UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

May 13, 2008

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 TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000348/2008006 AND 05000364/2008006

Dear Mr. Johnson:

On April 4, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed a triennial fire protection inspection at your Joseph M. Farley Nuclear Plant, Units 1 and 2. The enclosed inspection report documents the inspection findings, which were discussed on that date with Cheri Collins and other 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 inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents three NRC-identified findings of very low safety significance (Green) which were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, 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 Crystal River Unit 3 site.

In accordance with Title 10 of the Code of Federal Regulations (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 component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at: http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Shakur A. Walker, Acting Chief,
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Inspection Report 05000348/2008006 and 05000364/2008006
w/Attachment; Supplemental Information

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Letter to J. Randy Johnson from Shakur A. Walker dated May 13, 2008

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT – NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000348/2008006 AND 05000364/2008006

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U.S. NUCLEAR REGULATORY COMMISSION (NRC)

REGION II

Docket Nos.:	50-348 and 50-364
License Nos.:	NPF-2 and NPF-8
Report Nos.:	05000348/2008006 and 05000364/2008006
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Joseph M. Farley Nuclear Plant
Location:	7388 North State Highway 95 Columbia, Alabama 36319
Dates:	March 10 – 14, 2008 (Week 1) March 31 – April 4, 2008 (Week 2)
Inspectors:	N. Merriweather, Senior Reactor Inspector (Lead Inspector) R. Fanner, Reactor Inspector D. Merzke, Senior Reactor Inspector G. Wiseman, Senior Reactor Inspector
Approved by:	Shakur Walker, Acting Chief Engineering Branch 2 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000348/2008-006, 05000364/2008-006; 03/10 - 14/2008 and 03/31 - 4/4/2008;
Joseph M. Farley Nuclear Plant, Units 1 & 2; Triennial Fire Protection Inspection.

This report covers an announced two-week triennial fire protection inspection by a team of four regional inspectors. Three Green non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (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: The team identified a non-cited violation of Technical Specification 5.4.1, Procedures, in that Units 1 and 2 post-fire safe shutdown abnormal operating procedures AOP 28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room, and AOP 28.2, Fire in the Control Room, credited diagnostic instrumentation that would have been potentially unreliable due to fire damage from a postulated fire in the control room or cable spreading room. The finding was entered into the licensee's corrective action program as Condition Report 2005103665.

  This issue is a performance deficiency because the safe shutdown procedure relies on an indication which was not protected from fire damage. The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." The finding was assigned a low degradation rating because it was determined to be a minor procedural deficiency that is compensated by operator experience or familiarity. Because the finding was assigned a low degradation rating, the team determined that this finding was of very low safety significance (Green). (Section 1R05.06)

- Green: The team identified a non-cited violation of Farley Unit 2 Operating License Condition 2.C.(6), for the licensee's failure to fully implement the approved fire protection program, in that emergency lighting units (ELUs) were not installed in all areas where local operator manual actions were required to support post-fire safe shutdown. Specifically, the team determined that there were no ELUs installed to illuminate the front panels of the Reactor Coolant Pump (RCP) switchgear, located in the Train 'A' switchgear room, where post-fire safe shutdown local operator manual actions were required to trip the RCP 4160 Volt alternating current breakers. The

finding was entered into the licensee's corrective action program under Condition Reports 2008103335, 336, and 337.

The finding is greater than minor because it is associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e., fire) and it affects the cornerstone attribute of ensuring reliability and capability of systems that respond to initiating events. Specifically, the finding adversely affected the ability to perform local operator manual actions required to achieve and maintain safe shutdown conditions following a fire in the cable spreading room. The inspectors assessed the finding using IMC 0609, Appendix F, Fire Protection Significance Determination Process. The team determined that this finding was of very low safety significance (Green) because the operators had a high likelihood of completing the task using flashlights, which operators are directed to carry with them by procedure while performing local actions. (Section 1R05.09)

- Green: The team identified a non-cited violation of Farley Unit 2 Operating License Condition 2.C.(6), for the licensee's failure to fully implement test control requirements incorporated in approved plant procedures associated with the periodic testing of emergency lighting units. As a consequence, condition reports (CRs) were not initiated as required, when battery conductance measurements did not meet acceptance criteria. The finding was entered into the licensee's corrective action program as Condition Report 2008103290.

  This issue is a performance deficiency because the licensee did not properly document ELU test failures on CRs for trending and evaluation in accordance with the surveillance test procedures. The finding involved systems or components (i.e., emergency lights) required for post-fire safe shutdown of the reactor. The finding is greater than minor because it is associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e., fire) and it affects the cornerstone attribute of ensuring reliability and capability of systems that respond to initiating events. The team determined that this finding was of very low safety significance (Green) because the operators had a high likelihood of completing the task using flashlights, which operators are directed to carry with them by procedure while performing local actions. (Section 1R05.09)

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R05 Fire Protection

This report presents the results of a triennial fire protection inspection for a plant in transition to National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition." By letter dated February 14, 2008, the licensee informed the NRC of their intent to transition the fire protection program at the Joseph M. Farley Nuclear Plant (FNP) to NFPA 805 in accordance with 10 CFR 50.48(c). This inspection was conducted in accordance with NRC Inspection Procedure (IP) 71111.05TTP, "Fire Protection-NFPA 805 Transition Period (Triennial)." The objective of the inspection was to review the FNP fire protection program (FPP) implementation based on a review of a selected sample of risk-significant fire areas. The team selected three fire areas for detailed review to examine the licensee's implementation of the FPP. The three fire areas chosen were selected based on risk insights from the licensee's Individual Plant Examination for External Events (IPEEE), information contained in FPP documents, results of prior NRC triennial fire protection inspections, and in-plant tours by the team. Section 71111.05-05 of the IP specifies a minimum sample size of three fire areas. Detailed inspection of these three fire areas fulfills the procedure completion criteria. The areas chosen were:

- Fire Area (FA) 2-40, Fire Zone (FZ) 40-A (Room 2318), Unit 2 Auxiliary Building (AB) Elevation 139 foot South West (SW) Quadrant
- FA 2-41, FZ 41-A (Rooms 2335, 2343, 2346), Unit 2 AB Elevation 139 foot SW Quadrant
- FA 1-88, FZs 88A thru F, Unit 1 Turbine Building North Elevation 155 foot

The team evaluated the licensee's FPP against applicable requirements, including Operating License Conditions 2.C.(4) (for Unit 1) and 2.C.(6) (for Unit 2); Title 10 of the Code of Federal Regulations, Part 50 (10 CFR 50), Appendix R; 10 CFR 50.48; commitments to Appendix A of Branch Technical Position Auxiliary and Power Conversion Systems Branch 9.5-1; NFPA Codes of record; the fire protection program document and the fire hazards analysis described in the FNP Updated Final Safety Analysis Report (UFSAR); related NRC safety evaluation reports (SERs); and plant Technical Specifications. The team evaluated each selected FA and/or FZ against these requirements. The specific documents reviewed by the team are listed in the Attachment.

.01 Post-Fire Safe Shutdown From Main Control Room (Normal Shutdown)

a. Inspection Scope

Methodology

The team reviewed applicable portions of the Farley Units 1 and 2 post-fire safe shutdown analysis (SSA), "10 CFR Part 50 Appendix R Fire Protection Program for Operating Nuclear Power Plants, Sec. III.G, III.J, and III.O" (Design Drawing A359071), abnormal operating procedures (AOPs), piping and instrumentation drawings (P&IDs), applicable electrical one-line drawings, the UFSAR, and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from the main control room (MCR) for postulated fires in FA 2-41, FZ-41-A; and FA 1-88, FZs 88A through F. This review also included verification that shutdown from the MCR could be performed both with and without the availability of offsite power. Plant walkdowns were performed to verify that the plant configuration was consistent with that described in the fire hazards analysis (FHA) and SSA. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring instrumentation, and support system functions. The team reviewed the systems and components credited for use during this shutdown method to verify that they would remain free from fire damage.

Operational Implementation

The team reviewed the adequacy of procedures utilized for post-fire safe shutdown (SSD) and performed a walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also reviewed selected operator actions to verify that the operators could reasonably be expected to perform the specific actions within the time required to maintain plant parameters within specified limits.

The team reviewed and walked down applicable sections of fire response procedure AOP 29.1, "Plant Stabilization in Hot Standby and Cooldown Without "A" Train AC or DC Power," for FA 2-41, FZ 41-A.

The team reviewed local operator manual actions to ensure that the actions could be implemented in accordance with plant procedures in the times necessary to support the SSD method for the applicable FA and to verify that those actions met the criteria in Enclosure 2 of NRC IP 71111.05TTP. The team reviewed CR 2006108310, Southern Nuclear Operating Company's Position for Operator Manual Actions Related to 10 CFR Part 50 Appendix R, as Described in NRC Regulatory Information Summary (RIS) 2006-010, to verify that the licensee had identified operator manual actions for post-fire SSD in 10 CFR 50, Appendix R Section III.G.2 designated areas and had plans in place to keep CR 2006108310 open to assess and track resolution of the manual action issue as part of the plant-wide risk evaluation for transition to NFPA 805.

b. Findings

No findings of significance were identified.

.02 Protection of Safe Shutdown Capabilities

a. Inspection Scope

For the selected FA/FZs, the team evaluated the potential for fires, the combustible fire load characteristics, and the potential exposure fire severity. The team reviewed the FNP UFSAR Appendix 9B, FHA, procedure FNP-0-SOP-0.4, Fire Protection Program Administration; and, selected plant administrative procedures which established and implemented controls and practices to prevent fires and to control the storage of permanent and transient combustible materials and ignition sources. This review was conducted to determine if the licensee's commitments, as established in the FPP licensing basis documents, were satisfied and whether the licensee was taking reasonable precautions to prevent fires from starting. The team also reviewed selected licensee fire incident reports, maintenance procedures, housekeeping inspection reports, and general employee training covering control of ignition sources and transient combustibles. These reviews were accomplished to ensure that the licensee had properly evaluated in-situ combustible fire loads, controlled hot-work activities, and limited transient fire hazards in a manner consistent with the plant administrative and FPP procedures. Additionally, the team walked down the selected plant FA/FZs to observe whether programmatic procedures for limiting fire hazards, waste collection, housekeeping practices, and cleanliness conditions were being implemented consistent with the updated UFSAR, administrative procedures, and other FPP procedures. The specific documents reviewed are listed in the Attachment.

Through a combination of design information review and in-plant inspection, the team assessed whether the licensee's SSA properly evaluated SSD capability as compared to the separation and design requirements of Appendix R, Section III.G. The team performed reviews aimed at determining whether at least one train of SSD equipment was protected from fire damage. For example, in FA 2-41, five cable raceways (cable trays and conduits) located directly above 600V Load Center 2A and its associated transformer (raceways AE27, AEF33, AHL464, AHL462, and BG258) could be subject to damage due to a fire which could start at the load center or the transformer. Therefore, the team reviewed the function of all the cables routed in those raceways in terms of their importance to SSD. In addition, the routing of cables for selected equipment utilized in the shutdown procedures for FA 2-40 was reviewed.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

For the selected FA/FZs, the team evaluated the adequacy of fire barrier walls, ceilings, floors, mechanical and electrical penetration seals, fire doors, fire dampers, and protected structural steel. The team reviewed the installation, repair, and qualification records for a sample of penetration seals to ensure the seal material was of the appropriate fire rating and that the as-built configurations met the engineering design, standard industry practices and were either properly evaluated or qualified by appropriate fire endurance tests which established the ratings of fire barriers. The team also reviewed licensee evaluations of non-standard fire barrier penetration seals for the selected FA/FZs. In addition, the team reviewed license documentation, such as NRC SERs, and exemptions from NRC regulations to verify that passive fire protection features met license commitments.

The team walked down accessible portions of the selected FA/FZs to observe material condition and the adequacy of design of fire area boundaries to ensure they were appropriate for the fire hazards in the area. Also, engineering change documentation and relevant installation, and test qualification records related to installed Meggitt Safety Systems Incorporated (MSSI) Mineral Insulated (MI) fire-rated control cables in lieu of Kaowool fire barrier wraps for protection of certain SSD diesel generator control circuits in FAs 2-41 and 2-42 were reviewed. This was accomplished to verify that the selected MI cable raceways met their design and licensing basis. The documents included in the reviews of the selected fire protection features are listed in the Attachment.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

a. Inspection Scope

The team reviewed the fire protection water supply system, operational valve lineups, cable routing information, and system availability associated with the electric motor-driven fire pump, the diesel engine-driven fire pumps, and, fire main piping system. Using operating and valve alignment procedures as well as engineering drawings, the team examined selected fire pumps and accessible portions of the fire main piping system to evaluate material condition, consistency of as-built configurations with engineering drawings, and to verify correct system valve lineups. The fire protection water delivery and supply components that were shared between the units were reviewed to assess if they could be damaged or inhibited by fire-induced failures of electrical power supplies or control circuits. In addition, the team reviewed periodic surveillance procedures for the fire pumps and fire main loop to assess whether the test program was sufficient to validate proper operation of the fire protection water supply system in accordance with its design requirements. The fire protection components inspected are listed in the Attachment.

The appropriateness of detection and suppression methods for the category of fire hazards in the selected areas was evaluated. With respect to FA 2-40, the team compared detector layout drawings, ceiling beam location drawings, ceiling beam schedule drawings and actual field locations of detectors against the NFPA 72E code of record (1975 edition) for detector spacing and placement requirements. The direct application carbon dioxide (CO_2) system within the FA 2-41 switchgear and load center cabinets was evaluated. The closed head cable tray water spray systems and manually operated total flooding CO_2 system in FA 2-40 were inspected. Additionally, the inspectors reviewed the surveillance test procedures for the detection and alarm systems to determine compliance with UFSAR Section 9B, Attachment C, Table 9B.C-1.

Fire hose and standpipe systems were evaluated from source to discharge device to verify that adequate pressure was available at hose nozzles where 100 feet of fire hose was being used. During plant walkdowns, the team observed placement of the fire hoses and fire extinguishers to verify they were not blocked and were consistent with the FZ data sheets and FPP documents. The team also reviewed the fire brigade staging and dress-out areas to assess the operational readiness of fire fighting and smoke control equipment. The fire brigade personal protective equipment, self-contained breathing apparatuses (SCBAs) and SCBA cylinder refill capability were reviewed for adequacy and functionality. In addition, the team reviewed operator and fire brigade staffing, fire emergency brigade response reports, offsite fire department communications and staging procedures, FZ data sheets, fire brigade qualification training, and the fire brigade drill program procedures. Seven fire brigade response-to-drill scenarios and associated brigade drill evaluations/critiques that transpired over the last 3 years were reviewed. The overall criterion applied to this portion of the inspection was that the fixed manual fire brigade suppression had the capacity and capability to suppress credible fires in the selected FA/FZs. The documents included in the reviews are listed in the Attachment.

b. Findings

No findings of significance were identified.

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed document reviews (heating, ventilation, and air conditioning (HVAC) system drawings, configuration drawings of electrical raceways and safe shutdown components, and building drain system drawings) and in-plant walk downs to verify that redundant trains of systems required for hot shutdown were not subject to damage from fire suppression activities or from the rupture, or inadvertent operation of, fire suppression systems. The team considered the effects of water, drainage, heat, hot gasses, and smoke that could potentially damage all redundant trains or inhibit access to alternate shutdown equipment or performance of alternate safe shutdown operator actions. The documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

.06 Post-Fire SSD From Outside the Main Control Room (Alternative Shutdown)

a. Inspection Scope

Methodology

The team reviewed applicable portions of the Farley Units 1 and 2 alternative shutdown analysis, 10 CFR Part 50 Appendix R Fire Protection Program for Operating Nuclear Power Plants Alternative Shutdown Capability (Design Drawing A-350970, Rev. 13), the UFSAR, the AOPs, P&IDs, electrical drawings, and other supporting documents for postulated fires in FA 2-40, FZ 40-A. The reviews focused on ensuring that the required functions for post-fire SSD and the corresponding equipment necessary to perform those functions were included in the procedures. The review included assessing whether hot and cold shutdown from outside the MCR could be implemented, and that transfer of control from the MCR to the dedicated shutdown control stations could be accomplished. This review also included verification that shutdown from outside the MCR could be performed both with and without the availability of offsite power.

Plant walkdowns were performed to verify that the plant configuration was consistent with that described in the SSA. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring instrumentation, and support system functions. The team reviewed the systems and components credited for use during this shutdown method to verify that they would remain free from fire damage. The team also followed up on the issues identified in Unresolved Item (URI) 05000348, 364/2005006-001, Fire Procedure Did Not Identify the Appropriate Diagnostic Instruments as it related to procedures AOP 28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room, and AOP 28.2, Fire in the Control Room.

Operational Implementation

The team reviewed the training lesson plans for licensed and non-licensed operators to verify that the training reinforced the shutdown methodology in the SSA and AOPs for the selected FA. The team also reviewed shift turnover logs and shift manning to verify that personnel required for SSD using the alternative shutdown systems and procedures were available on-site, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire SSD and performed a walk-through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also reviewed selected operator actions to verify that the operators could reasonably be expected to perform the specific actions within the time required to maintain plant parameters within specified limits.

Time critical actions reviewed included: electrical power distribution alignment, establishing control at the dedicated shutdown control stations, establishing reactor coolant makeup, and establishing decay heat removal. The team reviewed and walked down applicable sections of AOP 28.1, "Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room."

The team also reviewed the periodic test procedures and test records of the alternative shutdown transfer capability, and instrumentation and control functions, to ensure the tests were adequate to verify the functionality of the alternative shutdown capability. Electrical schematics were reviewed to verify that circuits for SSD equipment, which could be damaged due to fire, were isolated by disconnect switches and by swapping power supplies for selected Motor Control Centers (MCCs). In addition, the team reviewed wiring diagrams for instrumentation located on the dedicated shutdown control stations to verify that necessary process monitoring was available as required by 10 CFR 50, Appendix R, Section III.L.

b. Findings

Introduction: The team identified a Green non-cited violation of Technical Specification 5.4.1, Procedures, for Units 1 and 2, in that post-fire safe shutdown procedures AOP 28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room, and AOP 28.2, Fire in the Control Room, were inconsistent with the SSA in that they credited diagnostic instrumentation that would have been potentially unreliable due to fire damage from a postulated fire in the cable spreading room or MCR. The finding was entered into the licensee's corrective action program as CR 2005103665.

Description: The following discussion centers on Unit 2 procedures for a fire in the cable spreading room or MCR, however, it is also applicable to Unit 1. For a fire in the Unit 2 cable spreading room, procedure AOP 28.1, "Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room," would be utilized to safely shutdown the plant from the dedicated Hot Shutdown Panels (HSPs). The procedure steps are also applicable to AOP 28.2, "Fire in the Control Room." The procedures direct operators to trip the RCPs in the event seal injection and component cooling water (CCW) flow to the RCP thermal barrier heat exchangers are lost, or if charging flow is lost with, RCP seal leakoff less than 2.5 gallons per minute. Additionally, Step 7.1 of AOP 28.1 or step 8.1 of AOP 28.2, states to check any selected instrument air compressor is running.

The licensee stated, and the team verified, that if main control board (MCB) indication is lost for CCW flow, local indicator Q2P17FISH3045 in the 121 ft boron thermal regeneration chiller room is available to determine if CCW flow is available to the thermal barrier heat exchangers. Loss of the operating train of charging could be determined by indication of charging flow at the HSP using flow indicator FI-122B, which is electrically isolated, and thus, free from fire damage due to a fire in the cable spreading room or control room. The licensee further states, that with a loss of charging flow, as indicated at the HSP, seal cooling, and thus, seal leakoff, is considered lost. If indication for an operable instrument air compressor is not available at the MCB, an operator can locally determine if an air compressor is running. Additionally, both AOPs state that if it cannot be determined if a Unit 2 air compressor can be placed in service and the 1C air compressor is available, then align the 1C air compressor to Unit 2. Finally, the licensee

states that if MCB indication for RCP seal injection flow is lost, then local indication (Q2E21FI130B, Q2E21FI127B, and Q2E21FI124B), located in the 121 ft piping penetration room, is available. The team determined that these local flow indicators are remote indicators which receive a signal from the individual flow transmitters for each RCP seal injection line. The team determined that cables for these local flow indicators pass through the cable spreading room and the main control room, are subject to fire damage, and therefore, the flow indicators would be considered unreliable. Loss of seal injection flow and CCW flow to the thermal barrier heat exchangers requires that operators trip the RCPs and isolate RCP seals and thermal barriers as described in the AOP, in order to prevent damage to the RCP seals, resulting in a potential loss of coolant accident. If CCW flow is available, as determined by the local flow indicator, then isolation of the RCP seals is not required. If CCW flow is lost, operators would check seal injection flow using potentially unreliable indicators. If the seal injection flow indicators fail low, then operators would determine that seal injection is lost, and perform the seal isolation procedure. If the flow indicator fails high, then operators would have to recognize that the indicators are unreliable, and conservatively assume that seal injection flow is lost, requiring isolation of the seals.

Analysis: This issue is a performance deficiency because the safe shutdown procedure relies on an indication which is not protected from fire damage. The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors assessed the finding using IMC 0609, Appendix F, “Fire Protection Significance Determination Process.” The finding was assigned a low degradation rating because it was determined to be a minor procedural deficiency that is compensated by operator experience or familiarity. Because the finding was assigned a low degradation rating, the team determined that this finding was of very low safety significance (Green).

Enforcement: Technical Specification 5.4.1 states that written procedures shall be established, implemented, and maintained covering the activities in Appendix A of Regulatory Guide 1.33, Revision 2, dated February 1978. Regulatory Guide 1.33, Appendix A, Section 6.v, requires procedures for combating emergencies such as plant fires. AOP 28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room, and AOP 28.2, Fire in the Control Room, provided instructions necessary to achieve and maintain post-fire SSD of Farley Units 1 and 2 in the event SSD could not be performed from the MCR due to a fire in the cable spreading room or control room.

Contrary to the above, on April 4, 2008, AOP 28.1 and AOP 28.2 were identified to be inconsistent with the SSA for the fire areas, in that, they both credited the use of RCP seal injection flow indicators that would potentially be unreliable for fires in the MCR and cable spreading room. This problem has existed in the procedures for many years. Because this finding is of very low safety significance and was entered into the licensee’s corrective action program (CR 2005103665), this finding is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. This finding is identified as NCV 05000348, 364/2008006-01, Fire Procedure Credits Unreliable Indication.

.07 Circuit Analyses

a. Inspection Scope

This segment is suspended for plants in transition because a more detailed review of cable routing and circuit analysis will be conducted as part of the fire protection program transition to NFPA 805. However, the team did review the cable routing for a select sample of SSD and fire protection equipment to assess the adequacy of the licensee's fire response procedures in the selected fire areas. The cable routing information was reviewed to determine if the SSD equipment was routed outside the fire area of concern or protected from fire damage. The components reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

.08 Communications

a. Inspection Scope

The team reviewed the plant communications systems that would be relied upon to support fire event notification and fire brigade fire fighting activities. The team also reviewed selected fire brigade drill evaluation/critique reports to assess proper operation and effectiveness of the fire brigade command post portable radio communications during fire drills and identify any history of operational or performance problems with radio communications during fire drills. In addition, the team verified the radio battery usage ratings for the fire brigade radios stored and maintained on charging stations.

b. Findings

No findings of significance were identified.

.09 Emergency Lighting

a. Inspection Scope

The team reviewed the adequacy of the emergency lighting used to support plant personnel in the performance of alternative safe shutdown functions outlined in the fire response procedures. The team reviewed documentation to determine if adequate emergency lighting equipment would be available consistent with the licensing basis. The team also reviewed emergency lighting maintenance and test records to ensure lighting was adequately sized, maintained, and tested consistent with license requirements.

In addition, the team observed whether emergency exit lighting was provided for personnel evacuation pathways to the outside exits as identified in the NFPA 101, Life Safety Code, and the Occupational Safety and Health Administration (OSHA) Part 1910, Occupational Safety and Health Standards. This review also included examination of

whether backup ELUs were provided for the primary and secondary fire emergency equipment storage locker locations and dress-out areas in support of fire brigade operations should power fail during a fire emergency.

b. Findings

1) Areas Where Operator Manual Actions (OMAs) Are Performed Did Not Have Emergency Lighting Units (ELUs) Installed

Introduction: The team identified a Green non-cited violation of Farley Unit 2 Operating License Condition 2.C.(6), for the licensee's failure to fully implement the approved fire protection program, in that ELUs were not installed in all areas where local operator manual actions were required to support post-fire safe shutdown. Specifically, the team determined that there were no ELUs installed to illuminate the front panels of the RCP switchgear, located in the Train 'A' switchgear room, where post-fire safe shutdown local operator manual actions were required to trip the RCP 4160 Volt alternating current breakers.

Description: The team reviewed and walked down applicable sections of fire response procedure FNP-2-AOP- 28.1, "Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room," to review the procedural guidance and assess the local operator manual actions in support of safe shutdown operation in the event of a fire in the Unit-2 cable spreading room. FNP-2-AOP- 28.1, Step 18, states to locally trip all RCPs. In order to perform this step, an operator is required to open the breaker door, verify the breaker is open by observing the mechanical indicator, open the DC control power breaker, and pull the fuse block, invert it, and replace the fuse block. During the walkdown, the team noted that there was no ELU installed to illuminate the area around the breakers for RCP 2B and 2C. A subsequent blackout test confirmed there was insufficient light available for an operator to safely perform this step. Additionally, the lighting for RCP 2A was installed so far away that the upper half of the breaker containing the fuse block was not illuminated.

The team determined that this action would not be feasible if normal lighting were lost and no ELUs were available. The team noted that the licensee's FPP (Section 3.K of UFSAR Appendix 9B) stated that for all areas except the Main Control Room, emergency lighting units with an 8-hour battery pack are provided in all areas needed for the operator to perform safe shutdown functions. The team determined that not having ELUs installed to support the operator manual actions required by Procedure FNP-2-AOP- 28.1 did not comply with the FPP. The licensee initiated three CRs 2008103335, 336, and 337 to address the ELU issues.

Analysis: The finding is greater than minor because it is associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e., fire) and it affects the cornerstone attribute of ensuring reliability and capability of systems that respond to initiating events. Specifically, the finding adversely affected the ability to perform local operator manual actions required to achieve and maintain SSD conditions following a fire in the cable spreading room. The team determined that this finding was of very low safety significance (Green) because the operators had a high

likelihood of completing the task using flashlights, which operators are directed to carry with them by procedure while performing local actions.

Enforcement: FNP Unit 2 Operating License Condition 2.C.(6) requires the licensee to implement and maintain in effect all provisions of the approved FPP, as described in the UFSAR. The approved FPP is documented in UFSAR Appendix 9B, Fire Protection Program. UFSAR Appendix 9B, Section 3.K, "Requirements for Emergency Lighting," states that for all areas except the Main Control Room, emergency lighting units with an 8-hour battery pack are provided in all areas needed for the operator to perform safe shutdown functions.

Contrary to the above, on April 4, 2008, an ELU was discovered not installed in an area where post-fire SSD components were being operated. Because this finding is of very low safety significance and was entered into the licensee's corrective action program (CRs 2008103335, 336, 337), this finding is being treated as an NCV, consistent with Section VI.A.1 of the NRC's Enforcement Policy. This finding is identified as NCV 05000364/2008006-02, Areas Where OMAs Are Performed Did Not Have ELUs Installed.

2) ELU Test Failures Were Not Documented In CRs As Required by Procedure

Introduction: The team identified a Green NCV of FNP Unit 2 Operating License Condition 2.C.(6), for the licensee's failure to fully implement test control requirements incorporated in approved plant procedures associated with the periodic testing of ELUs. As a consequence, condition reports were not initiated as required, when battery conductance measurements did not meet acceptance criteria.

Description: The team reviewed the surveillance test records on ELUs for the past three years. The test control requirements and acceptance criteria were specified in test procedure FNP-2-FSP-311, Semi-annual Maintenance and Testing of Emergency Lighting, Version 8.0 dated 9/7/2006. From a review of the records, it was determined that several deficiencies occurred where procedural guidance was not followed. The procedure stated in step 7.6, that , "if a light fixture does not meet the acceptance criteria or is found defective, then investigate and repair the fixture and generate a CR." The team found multiple examples where a CR was required to be generated but had not been. The specific instances were:

ELU 2034, tested 11/2/06, low conductance test reading, below 400 mhos acceptance criteria (215 mhos), no CR written, FSP data sheet states battery replaced.
ELU 2193, tested 11/2/06, illumination test unsatisfactory, no CR or record of battery replacement; however, records indicate ELU tested satisfactory on 6/1/07 (WO2060198401).
ELU 2163, tested 11/2/06, low conductance test reading, below 400 mhos acceptance criteria (320 mhos), no CR written, FSP data sheet states battery replaced.
ELU 2186, tested 11/2/06, low conductance test reading, below 400 mhos acceptance criteria (250 mhos), no CR written, FSP data sheet states battery replaced.
ELU 2191, tested 11/2/06, low conductance test reading, below 400 mhos acceptance criteria (180 mhos), no CR written, no documentation of battery replacement.

This issue was entered into the licensee's corrective action program as CR 2008103290.

Analysis: This issue is a performance deficiency because the licensee did not properly document ELU test failures on CRs for trending and evaluation in accordance with the periodic ELU test procedures. The finding involved systems or components (i.e., emergency lights) required for post-fire safe shutdown of the reactor. The finding is greater than minor because it is associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e., fire) and it affects the cornerstone attribute of ensuring reliability and capability of systems that respond to initiating events. The team determined that this finding was of very low safety significance (Green) because the operators had a high likelihood of completing the task using flashlights, which operators are directed to carry with them by procedure while performing local actions.

Enforcement: FNP Unit 2 Operating License Condition 2.C.(6) requires the licensee to implement and maintain in effect all provisions of the approved FPP, as described in the UFSAR. The approved FPP is documented in UFSAR Appendix 9B, Fire Protection Program. UFSAR Appendix 9B, Section 9B.2.5.2, "Inspection, Test, and Test Control," states that plant procedures incorporate the inspection, test and test control requirements. Plant procedure FNP-2-FSP-311, Semi-annual Maintenance and Testing of Emergency Lighting, Version 8.0 dated September 7, 2006, provides instructions for maintenance and testing of emergency light fixtures. The procedure stated, in step 7.6, that if a light fixture does not meet the acceptance criteria or is found defective, then investigate and repair the fixture and generate a CR.

Contrary to the above, on April 4, 2008, the team identified multiple examples where the licensee failed to initiate CRs for ELUs that did not meet conductance acceptance criteria. Specifically, ELUs 2034, 2193, 2163, 2186 and 2191 failed conductance testing on November 2, 2006, and a CR was not generated as required by procedure FNP-2-FSP-311. Because this finding is of very low safety significance (Green) and has been entered into the licensee's CAP (CRs 2008103290 and 2008103314), this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy. This finding is identified as NCV 05000364/2008006-03, ELU Test Failures Were Not Documented In CRs As Required By Procedure.

.10 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed the licensee's SSA to determine if any repairs were necessary to achieve cold shutdown. AOP 28.1 describes methods for repairing equipment, following a fire, needed to bring the unit from hot standby to cold shutdown. The team inspected the fire damage repair kit and inventoried the contents in accordance with station procedure EIP-16, "Emergency Equipment and Supplies," and verified that the replacement equipment was appropriately labeled, maintained in good condition, and that a sufficient quantity of materials were available to successfully accomplish all required repairs.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team reviewed the administrative controls for out-of-service (OSS), degraded, and/or inoperable, fire protection features (e.g., detection and suppression systems and equipment, passive fire barriers, or pumps, valves or electrical devices providing SSD functions or capabilities). The team reviewed selected CRs on the fire protection impairment log and compared them with the FA/FZs selected for inspection. The compensatory measures that had been established in the FA/FZs were compared to those specified for the applicable fire protection feature to verify that the risk associated with removing the fire protection feature from service was properly assessed and adequate compensatory measures were implemented in accordance with the approved fire protection program. Additionally, the team reviewed the licensee's short term compensatory measures (compensatory fire watches) to verify that they were adequate to compensate for a degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed corrective action program documents, including completed corrective actions documented in selected CRs, and operating experience program (OEP) documents to verify that industry-identified fire protection problems potentially or actually affecting FNP were appropriately entered into, and resolved by, the corrective action program process. Items included in the OEP effectiveness review were NRC RIS, Generic Letters (GLs), Information Notices (INs), industry or vendor-generated reports of defects and noncompliance under 10 CFR Part 21, and vendor information letters. The team also reviewed Quality Assurance (QA) audits of the FPP, self-assessments, and the latest FPP Health Reports for fire protection systems and components. These reviews were to verify that the licensee was identifying issues related to this inspection area at an appropriate threshold and correcting them in a timely manner. The documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

(Closed) URI 05000348, 364/2005006-01, Fire Procedure Did Not Identify the Appropriate Diagnostic Instruments

This URI identified that diagnostic instrumentation needed to perform symptomatic fire response procedures was not identified in procedures, nor was it analyzed to ensure that it would be unaffected by fire damage. The licensee provided additional information to the inspection team which identified the local diagnostic instrumentation that would be relied upon to accomplish fire response procedures leading to safe shutdown. The team reviewed the additional information, reviewed the cable routing for the instruments identified, discussed the procedure with licensee operators, walked down the local instrumentation, and evaluated the required safe shutdown operator actions. One Green NCV was identified and it is discussed in Section 1R05.06. The URI is closed.

4OA6 Meetings, Including Exit

On April 4, 2008, the lead inspector presented the inspection results to Cheri Collins, Plant Manager, and other members of the licensee's staff. The licensee acknowledged the findings. Proprietary information is not included in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
B. Badham, Engineering Services Supervisor
R. Bayne, Performance Analysis Supervisor
J. Cheney, Senior Engineer
C. Collins, Plant Manager
D. Davidson, Fire Marshal
R. Federico, Operations
J. Hayes, Training
P. Hayes, Engineering Director
J. Hunter, Operations Superintendent Support
J. Lattner, Corporate Fire Protection Supervisor
H. Mahan, Principle Licensing Engineer
D. McKinney, Farley Corporate Licensing Supervisor
B. Moore, Site Support Manager
B. Oldfield, QA Supervisor
C. Price, Fire Protection Engineer
C. Rose, Operations
J. Seay, Licensing Engineer
R. Smith, Engineering Services Supervisor
C. Thornell, Maintenance Manager

NRC Personnel
E. Crowe, Senior Resident Inspector
S. Sandal, Resident Inspector
S. Walker, Acting Chief, Engineering Branch 2, Division of Reactor Safety, Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened/Closed

05000348, 364/2008006-01	NCV	Fire Procedure Credits Unreliable Indication (Section 1R05.06)
05000364/2008006-02	NCV	Areas Where OMAs Are Performed Did Not Have ELUs Installed (Section 1R05.09)
05000364/2008006-03	NCV	ELU Test Failures Were Not Documented In CRs As Required By Procedure (Section 1R05.09)

Closed

05000348, 364/2005006-01	URI	Fire Procedure Did Not Identify the Appropriate Diagnostic Instruments (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Procedures

FNP-0-ACP-35.1, Plant Housekeeping Inspection Guidance, Rev. 5.0
FNP-0-ACP-35.2, Flammable, Combustible, and Chemical Product Storage, Rev. 12.0
FNP-2-AOP-28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room, Rev. 26.0
FNP-2-AOP-28.2, Fire in the Control Room, Rev. 22
FNP-0-AOP-29.0, Plant Fire, Rev. 33
FNP-2-AOP-29.1, Plant Stabilization in Hot Standby and Cooldown Without "A" Train AC or DC Power, Rev. 15
FNP-0-AP-35, General Plant Housekeeping and Cleanliness Control, Rev. 28
FNP-0-AP-37, Fire Brigade Organization, Revision 16
FNP-0-AP-38, Use of Open Flame, Rev. 15.0
FNP-0-AP-39, Fire Patrols and Watches, Revision 16
FNP-0-CCP-1101, Oil Static Cable and Transformer Oil Sampling, Rev. 28
FNP-0-EIP-13.0, Fire Emergencies, Rev. 19
FNP-0-EIP-16.0, Emergency Equipment and Supplies, Rev. 51
FNP-0-EMP-1322.10, Maintenance and Cleaning of Westinghouse Switchgear, Rev. 1.0
FNP-0-EMP-1363.01, Sound Power Phone Functional Test, Rev. 6.0
FNP-0-EMP-1381.04, Appendix R Emergency Light Battery Replacement, Version 8.0
FNP-0-FSP-5, Documentation of Fire Drill Critiques, Rev. 1
FNP-0-FSP-10, Yard Loop – Semi Annual, Rev. 4
FNP-0-FSP-53, Fire Distribution System Flow Test (Triennial), Rev. 4
FNP-0-FSP-57, Auxiliary Building Low Pressure CO_2 Systems and Hose Reels, Rev. 14
FNP-0-FSP-203.3, #2 Diesel Driven Fire Pump Functional Test, Rev. 4
FNP-1-FSP-311, Semi-Annual Maintenance and Testing of Emergency Lighting Unit 1, Ver. 9.0
FNP-2-FSP-311, Semi-Annual Maintenance and Testing of Emergency Lighting Unit 2, Ver. 8.0
FNP-0-FSP-500, Low Pressure CO_2 - Monthly (I&C), Rev. 9
FNP-0-FVP-14, Auxiliary Building Smoke and CO_2/Halon Removal (Portable Equipment), Rev. 2
FNP-0-SHP-26, Chemical Product Control and Hazard Communication Program, Rev. 27
FNP-0-SOP-0.0, General Instructions to Operations Personnel, Rev.116.0
FNP-0-SOP-0.4, Fire Protection Program Administration Procedure, Rev. 61.0
FNP-0-SOP-61.0, Fire Protection - Pump House and Yard Main, Rev. 33
FNP-0-SOP-61.0A, Fire Protection - Pump House and Yard Main Valve Alignment Verification, Rev. 12
FNP-0-SOP-61.1, Fire Protection Water Systems, Rev. 15
FNP-0-SOP-61.3, Fire Protection- Low Pressure CO_2 Systems, Rev. 24
NMP-GM-006, Work Management, Rev. 5
NMP-GM-006-GL01, Work Planning and Packaging, Rev. 3

Completed Surveillance Test Procedures and Test Records

FNP-0-EIP-16, Emergency Equipment and Supplies, Attachment JJ and KK, 01/16/08
FNP-0-EMP-1363.01, Sound Power Phone Functional Test, Data Sheet 2, 03/20/06
FNP-0-EMP-1363.01, Sound Power Phone Functional Test, Data Sheet 3, 04/09/06
FNP-0-EMP-1363.01, Sound Power Phone Functional Test, Data Sheet 4, 04/09/06
FNP-0-EMP-1363.01, Sound Power Phone Functional Test, Data Sheet 5, 05/11/05
FNP-0-EMP-1363.01, Sound Power Phone Functional Test, Data Sheet 6, 11/19/06
FNP-0-FSP-031-S052586701, Perform Fire Surveillance FNP-0-FSP-57, 10/20/2006
FNP-0-FSP-044-S072493501, Perform Fire Surveillance FNP-0-FSP-44, 1/25/2008

FNP-2-STP-73.0, HSP Handswitch Position Verification, 02/29/08
FNP-2-STP-73.1, HSP Operability Verification, 03/07/07
FNP-2-STP-73.2, Verification of Letdown Orifice Isolation Valve Operation from the HSP, 04/29/07
FNP-2-STP-73.3, Verification of MSIV Operation from the Hot Shutdown Panel, 05/07/07
FNP-2-STP-73.4, Verification of CCW to Miscellaneous Header MOV-3047 Operation from the HSP, 04/19/07
FNP-2-STP-73.6, Verification of Reactor Head Vent Valve Operation from the HSP, 05/04/07
FNP-2-STP-73.7, Verification of Pressurizer PORV Valve Operation from the HSP, 05/06/07

Drawings
11864-1, American Warming and Ventilating Inc. Fire Damper Schedule, Rev. C
D-170366, Fire Protection P&ID - Yard Mains, Rev. 40
D-170384, Fire Protection P&ID, Low Pressure Carbon Dioxide, Rev. 15
D-1708491, Fire Protection P&ID - Auxiliary Building, Rev. 90
D-175020, Sheets 1 & 2, Unit 1 Process Flow Diagram Turbine Building HVAC, Rev. 11
D-205002, Sheet 1, P&ID Component Cooling Water (CCW) System, Rev. 30
D-205002, Sheet 2, P&ID Component Cooling Water (CCW) System, Ver. 9.0
D-205002, Sheet 3, P&ID Component Cooling Water (CCW) System, Rev. 5
D-205014, P&ID - Unit 2 HVAC Non-Radiation Area HVAC, Rev. 23
D-205039, Sheet 1, P&ID Chemical & Volume Control System, Rev. 29
D-205039, Sheet 2, P&ID Chemical & Volume Control System, Ver. 30.0
D-205039, Sheet 3, P&ID Chemical & Volume Control System, Rev. 19
D-205039, Sheet 4, P&ID Chemical & Volume Control System, Ver. 28.0
D-205039, Sheet 5, P&ID Chemical & Volume Control System, Rev. 6
D-205039, Sheet 6, P&ID Chemical & Volume Control System, Rev. 3
D-205039, Sheet 7, P&ID Chemical & Volume Control System, Rev. 2
D-205049 - P&ID - L. P. CO_2 Fire Protection System 2A-43, Rev. 8
D-206799, Control Room Floor Framing Plan at El. 154'-0", Rev. 5
FL-20000, Sht. 15, Conn, Diagram L. P. CO_2 Fire Protection System, Rev. A3
OPS-52107B Figures 1, 2B, 3, Auxiliary Building HVAC, Rev. 1
OPS-52107B Figure 5, Cable Spreading Room and Electrical Chase HVAC, Rev. 1
OPS-52107D Figure 1, Turbine Building HVAC, Rev. 1

Engineering Document, Calculations, Design Changes, etc.
BM-95-0961-001, Verification of CST Sizing Basis
BM-99-1932-001, FNP Internal Flooding Assessment, Rev. 1
Document A350970, 10 CFR Part 50 Appendix R Fire Protection Program for Operating Nuclear Power Plants, Alternative Shutdown Capability, Rev. 13
Document A350971, 10 CFR 50 Appendix R Fire Protection Program for Operating Nuclear Power Plants, Sec. III.G, III.J, and III.O Re-Evaluation Manual, Rev. 37
NMS 00-0022, Evaluation of Recommendations Pertaining to Westinghouse NSAL 99-005, dated 03/02/2000
Design Change Package, DCP 03-2-9906, Install Fire Rated M.I. Cables in Fire Areas 1-013, 1-042, 2-013, and 2-042 for Control Circuits Associated with DG-1-2A and DG 1C, dated 04/28/2006
Field Change Request, FCR 2C-3147, Thickness of Fireproof Coatings for Structural Steel Beams, 1/19/1974
ELE-501, Electrical Maintenance Continuing Training

ELE-50106J, Midtronics Battery Conductance Tester
Electric Power Research Institute (EPRI) TR-106826, Battery Performance Monitoring by Internal Ohmic Measurements
EPRI TR-100249R1s, Emergency Battery Lighting Unit Maintenance and Application Guide
REA 98-1877, Emergency Lighting Maintenance

Work Orders (WO)
FNP-0-FSP-031-S052586701, Perform Fire Surveillance FNP-0-FSP-57, completed 10/20/2006
FNP-0-FSP-044-S072493501, Perform Fire Surveillance FNP-0-FSP-44, completed 01/25/2008
2041264901, Emergency Lighting, completed 07/08/05
2041684101, Emergency Lighting, completed 12/03/05
2051909501, Emergency Lighting, completed 05/11/06
2051909501, Emergency Lighting, completed 11/29/06
2060198401, Emergency Lighting, completed 06/01/07
2060645901, Emergency Lighting, completed 12/07/07

Applicable Codes and Standards
Fire Protection Handbook, 17th Edition
NFPA 12, Carbon Dioxide Fire Extinguishing Systems, 1973 Edition
NFPA 13, Installation of Sprinkler Systems, 1972-1985 Editions
NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 1973-1985 Editions
NFPA 15, Water Spray Fixed Systems, 1972-1985 Editions
NFPA 20, Standard for the Installation of Centrifugal Fire Pumps, 1970 Edition
NFPA 72D, Standard for the Installation, Maintenance, and Use of Proprietary Protection Signaling Systems, 1975 Edition
NFPA 80, Standard on Fire Doors and Windows, 1970 Edition
NFPA 90A, Standard on Air Conditioning and Ventilating Systems, 1981 Edition
NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition
NUREG-1552, Supplement 1, Fire Barrier Penetration Seals in Nuclear Power Plants
OSHA Standard 29 CFR 1910, Occupational Safety and Health Standards
Underwriters Laboratory Standard 555, Standard for Fire Dampers and Ceiling Dampers
Underwriters Laboratory Standard 401, Standard for Portable Spray Hose Nozzles for Fire

Technical Manuals and Vendor Information
Material Safety Data Sheet CAS No. 8052-41-3, Stoddard Solvent (Mineral Spirits), 07/3/2007
Data Sheet for Fenwal Detect-A-Fire Heat Detectors, Series 27100, dated May 1999
Data Sheet for Pyrotronics Ionization Smoke Detector, Models DIS-5B, and DIS-3/5A, dated June 1973
Data Sheet TFP800 for Type EA-1 Protecto-Spray Directional Spray Nozzles, dated April 2006
Cardox Mechanical Specifications Plate H-75, Low Pressure Fire Extinguishing Systems, dated 02/16/1965
Chemetron Fire Systems Low Pressure System Field Test Report No. 19, dated 05/2/1978
Chemetron Fire Systems, Flow Calculation FL-20000, Cable Spreading Room, dated 03/3/1976
Chemetron Fire Systems, Flow Calculation FL-20000, 600V SWGR Bus 2A, Rev. B, dated 09/20/1991

Licensing Basis Documents

Appendix A to Branch Technical Position (BTP) APCSB 9.5-1 Guidelines for Fire Protection for Nuclear Power Plants, dated 08/23/1976
FNP UFSAR Appendix 9B, – Plant Fire Protection Program, Rev. 21
FNP UFSAR Appendix 9B, Attachment B, 10 CFR 50 Appendix R Exemptions, Rev. 21
FNP UFSAR Appendix 9B, Attachment C, Operability and Surveillance Requirements for Fire Suppression Systems, Fire Detection Systems, And Fire Barrier Penetrations Required to Support the Safe Shutdown of Farley Nuclear Plant, Rev. 21
FNP Operating License Condition 2.C (4) (Unit 1) and Condition 2.C (6) (Unit 2)
FNP Fire Protection SERs, dated 02/12/79, 08/24/83, 11/19/85, 09/10/86 and 12/29/86
FNP Safety Analysis Report Change Request for Fire Protection Requirements, dated 01/19/2005
NRC Review of FNP Exemption From the Requirements of 10 CFR PART 50, APPENDIX R, dated 03/22/2006
FNP Letter of Intent to Adopt the 2001 Edition of NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," dated 02/14/2008

Condition Reports (CRs) Generated as a Result of This Inspection

CR 2008101597, Housekeeping Issues
CR 2008101598, Light Visible Through Seismic Gap Seal
CR 2008101599, Access to Sprinkler Valve in HP Office is Obstructed by Office Wall
CR 2008102333, Issues Identified During Review of FNP-2-AOP-28.1
CR 2008102336, Minor Procedural Errors Identified During Review of FNP-0-AOP-29.0
CR 2008101607, Non-Evaluated Transient Combustible Material Identified in Room 2478
CR 2008101655, Errors Exist on Fire Zone Data Sheets for Unit 2 Switchgear Room
CR 2008102426, Test Equipment Supported by Plastic Tables in Auxiliary Building
CR 2008102485, Items to Consider As Part of the Licensee's Review for NFPA 805
CR 2008102503, Labeling of Transformer Dielectric Fluid is Inconsistent
CR 2008102956, Inadvertent Safety Injection
CR 2008103007, Plant Communications Are Not Analyzed in the Turbine Building and Radio System is Unanalyzed for Plant Fires
CR 2008103168, Verify Adequate Emergency Lighting at Unit 2 RCP breakers
CR 2008103272, Combustible Controls Are Not Sufficient to Limit Use of Plastic Materials
CR 2008103288, ELU 2109 Failed to Work During Lighting Test
CR 2008103289, Labels on Some Low-Pressure CO_2 Electro-Manual Pilot Control Valves Have Differing Discharge Times as Those Shown on Plant Drawings
CR 2008103290, ELU Test Records Revealed Several Procedural Deficiencies.
CR 2008103291, Questions Need For Post-Fire Operator Action to Locally Trip DC Control Power to RCP Breaker
CR 2008103314, Questions Concerning Testing of Emergency Lights
CR 2008103335, Procedure Change Reviews Did Not Evaluate Adequacy of Emergency Lights
CR 2008103336, Adequacy of Emergency Lighting To Perform Manual Actions
CR 2008103337, Compensatory Measures To Perform Manual Actions
CR 2008103345, NFPA 805 Transition Insights For Fire Protection Systems

Other CRs Reviewed During The Inspection

2006102896, Current Practices for Restoration Times for Fire Protection Impairments Do Not Support FNP-0-SOP-0.4

2006108572, Operations Response to Tripped Clapper on System 2A-43 Did Not Address Potential Flooding Concerns
20081022340, Both Fire Protection Diesel Engine Fuel Oil Storage Tanks Need Scraping, Repainting, and Relabeling
2008103099, Heat Detector Locations in Diesel Generator Building are Outside UL/FM Listed Spacing and Not Per Note 5 on Drawing D-170336

Audits and Self Assessment Reports

Fire Protection Program Health Reports, 2nd Quarter 2005; 1st, 2nd, 3rd, & 4th Quarters 2006, and, 3rd, & 4th Quarters 2007
Engineering Support Group, Fire Protection Focused Self-Assessment, 6/26-28/2007
F-FP-2006, QA Audit of Fire Protection, dated 10/27/2006

Other Documents

Cable Schedule for the Fire Protection System Motor Operated Valves, dated 03/11/2008
FNP letter to NRC, Southern Nuclear Company (SNC) response to Nuclear Regulatory Commission Generic Letter 2006-03, "Potentially Nonconforming Hemyc and MT Fire Barrier Configurations," dated 06/09/2006 (ADAMS No. ML 061600376)
FNP letter to NRC, GL 2006-03, Request for Additional Information, dated 02/19/2008 (ADAMS No. ML 0805102180)
FNP Review of IN 2005-03, Inadequate Design and Installation of Seismic-Gap Fire Barriers, dated 08/19/2005
FNP Review of IN 2005-11, Internal Flooding/Spray-Down of Safety Related Equipment Due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains, dated 11/22/2005
FNP Review of IN 2006-02, Use of Galvanized Supports and Cable Trays with Meggitt Si 2400 Stainless Steel Jacketed Electrical Cables, dated 05/26/2006
IN 2007-26, Combustibility of Epoxy Floor Coatings at Commercial Nuclear Power Plants, dated 08/13/07
IN 2007-19, Fire Protection Equipment Recalls and Counterfeit Notices, dated 05/21/2007
RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements, dated 04/19/2005
IN 2007-17, Fires at Nuclear Power Plants Involving Inadequate Fire Protection Administrative and Design Controls, dated 05/03/2007
FNP Fire Brigade Qualification Status, dated 03/12/2008
Letter of Agreement for Back-up Fire Protection Services, City of Dothan Resolution No. 2004-6, dated 01/06/2004
A-350950, Penetration Seal Cross Reference Tabulation, Rev. 49
A-508650, Sheet 53, Fire Zone Data Sheet, Unit 1Turbine Building (El. 155'-0"), Rev. 16
A-508650, Sheet 32A, Fire Zone Data Sheet, Aux. Bldg. 139'-0 (NWQUAD), Rev. 1
A-509018, Sheet 32, Fire Zone Data Sheet, Auxiliary Building 139'-0" (SWQUAD), Rev. 7
B-508901, Fire Damper Report, Rev. 15
U-162451, L. P. CO_2 Fire Protection Instruction Manual, Rev. 3
U-276742, 13 Ton L. P. CO_2 Fire Protection Operation & Service Manual, Rev. 2
Specification SS-1102-19-R, Structural and Miscellaneous Steel, Rev. 2
Fire Drill Critique Packages for the Period 03/24/2005 to 08/30/2007

Components Selected

Section 1R05.03.a: List of Fire Barrier Features Inspected in Relation to Safe Shutdown Separation Requirements

Fire Barriers Floors/Walls/Ceiling Identification	Description
Concrete Masonry Block Wall	FA 40 to FA 51
Concrete Masonry Block Wall	FA 41 to FA 9

Fire Damper Identification	Description
2-139-119-08	FA 40 to FA 42

Fire Door Identification	Description
Door 2312	FA 40 to FA 42
Door 2315	FA 40 to FA 42
Door 2324	FA 41 to FA 9
Door 2321	FA 41 to FA 42
Door 2322	FA 41 to FA 42

Fire Barrier Penetration Seal Identification	Description
07-139-01	Duct and Steel Plate, FA 41 to FA 9
12-139-01	Silicon Foam Seal, FA 40 to FA 51
30-139-021	Grout Seal, FA 41 to FA 42
22-155-05	Grout Seal, FA 40 to FA 9

ERFBS Identification	Description
MSSI Mineral Insulated Cables	FA 41 to FA 42

Sections 1R05.04.a and 1R05.07.a: List of Inspected Components

Fire Protection System Equipment

Component No.	Description
MOV N1Y43M0001	Yard Fire Main to Unit 1 Auxiliary Building
MOV N1Y43M0002	Yard Fire Main to Unit 1 Auxiliary Building
MOV N2Y43M0003	Yard Fire Main to Unit 2 Auxiliary Building
MOV N2Y43M0004	Yard Fire Main to Unit 2 Auxiliary Building
N1P43V001	No. 1 Fire Water Storage Tank Valve to Fire Pump Suction
N1P43V005	No. 1 DDFP Suction Isolation Valve
N1P43V006	No. 2 DDFP Suction Isolation Valve
N1P43V007	MDFP Suction Isolation Valve
N2V43SV2243-N	System 2A-43, Trip Solenoid Valve

Safe Shutdown Equipment

Component No.	Description
Q2E21LCV115B	Refueling Water Storage Tank (RWST) to Charging pump
Q2E21LCV115D	RWST to Charging pump
Q2E21MOV8885	High Head Safety Injection (HHSI) to Reactor Coolant System (RCS) Cold Leg Isolation
Q2E21MOV8803A	HHSI to RCS Cold Leg Isolation
Q2E21MOV8803B	HHSI to RCS cold leg isolation
Q2E21MOV8107	Charging to Regenerative Heat Exchanger
Q2E21MOV8108	Charging to Regenerative Heat Exchanger
Q2N11HV3369A	Steam Generator (SG) Main Steam Isolation Valve (MSIV)
Q2N11HV3369B	SG MSIV
Q2N11HV3369C	SG MSIV
Q2N11PCV3371A	Main Steam (MS) Atmospheric Relief Valve (ARV)
Q2N11PCV3371B	MS ARV
Q2N11PCV3371C	MS ARV
Q2N23HV3227A	Motor Driven Auxiliary Feedwater (MDAFW) to 2A S/G
Q2N23HV3227B	MDAFW to 2B S/G
Q2N23HV3227C	MDAFW to 2C S/G
Q2N23HV3228A	Turbine Driven Auxiliary Feedwater (TDAFW) FCVs
Q2N23HV3228B	TDAFWP Flow Control Valve (FCV)
Q2N23HV3228C	TDAFWP FCV

LIST OF ACRONYMS

AB	Auxiliary Building
AOP	Abnormal Operating Procedure
ARV	Atmospheric Relief Valve
CAP	Corrective Action Program
CCW	Component Cooling Water
CO_2	Carbon Dioxide
CFR	Code of Federal Regulation
CR	Condition Report
EL	Elevation
ELU	Emergency Lighting Unit
FA	Fire Area
FCV	Flow Control Valve
FHA	Fire Hazards Analysis
FNP	Joseph M. Farley Nuclear Plant
FPP	Fire Protection Program
FZ	Fire Zone
GL	Generic Letter
HHSI	High Head Safety Injection
HSP	Hot Shutdown Panel
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IPEEE	Individual Plant Examination for External Events
MCC	Motor Control Center
MCR	Main Control Room
MDAFW	Motor Driven Auxiliary Feedwater
MI	Mineral Insulated
MSIV	Main Steam Isolation Valve
MSSI	Meggitt Safety Systems Incorporated
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	U. S. Nuclear Regulatory Commission
OEP	Operating Experience Program
OMA	Operator Manual Action
OSHA	Occupational Safety and Health Administration
P&IDs	Piping and Instrumentation Drawings
QA	Quality Assurance
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RIS	Regulatory Issue Summary
Rm	Room
ROP	Reactor Oversight Process
RWST	Refueling Water Storage Tank
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SER	Safety Evaluation Report

SG	Steam Generator
SSA	Safe Shutdown Analysis
SSD	Safe Shutdown
SSER	Supplemental Safety Evaluation Report
SW	South West
TDAFW	Turbine Driven Auxiliary Feedwater
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order