pump Motor with RW Motor, 09/08  
 MDC 2070508101, MOV 8811A and B Extended Open Torque Switch Bypass Setting, Version  
 1.0  
 WO 1070995001, 5500 Microfarad Electrolytic Capacitor, 03/08  
 WO S092163308, Ground Detection Relay, 08/09

Work Orders

1061909401, 1B CS Pump CTMT Sump Suction Isolation, 10/07  
 1063327009, Diesel Generator 1B, 10/07  
 1063327010, To 4160V Switchgear 1J, 10/07  
 1063327013, Component Cooling Water Pump 1A, 10/07  
 1063327014, Component Cooling Water Pump 1B, 08/07  
 1063327017, Auxiliary Feedwater Pump 1B  
 1063327019, Charging High Head Safety Injection Pump 1B, 09/07  
 1063327020, Charging High Head Safety Injection Pump 1A, 07/07  
 1063327021, Diesel Generator 1B, 10/07  
 1063327022, To 4160V Switchgear 1J, 10/07  
 1063327025, Charging High Head Safety Injection Pump 1A, 07/07  
 1063327026, Charging High Head Safety Injection Pump 1B, 09/07  
 1063327027, Residual Heat Removal LHSI Pump 1A 52-DF09, 8/07

1063327028, Auxiliary Feedwater Pump 1A 52-DF10, 09/07  
 1063327032, Component Cooling Water Pump 1A, 10/07  
 1063327033, Component Cooling Water Pump 1B, 08/07  
 1063327036, Residual Heat Removal LHSI Pump 1B 52-DG09, 11/07  
 1063327037, Auxiliary Feedwater Pump 1B 52-DG10, 11/07  
 1070145801, 1C Service Water Pump Motor, 08/08  
 1070995001, Aux Building Battery Chargers Filter Capacitor Replacement, 03/08  
 2070508101, MOV 8811 A & B Extended Open Torque Switch Bypass Setting  
 2072729301, Q2E11MOV8706 A(B) and Q2E11MOV8812A(B) Torque Switch Bypass Setting  
 2070508501, Extend the Open Torque Switch Bypass for Q2E13MOV8826A and B

### **Section 1R18: Plant Modifications**

#### Documents:

50.59 Screening/Evaluation for Unattended Data Acquisition System at SWIS  
 Prompt Determination of Operability for Service Water Pumps 1A, 1D, 1E, 2D, and 2E

#### Procedures:

FNP-0-IMP-0.13, Temporary Data Acquisition System Installation. Version 6.0

#### Work Orders:

1101132501, 1101132601, 1101132701, 2101132801, 2101132901

### **Section 1R19: Post Maintenance Testing**

#### Condition Report:

2009110151, 2009115300, 2009115328, 201010183, 2010102548

#### Documents:

RER C092678501, Reverse Flow Criteria For CCW Check Valves (Q1/2P17V0228)

#### Drawings:

D-175036, Sheet 1, Version 21.0  
 D-175037, Sheet 2, Version 34.0

#### Procedures:

FNP-1-IMP-0.11, Instrument Airline and pressure Regulator Preventative Maintenance  
 Procedure, Version 26.0  
 FNP-1-SOP-36.4, 120V AC Distribution Systems, Version 73.0  
 FNP-1-STP-47.0, Miscellaneous Valves Inservice Test, Version 38.0  
 FNP-1-STP-80.16, Degraded Grid Voltage and Loss of Voltage Protection Relays Operability  
 Test Modes 1, 2, 3, & 4, Version 25.0  
 FNP-2-STP-22.16, Turbine Driven Auxiliary Feedwater Pump Quarterly Inservice Test, Version  
 56.0  
 FNP-2-STP-23.8, Component Cooling Water Valve Inservice Test, Version 36.0

#### Work Orders:

1071407901, 1072064901, 1072851601, 1092885301, 1101017701, 1101199201, 2092216701

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

2010101555, 2010102051, 2010103101

Documents:

Surveillance Test Review Sheets, FNP-1-STP-9.0, Dated 2/12/10, 2/13/10, 2/14/10, 2/15/10  
 Surveillance Test Review Sheets, FNP-2-STP-22.1, Dated 1/23/10 @ 0146  
 Surveillance Test Review Sheets, FNP-1-STP-27.1, Dated 2/6/10 @ 0200, 1000, 1800  
 Station Logs from 2/5/10 to 2/9/10

Drawings:

D-205007, Sheet 1, Version 22.0

Procedures:

FNP-1-STP-9.0, RCS Leakage Test, Version 48.0  
 FNP-1-STP-16.1, 1A Containment Spray Pump Quarterly Inservice Test, Version 45.0  
 FNP-1-STP-18.5, Containment Minipurge and Exhaust Valve Inservice Test, Version 17.0  
 FNP-1-STP-27.1, A.C. Source Verification, Version 35.0  
 FNP-1-STP-27.2, On Site AC Distribution, Version 24.0  
 FNP-1-STP-27.3, Auxiliary Building D.C. Distribution, Version 13.0  
 FNP-1-STP-905.1, Auxiliary Building Battery Service Test, Version 20.0  
 FNP-1-STP-905.2, Auxiliary Building Battery Performance Test, Version 12.0  
 FNP-2-SOP-22.0, Appendix E, Flushing AFW Pump Suction Piping, Version 64.0  
 FNP-2-STP-22.0, Auxiliary Feedwater System, Version 64.0  
 FNP-2-STP-22.1, 2A Auxiliary Feedwater Pump Quarterly Inservice Test, Version 23.0  
 FNP-2-STP-73.1, Appendix K, Hot Shutdown Panel Operability Verification, Version 17.0

Work Orders:

1080637901, 2071428312, 2071135701, 2071086101, 2072306801, 2080644401, 2081335901

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

2009208907, 2009209409, 2009209410

Condition Reports:

2010100151, 2010102477

Procedures

FNP-1-STP-11.1, 1A RHR Pump Comprehensive Inservice Test

Documents:

Farley Unit 1 and Unit 2 Consolidated Data Entry 4.0, MSPI Derivation Report, MSPI Residual Heat Removal System, Unavailability and Unreliability Indexes Generation Date 2/15/2010  
 Unit 1 and Unit 2 Operators Logs from 1/01/2009 to 12/31/2009  
 NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6

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

### Condition Reports:

2005109602, 2009108935, 2009112120, 2009113231, 2009113785, 2010100017, 2010100280, 2010100283, 2010100377, 2008110730, 2008111471, 2009100165, 2009109125,

### Documents:

Operational Focus Performance Indicator Dashboard, (Operations Website and links; Operator Workaround, Operator Burdens, Cntrl Rm Deficiencies)  
Operator Work Around and Burden Guideline, (Operations Guidelines, Plant Farley Home page)  
Farley Long Range Plan – Radiation Monitoring System, RER1080168201`

### Procedures:

NMP-OS-006, "Operations Performance Indicators," Version 4.0  
FNP-0-ACP-17.0, "Work-Around Program," Version 5.0

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

### Condition Reports:

2009114825, 2009114934, 2009115047, 2009115073,

### Documents:

A-350971, 10 CFR 50 Appendix R Fire Protection Program for Operating Nuclear Power Plants  
Sec. III.G, III.J, and III.O Re-evaluation Manual  
A-506301, 10 CFR 50 Appendix R Engineering Evaluations, Version 5.0  
DCP 1039993101, Reroute 4KV Train B Power Cable for Component Cooling Water Pump 1A  
Farley Operating License, Appendix C  
FSAR, Section 9B

### Procedures:

FNP-0-AP-38, Use of Open Flame, Version 16.0  
FNP-0-AP-39, Fire Patrols and Watches, Version 16.0  
FNP-0-ACP-35.2, Flammable Material and Combustible Material Control, Version 13.0  
FNP-0-AOP-29.0, Plant Fire, Version 36.0