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

October 14, 2005

Carolina Power & Light Company
ATTN: Mr. James Scarola
Vice President - Harris Plant
Shearon Harris Nuclear Power Plant
P. O. Box 165, Mail Code: Zone 1
New Hill, NC 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000400/2005007

Dear Mr. Scarola:

On September 2, 2005, the Nuclear Regulatory Commission (NRC) completed an inspection at the Shearon Harris Nuclear Power Plant. The enclosed report documents the inspection results, which were discussed on September 2, 2005, with you and other members of your staff.

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

Based on the results of this inspection, no findings of significance were identified.

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

Sincerely,

/RA/

D. Charles Payne, Chief
Engineering Branch 2
Division of Reactor Safety

Docket No.: 50-400
License No.: NPF-63

Enclosure: NRC Inspection Report No. 05000400/2005007
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	50-400
License No:	NPF-63
Report No:	05000400/2005007
Licensee:	Carolina Power & Light Company (CP&L)
Facility:	Shearon Harris Nuclear Power Plant, Unit 1
Location:	5413 Shearon Harris Road New Hill, NC 27562
Dates:	August 15 - 19, 2005 (Week 1) August 29 - September 2, 2005 (Week 2)
Inspectors:	R. Aiello, Senior Operations Engineer, (Week 2 only) F. Baxter, Electrical Engineer (Contractor) R. Fanner, Reactor Inspector M. Thomas, Senior Reactor Inspector, (Lead Inspector) G. Wiseman, Senior Reactor Inspector
Accompanying Personnel:	T. Harrison, Fire Protection Co-op (Week 1 only)
Approved by:	D. Charles Payne, Chief Engineering Branch 2 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000400/2005-007; 08/15 - 19/2005 and 08/29 - 09/02/2005; Shearon Harris Nuclear Power Plant, Unit 1; Triennial Fire Protection Inspection.

This report covers an announced two-week period of inspection by four regional inspectors and one contractor. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process" Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

None

B. Licensee-Identified Violations

None

Enclosure

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection

The purpose of this inspection was to review the Shearon Harris Nuclear Power Plant (SHNPP) fire protection program (FPP) for selected risk-significant fire areas. The inspection was performed in accordance with the U.S. Nuclear Regulatory Commission (NRC) Inspection Procedure (IP) 71111.05T, Fire Protection (Triennial), dated 02/18/2005, as modified 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. The NRC reduced the scope of this inspection by not specifically targeting safe shutdown circuit configurations for inspection. Emphasis was placed on verification that procedures, including local manual operator actions, for post-fire safe shutdown (SSD) and the fire protection features provided for the selected areas met NRC requirements. The inspection was also performed in accordance with the NRC Reactor Oversight Process (ROP), using a risk-informed approach for selecting the fire areas and attributes to be inspected. The selection of risk-significant fire areas to be evaluated during this inspection considered the licensee's Individual Plant Examination for External Events, information contained in FPP documents, results of prior NRC triennial inspections, and observations noted during in-plant tours. The fire areas chosen for review during this inspection were:

- Safe Shutdown Analysis (SSA) Fire Area 1-A-BAL-B (B2)/Fire Zone 1-A-4-CHLR, Water Chiller Area B, 261 foot elevation reactor auxiliary building (RAB). In the event of a significant fire in this area, safe shutdown of the unit would be achieved from the main control room (MCR) with additional local manual operator actions in various areas of the plant.

- SSA Fire Area 1-A-BAL-C/Fire Zone 1-A-5-HVB, Switchgear Ventilation Room B, 286 foot elevation RAB. In the event of a significant fire in this area, safe shutdown of the unit would be achieved from the MCR with additional local manual operator actions in various areas of the plant.

- SSA Fire Area 12-A-CR/Fire Zone 12-A-6-CR1, Main Control Room, 305 foot elevation RAB. In the event of a significant fire in this area, evacuation of the MCR could be required and alternative shutdown would be achieved from the auxiliary control panel.

- SSA Fire Area 12-A-CRC1/Fire Zone 12-A-6-PICR1, Control Room Complex, Process Instrument Cabinet Room, 305 foot elevation RAB. In the event of a significant fire in this area, evacuation of the MCR could be required and alternative shutdown would be achieved from the auxiliary control panel.

For each of the selected fire areas, the team evaluated the licensee's FPP against applicable requirements including Title 10 of the Code of Federal Regulations (10 CFR) 50.48; Operating License NFP-63, Operating License Condition 2.F, FPP; Updated Final Safety Analysis Report (UFSAR); Branch Technical Position (BTP) Chemical Engineering Branch (CMEB) 9.5-1 (NUREG-0800), Guidelines for Fire Protection for Nuclear Power Plants, Rev. 2, July 1981; related NRC Safety

Evaluation Reports (SERs) in NUREG 1038; NFPA codes; and plant Technical Specifications (TS). The team evaluated all areas of this inspection, as documented below, against these requirements.

.01 Fire Protection of Safe Shutdown Capability

a. Inspection Scope

The team reviewed selected portions of the site FPP, fire hazards analysis (FHA), SSA, selected maintenance work orders, and the plant smoking policy. The team also reviewed selected portions of the administrative fire prevention and combustible hazards control procedures that establish and implement controls and practices to prevent fires and control the use and storage of permanent and transient combustible materials and ignition sources. These reviews were performed to verify that the licensee's commitments, as established in the fire protection licensing basis documents, were satisfied. For the selected fire areas/zones, the team evaluated the potential for fires, the combustible fire load characteristics, and the potential exposure fire severity. These evaluations were conducted to verify the effectiveness of the fire prevention program and to identify any maintenance or material condition problems related to fire incidents. The documents reviewed are listed in the Attachment.

The team walked down the selected plant fire areas/zones to observe: (1) the material condition of fire protection systems and equipment; (2) the storage of permanent and transient combustible materials; and (3) the licensee's implementation of the programmatic procedures for limiting fire hazards, combustible waste collection, housekeeping practices, and cleanliness conditions. These reviews were performed to verify that the licensee was maintaining the fire protection systems, had properly evaluated in-situ combustible fire loads, controlled hot-work activities, and limited transient fire hazards consistent with the UFSAR, administrative procedures, and other FPP procedures.

The team reviewed criteria in the licensee's engineering department standards and design control procedures to verify that plant changes were adequately reviewed for the potential impact on the FPP. The team performed an independent technical review of the licensee's Engineering Service Request 9900046 documentation completed to justify the use of non treated wood timbers (dunnage) in the plant in lieu of fire retardant chemically treated wood. This review was performed to verify that the modification was performed consistent with plant design control procedures and the FPP.

b. Findings

No findings of significance were identified.

.02 Passive Fire Protection - Fire Barriers and Fire Area/Zone/Room Penetration Seals

a. Inspection Scope

The team reviewed the selected fire areas/zones to verify the adequacy of the fire resistance of fire barrier enclosure walls, ceilings, floors, fire barrier mechanical and electrical penetration seals, fire doors, and fire dampers in accordance with licensee commitments to BTP CMEB 9.5-1. The review was performed to verify that at least one train of SSD equipment was free of fire damage. This was

accomplished by observing the material condition and configuration of the installed fire barrier features, as well as reviewing procurement specifications, construction detail drawings, engineering evaluations and fire endurance tests for the installed fire barrier features, to verify that the as-built configurations met design requirements, license commitments, standard industry practices and were either properly evaluated or qualified by appropriate fire endurance tests. In addition, the team reviewed a summary of surveillance and maintenance procedures for selected passive fire barrier features to verify these were properly inspected, maintained, and met the licensing and design bases as described in licensee submittals, NRC SERs, and UFSAR Section 9.5.1.2.2. The fire protection features included in the review are listed in the Attachment.

b. Findings

No findings of significance were identified.

.03 Active Fire Protection

a. Inspection Scope

The team reviewed the selected fire areas/zones to verify the adequacy of the design, installation, and operation of the automatic detection and alarm system to actuate in the early stages of a fire. This included walkdowns of the systems and evaluation of the fire response for the types of installed detectors, as shown on location drawings, to verify that the areas were protected by a fire detection system in accordance with the design requirements of BTP CMEB 9.5-1 and NFPA Codes of Record (COR) requirements.

The team reviewed the adequacy of the design and installation of the fixed multi-cycle pre-action sprinkler system for the Unit 1 chiller area (Fire Zone 1-A-4-CHLR). The team reviewed original suppression system specifications, hydraulic calculations for the suppression system, sprinkler installation drawings, sprinkler response data, and NFPA 13, “Standard for the Installation of Sprinkler Systems,” to verify that the fire suppression system met the design and licensing basis as described in licensee submittals, NRC SERs and the UFSAR, and that the system could perform its intended function in the event of a fire within the room enclosure.

The team also reviewed the periodic surveillance testing performed on the sprinkler system, including the interfacing fire detection systems, to verify the systems were properly inspected and maintained.

The manual portable extinguishers and the suppression standpipe and fire hose systems were reviewed to verify adequate design, installation, and operation in the selected fire areas/zones. During plant walkdowns, the team observed interior fire hose nozzle types and the placement of the fire hose stations and extinguishers to verify they were not blocked and were consistent with design drawings, the fire fighting plans and FPP documents. The team also reviewed engineering evaluations and flow/pressure calculations to verify that sufficient pressure and flow volume were available to produce electrically safe and effective fire hose operation within the nozzle manufacturer's specified flow range. Additionally, the team checked a sample of fire hose lengths to verify they could reach potential fire affected equipment and components within the selected fire areas/zones in support of manual fire brigade fire fighting efforts.

The team reviewed flow diagrams, design basis specifications, engineering technical evaluations for NFPA code deviations, and operational valve lineup procedures of the motor-driven fire pump, the diesel-driven fire pump, and the fire protection water supply system. Using operating and valve alignment procedures, the team inspected selected fire pumps and portions of the fire main piping system to verify material condition, consistency of as-built configurations with engineering drawings, and correct system valve lineups. In addition, the team performed an independent technical review of Engineering Change (EC) 50147 documentation completed to support a modification to the diesel-driven fire pump controller to provide an auto-start capability of the pump upon loss of power to the battery chargers. The review was performed to verify that the modification was performed consistent with plant design control procedures and NFPA COR requirements.

The team reviewed the routing of power and control cables for the electric powered fire pump and the control and annunciator cables for the diesel driven fire pump to verify that the cables for the fire pumps were routed such that fire damage to the cables would not prevent the delivery of water for fire suppression. The team also reviewed the fuel oil, lube oil, and starting batteries for the diesel driven fire pump to verify that the lube and fuel oil were suitable for cold weather operation, and that the batteries would be capable of providing sufficient cranking power for the engine.

The team reviewed operator and fire brigade staffing, initial and continuing qualification course training materials, and fire drill program procedures to verify appropriate training was being conducted for the station firefighting personnel. Additionally, the team reviewed post-drill summary records of fire drills performed in the previous two-year period to verify the effectiveness of fire brigade response to simulated fire emergencies and to verify that drills were being conducted in risk significant areas.

The team inspected the fire emergency equipment storage locations and dress-out areas, fire brigade protective ensembles, self-contained breathing apparatuses (SCBA), and various fire brigade equipment to verify operational readiness for fire fighting. Three fire brigade protective ensembles were physically checked for cleanliness and dryness; heat damage, fabric damage, thread or seam damage, discoloration, cracks or tears, and worn areas. The team also reviewed the SCBA breathing air compressor and storage cylinders to verify that the onsite reserve supply of breathing air for recharging SCBA air bottles met the license commitments described in the UFSAR.

The team reviewed the fire pre-plan strategies for the selected fire areas/zones and fire response procedures to verify that appropriate information was provided to fire brigade members to identify potential effects to plant safety and personnel safety and to facilitate suppression of an exposure fire that could impact SSD capability. The team walked down the selected fire areas/zones to compare the associated fire pre-plan drawings with as-built plant conditions and fire response procedures. This was done to verify that fire fighting pre-plans and drawings were consistent with the fire protection features and potential fire conditions described in the fire hazards analysis. The team also evaluated whether the fire response procedures and fire pre-plans for the selected fire areas/zones could be implemented as intended. Additionally, the team assessed the adequacy of the off-site fire fighting assistance including entry into the plant area, communications, emergency dosimetry, and fire equipment usage.

b. Findings

No findings of significance were identified.

.04 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team reviewed UFSAR Section 9.4.5, post-fire SSD procedures, selected fire fighting pre-plan procedures, and heating, ventilation, and air conditioning system drawings and design basis specifications for a selected sample of equipment to verify smoke purge/removal system capability for a fire in the selected fire areas/zones. This review was conducted to assess the system's fire vulnerability (if electrical power supplies or control circuits could be damaged or inhibited by fire-induced failures) and to verify that access to remote shutdown equipment and operator manual actions for SSD would not be inhibited by smoke migration from one area to adjacent plant areas.

The team performed document reviews and in-plant walkdowns to evaluate the material condition of concrete floors, floor drain systems, and the physical configuration of fixed fire suppression equipment and components in the selected fire areas/zones. These reviews were performed to verify that water from an inadvertent fire suppression system rupture, from the effects of a fire event, fire fighting activities, or from leakage from fire suppression systems could cause damage that could significantly impair safety systems.

b. Findings

No findings of significance were identified.

.05 Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the licensee's SSA and walked down the selected fire areas to verify the adequacy of the licensee's strategy for alternative shutdown for a fire in the MCR or control room complex. The

team also reviewed selected surveillance tests to verify that the licensee performed periodic operational tests of the alternative shutdown transfer capability and instrumentation and control functions, and that the tests were adequate to prove the functionality of the alternative shutdown capability.

b. Findings

No findings of significance were identified.

.06 Operational Implementation of Safe Shutdown Capability

a. Inspection Scope

The team reviewed the operational implementation of the SSD strategy that would be used during a significant fire in any of the selected fire areas. The team interviewed training and operations personnel, reviewed lesson plans, job performance measures, plant procedures, and training records for licensed and non-licensed operators. These reviews were performed to verify that: 1) the procedures were available for immediate use; 2) the operators could reasonably be expected to perform the procedures, including local manual operator actions, within applicable shutdown time requirements; 3) the local manual operator actions in place for fire areas requiring SSD from the MCR met the criteria listed in NRC IP 71111.05T; 4) the training program for operators included local manual operator actions relied on for SSD from the MCR or from the alternate shutdown locations; 5) personnel required to achieve and maintain the plant in hot standby following a fire could be provided from normal onsite staff, exclusive of the fire brigade; and 6) the licensee conducted periodic operational tests of the alternate shutdown transfer capability and instrumentation and control functions. The team reviewed and/or walked down applicable sections of the following fire response abnormal operating procedures (AOP):

- AOP-004, Remote Shutdown, Rev. 36
- AOP-036, Safe Shutdown Following a Fire, Rev. 37 and Rev. 38
- AOP-036.03, Fire Area: 1-A-BAL-B, Rev. 0 and Rev. 1
- AOP-036.04, Fire Areas: 1-A-BAL-C, 1-A-BAL-D, 1-A-BAL-F, 1-G, FPYARD, Rev. 0 and Rev. 1
- AOP-036.05, Fire Areas: 1-A-CSRA, 1-A-CSRB, Rev. 0 and Rev. 1

b. Findings

Introduction: The team identified an unresolved item (URI) related to the abnormal operating procedure used to achieve SSD from the MCR in the event of a fire in certain fire areas where all reactor coolant pump (RCP) seal cooling could be interrupted. The safe shutdown strategy and related fire response procedures may not be adequate to ensure safe shutdown of the plant for a fire in Fire Areas 1-A-BAL-B (B2) or 1-A-CSRB. The licensee's fire response procedures may not preclude RCP seal damage because the AOPs did not include guidance from Westinghouse, the RCP seal vendor for SHNPP, regarding time limitations for restoring cooling to the RCP seals. Failure to follow the vendor

guidance could result in RCP seal package failure and could cause a seal loss-of-coolant accident and failure of the specified safe shutdown strategy.

Description: Procedure AOP-036, Rev. 37 was written to safely shut down the unit from the MCR in the event of a significant fire in certain fire areas. SSA Fire Area 1-A-BAL-B (B2) was one of the fire areas where shut down would be achieved from the MCR with additional local manual operator actions performed in various areas of the plant. Revision 37 was the revision of record for AOP-036 at the beginning of this inspection. Revision 38 to AOP-036, which was issued prior to the second week of the inspection, subdivided the procedure by fire areas (i.e., AOP-036.01, -036.02, -036.03, etc.). Procedures AOP-036 and AOP-036.03 included local manual operator actions to restore component cooling water (CCW) to the thermal barrier cooler, if a fire in SSA Fire Area 1-A-BAL-B (B2) resulted in the loss of all cooling to the RCP seals. The team noted that the previous NRC triennial fire protection inspection (IRs 05000400/2002011 and 05000400/2003007) identified a Green finding where a significant fire in Fire Area 1-A-BAL-B (B2) could result in the loss of all RCP seal cooling.

Westinghouse previously stated in various technical guidance documents (Technical Bulletin TB-04-22, dated 11/17/2004 and 08/09/2005) that cooling to the RCP seals should be restored within 13 minutes in the event of a loss of all RCP seal cooling. The Westinghouse guidance further stated that RCP seal cooling should not be restored if it takes more than 13 minutes. Restoration of seal cooling after 13 minutes using charging pump seal injection may result in cold thermal shock of the seal and possibly cause increased seal leakage which could lead to a seal loss-of-coolant accident. If seal cooling is restored using CCW to the thermal barrier cooler, water hammer may occur and possibly compromise the integrity of the CCW system. If the CCW system is damaged, then plant shutdown after a fire may not be possible in all scenarios. The licensee stated that they were performing a Manual Action Feasibility Study to validate the manual operator actions specified in the SSA and incorporated into the SSD AOPs. The team observed that the feasibility study was in progress and had not been completed at the conclusion of this inspection. Based on the Manual Action Feasibility Study for Fire Area 1-A-BAL-B (B2), the time to restore RCP seal cooling (via CCW thermal barrier cooling) was 17 minutes and 39 seconds. This time exceeded the 13 minutes specified by Westinghouse. The team also noted that AOP-036 and AOP-036.03 did not include procedural guidance or cautions (for any of the applicable fire areas where all RCP seal cooling could be lost due to a fire) to alert operators about the Westinghouse time limitations for restoring cooling to the RCP seals.

The team discussed this observation with licensee personnel and subsequent to this inspection, the licensee revised AOP-036 and the related AOP-036 series to add a caution alerting the operators not to restore RCP seal cooling if it could not be accomplished within 13 minutes.

The team walked down sections of AOP-036 applicable to Fire Area 1-A-BAL-B (B2) with licensee operations personnel. During this walkdown, the team observed that the time to restore CCW thermal barrier cooling to the RCP seals was less than the 17 minutes and 39 seconds noted in the licensee's Manual Action Feasibility Study but more than the 13 minutes specified by Westinghouse. Based on observations from the team's walkdown, the licensee revised AOP-036 procedural steps to reduce the time for some of the actions. Additionally, the licensee evaluated the opening requirement for Valve 1CC-252 (CCW to the thermal barrier cooler) to determine flow adequacy for RCP seal cooling. These additional actions resulted in the licensee making a determination that RCP seal cooling could be restored within the 13 minutes specified by Westinghouse. The team determined that the licensee's additional actions were appropriate to address the issue for Fire Area 1-A-BAL-B (B2).

The team noted that the licensee had identified eight fire areas (1-A-BAL-B (B1), 1-A-BAL-B (B2), 1-A-BAL-B (B3), 1-A-CSRA, 1-A-CSRB, 1-A-EPA, 1-A-EPB 1-A-SWGRB) where all RCP seal cooling could be lost due to a significant fire in the applicable fire area. The licensee had prepared modifications EC-52769 and EC-60436 to resolve this issue for some of the fire areas. These EC's are scheduled to be implemented during refueling outage RF-13 in the spring of 2006. The team further noted that, in addition to Fire Area 1-A-BAL-B (B2), the licensee had performed the Manual Action Feasibility Study for Fire Area 1-A-CSRB, Cable Spread Room B. The feasibility study indicated that the time to restore CCW thermal barrier cooling to the RCP seals for Fire Area 1-A-CSRB was 18 minutes and 30 seconds. The licensee did not perform any additional reviews of the safe shutdown strategy for Fire Area 1-A-CSRB during this inspection. The team noted that the licensee revised the applicable SSD procedure for Fire Area 1-A-CSRB (AOP-036.05) subsequent to this inspection to alert the operators regarding the time limitations for restoring RCP seal cooling following a loss of all seal cooling.

Analysis and Enforcement: Pursuant to the Commission's Enforcement Policy and NRC Manual Chapter 0305, under certain conditions fire protection findings at nuclear power plants that transition their licensing bases to 10 CFR 50.48©) are eligible for enforcement and ROP discretion. The Enforcement Policy and ROP also state that the finding must not be evaluated as Red. On June 10, 2005, the licensee submitted a letter to the NRC stating its intent to transition to 10 CFR 50.48©). The finding discussed above is greater than minor because it is associated with the ability to achieve safe shutdown of the unit following a fire in Fire Area 1-A-BAL-B (B2) or Fire Area 1-A-CSRB and affects the initiating event and mitigating systems cornerstone objectives. This issue is unresolved pending further NRC review to determine if it meets the criteria for discretion per the NRC Enforcement Policy and ROP. This issue will be tracked as URI 05000400/2005007-01, Fire Response Procedures May Not Be Adequate To Prevent RCP Seal Failure and Subsequent Seal Loss of Coolant Accident For a Fire in Certain Fire Areas.

.07 Communications for Performance of Fire Fighting Capability and Safe Shutdown

a. Inspection Scope

The team reviewed the various plant communication systems to verify the licensee's ability to provide adequate communications to coordinate the shutdown of the unit and fire brigade duties.

Communications that could be available during a fire included a private automatic branch exchange telephone system, a voice paging system, a sound powered intercom system, and a radio system. The team reviewed the licensee's portable radio channel features to verify that the system and its repeaters were protected from exposure fire damage. The team walked down selected sections of the post-fire SSD procedures and reviewed the communications equipment to verify availability for the personnel performing the procedure. The team also reviewed the periodic testing of the site fire alarm and paging systems; maintenance checklists for the sound-powered phone circuits and amplifiers; and inventory surveillance of post-fire SSD operator equipment to verify that the maintenance/surveillance test program for the communications systems was sufficient to verify proper operation of the systems.

b. Findings

No findings of significance were identified.

.08 Emergency Lighting for Performance of Fire Fighting Capability and Safe Shutdown

a. Inspection Scope

The team observed emergency exit lighting for personnel evacuation pathways to the outside exits as specified in the NFPA 101, Life Safety Code, and the Occupational Safety and Health Administration Part 1910, Occupational Safety and Health Standards. This review also included examination of backup emergency lighting 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.

The team reviewed the design and operation of self contained battery powered emergency lighting units (ELUs) as described in UFSAR Sections 9.5.1.2.3.e and 9.5.3. The team performed plant walkdowns of selected local manual actions defined in the post-fire SSD procedures to verify that the ELUs were aimed correctly for adequate illumination to allow performance of the actions required by the procedures. The team inspected emergency lighting features along access and egress pathways used during SSD activities for adequacy and personnel safety.

The locations and identification numbers on the ELUs were compared to design lighting drawings to confirm the as-built configuration. The team also reviewed the manufacturer's information to verify that the battery power supplies were rated with at least an 8-hour capacity.

The team reviewed lighting layout drawings, individual lighting fixture circuits and lighting panel details for selected areas to assess if the lighting circuits and sources used for the areas were diverse such that a fire in one of the areas would not affect the lighting required for safe shutdown operations in any of the other areas.

b. Findings

No findings of significance were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed licensee FPP procedures and information to verify that, for damaged equipment, the licensee did not rely on repairs and had no credited repair procedures. Cold shutdown repairs were not credited at SHNPP.

b. Findings

No findings of significance were identified.

.10 Compensatory Measures

a. Inspection Scope

The team reviewed the administrative controls for out-of-service, degraded, and/or inoperable, fire protection features. The team reviewed selected active items on the fire protection status reports and compared them with the fire areas/zones selected for inspection. The compensatory measures that had been established in these areas/zones 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 (fire watches) to verify that they were adequate to compensate for a degraded SSD function or fire protection feature until appropriate corrective actions were taken.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

a. Inspection Scope

The team reviewed a sample of corrective action program (CAP) action requests (ARs) resulting from fire, smoke, sparks, arcing, and equipment overheating incidents for the previous two-year period. Additionally, selected fire brigade responses, emergencies and incidents, and fire safety inspection reports were reviewed. These reviews were conducted to verify that the licensee was identifying fire protection-related issues at an appropriate threshold and entering those issues into the corrective action program and to assess the frequency of fire incidents, trends in fire precursors, and effectiveness of the fire prevention program and any maintenance-related or material condition problems related to fire incidents.

The team also reviewed other CAP documents, including completed corrective actions documented in selected ARs, and operating experience program (OEP) documents to verify that industry-identified fire protection problems potentially or actually affecting SHNPP were appropriately entered into the CAP for resolution. Items included in the OEP effectiveness review were NRC Information Notices, industry and/or vendor-generated reports of defects and noncompliances under 10 CFR Part 21, and vendor information letters/technical bulletins. In addition, the inspectors reviewed a sample of the fire protection program audits and self-assessments which the licensee performed in the previous two-year period. The inspectors evaluated the effectiveness of the corrective actions for the identified issues. The documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On September 2, 2005, the lead inspector presented the inspection results to Mr. J. Scarola, and other members of his staff. Proprietary information is not included in this inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

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D. Baksa, Supervisor, Equipment Performance
J. Briggs, Superintendent, Environmental and Chemical
D. Corlett, Supervisor, Licensing/Regulatory Programs
R. Duncan, Director, Site Operations
J. Ertman, Principal Engineer, Chief Engineering Section
M. Fletcher, Manager, Fire Protection Program
W. Gurganious, Manager, Training
C. Kamilaris, Superintendent, Operations Training
J. Kunzmann, Safe Shutdown Program Manager
T. Maness, Supervisor, Fire Protection Focus Team
L. Martin, Superintendent, Design Engineering
B. McCabe, Supervisor, Corporate Regulatory Affairs
E. McCartney, Plant General Manager
S. McCoy, Senior Licensing Engineer
T. Natale, Manager, Outage and Scheduling
J. Nobles, Operations Fire Protection
S. O'Connor, Manager, Engineering
S. Radford, Maintenance Superintendent
B. Rhodes, Operations Support, Fire Protection Focus Team
J. Scarola, Site Vice President
R. Varner, Supervisor, Nuclear Assessment Section
M. Wachtel, Fire Protection Focus Team
M. Wallace, Licensing Specialist
M. Weber, Superintendent, Operations Support
K. Williams, Fire Protection Program Manager, Crystal River 3
E. Wills, Operations Manager

NRC personnel

P. Fredrickson, Chief, Reactor Projects Branch 4, Division of Reactor Projects
V. McCree, Director, Division of Reactor Safety
R. Musser, Senior Resident Inspector
P. O'Bryan, Resident Inspector
C. Payne, Chief, Engineering Branch 2, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000400/2005007-01	URI	Fire Response Procedures May Not Be Adequate To Prevent RCP Seal Failure and Subsequent Seal Loss of Coolant Accident For a Fire in Certain Fire Areas (Section 1R05.06.b)

Opened and Closed

None

Closed

None

Discussed

None

Attachment

SECTION 1R05.02 LIST OF FIRE BARRIER FEATURES INSPECTED IN RELATION TO SAFE SHUTDOWN SEPARATION REQUIREMENTS

Floors/Walls/Ceilings	Description
Wall With Embedded Junction Box B1711 S4	Fire Zone 1-A-5-HVB to Fire Zone 1-A-CSRB

Fire Dampers	Description
AV-FDAS-41-1	Fire Zone 1-A-5-HVB to Fire Zone 1-A-ACP
AV-FDAS-48-1	Fire Zone 1-A-5-HVB to Fire Zone 1-A-SWGRB
AV-FDAS-49-1	Fire Zone 1-A-5-HVB to Fire Zone 1-A-SWGRB
CZ-FDAM-4-1	Fire Zone 12-A-6-CR1 to Fire Zone 12-A-6-ARP1
CZ-FDAM-5-1	Fire Zone 12-A-6-CR1 to Fire Zone 12-A-6-ARP1

Fire Doors	Description
D251	Fire Zone 1-A-5-HVB to Fire Zone 1-A-SWGRB
D252	Fire Zone 1-A-5-HVB to Stairway
D459	Fire Zone 12-A-6-CR1 to Fire Zone 1-A-6-COMA
D461	Fire Zone 1-A-6-COMA to Air Lock
D467	Fire Zone 12-A-6-CR1 to Fire Zone 12-A-6-ARP1
D468	Fire Zone 12-A-6-CR1 to Fire Zone 12-A-6-CR
D476	Fire Zone 12-A-6-PICR1 to Fire Zone 12-A-6-IRR

Fire Barrier Penetration Seals	Description
P4403, Typical GS-1	Fire Zone 1-A-5-HVB wall to Fire Zone 1-A-46-ST
H423, Typical ML-1	Fire Zone 12-A-6-PICR1 wall to Fire Zone 12-A-6-IRR
H424, Typical EC-1	Fire Zone 12-A-6-PICR1 wall to Fire Zone 12-A-6-IRR
E546A, Typical EC-2	Fire Zone 12-A-6-PICR1 floor to Fire Zone 1-A-CSRB
E563, Typical EL-2	Fire Zone 12-A-6-PICR1 floor to Fire Zone 1-A-CSRA
E837, Typical EC-2	Fire Zone 1-A-4-CHLR manhole to Fire Zone FPYARD

LIST OF DOCUMENTS REVIEWED

Procedures

AOP-004, Rev. 36, Remote Shutdown
AOP-036, Rev. 37, Safe Shutdown Following a Fire
AP-003, Rev. 26, General Plant Personnel Safety and Housekeeping
AP-301, Rev. 44, Seasonal Weather Preparations and Monitoring
CRC-210, Rev. 13, Diesel Fire Pump Engine Fluid Chemistry Monitoring
EOP-EPP-004, Rev.13, Reactor Trip Response
EOP-Guide-1,Rev. 16, Path-1 Guide
FPP-001, Rev. 27, Fire Protection Program Manual
FPP-002, Rev. 22, Fire Emergency
FPP-003, Rev. 7, Fire Investigation Report
FPP-004, Rev. 15, Transient Combustible Control
FPP-005, Rev. 16, Duties of a Fire Watch
FPP-007, Rev. 13, Control of Flammable and Combustible
FPP-008, Rev. 8, Control of Fuel Gases and Oxygen
FPP-011, Rev. 6, Explosive Material Safety
FPP-012-02-RAB286, Rev. 0, Fire Pre-Plan A19-5-261-0602, RAB Fire Zone 1-A-4-CHLR
FPP-012-02-RAB286, Rev. 0, Fire Pre-Plan A33-6-286-0637, RAB Fire Zone 1-A-5-HVB
FPP-012-02-RAB305, Rev. 0, Fire Pre-Plan A51-7-305-0204, RAB Fire Zone 12-A-6-CR1
FPP-012-02-RAB305, Rev. 0, Fire Pre-Plan A55-6-305-0212, RAB Fire Zone 12-A-6-PICR1
FPP-013, Rev. 39, Fire Protection - Minimum Requirements, Mitigating Actions, and Surveillance Requirements
FPQ-0001H, Rev. 5, Fire Drill Planning Guide and Critique Evaluation Form
FPT-3002, Rev. 17, Fire Main Valve Position Verification, Quarterly Interval
FPT-3003, Rev. 15, Fire Suppression Valve Cycle Test, 12 Month Interval
FPT-3006, Rev. 7, Fire Main Flow Test, Three Year Interval
FPT-3008, Rev. 8, Fire Hydrant Inspection
FPT-3009, Rev. 10, Fire Hydrant Flow Test, Annual Interval
FPT-3101, Rev. 13, Hose Rack Inspection, Quarterly Interval
FPT-3151, Rev. 1, Fire Extinguisher Inspection, Monthly Interval
MMM-011, Rev. 26, Cleanliness and Housekeeping
MNT-NGGC-0004, Rev. 6, Scaffolding Control
OMM-001,Rev. 62, Conduct of Operations
OP-173, Rev. 25, Control Room Area HVAC System
ORT-3001, Rev. 14, Fire Equipment Inspection
PLP-401, Rev. 20, Ladder and Equipment Use and Storage
TPP-219, Rev. 11 Emergency Services Training Program
WCM-001, Rev. 16, On-Line Maintenance Risk Management

Fire Brigade and Operator Job Performance Measures (JPM) Training

FPP-LP-12.2, Rev. 4, Fire Pre-Plans
FPP-LP-12.6, Rev. 5, Fire Protection Systems
FPP-LP-12.18, Rev. 2, Search and Rescue
FPP-FB01H, Rev. 1, Fire Brigade Leader Training

JPM-IP-050, Rev. 12, Transfer Control to the ACP
JPM-IP-046, Rev. 7, Locally Trip "B" RCP
JPM-IP-047, Rev. 10, Transfer Control of Train "A" from the ACP to the MCB
JPM-IP-047a, Rev. 0, Transfer Control of Train "A" from the ACP to the MCB
JPM-IP-049, Rev. 11, Determine Boric Acid Addition Following CR Evacuation
JPM-CR-107, Rev. 4, Using ESW System as a Backup Source of Water to AFW
JPM-IP-086, Rev. 9, Trip the Rod Drive MG Sets
JPM-IP-118, Rev. 8, Establish CSIP Suction from the RWST
JPM-IP-119, Rev. 7, Verify Charging Pump Valve Positions per AOP-004
JPM-IP-163, Rev. 3, Local Makeup to the VCT Using 1CS-526 (Gravity Feed Valve)
JPM-IP-141, Rev. 10, Inhibit Both Trains of SSPS

Completed Surveillance Procedures and Test Records

MPT-E0030, Rev. 18, Self Contained DC Emergency Lighting System Test/Inspection
MPT-E0032, Rev. 17, Self Contained DC Emergency Lighting System Eight Hour Life Test
ORT-1407, Rev. 9, ACP Materials Audit Semiannual Interval Modes 1-6
ORT-1813, Remote Shutdown Test of Additional Components on the ACP 18 Month Interval Modes 5, 6 or Defuelled, Rev. 6
OST-1858, Remote Shutdown System Operability - Bus Drops Train A 18 Month Interval Modes 5, 6 or Defuelled, Rev. 10
OST-1860, Remote Shutdown: Reactor Trip Breakers 18 Month Interval Modes 5, 6 or Defuelled, Rev. 4
CM-M0202, Essential Chiller Leak Testing, Evacuation and Dehydration, Work Order (WO) 675619 to Drain and Replace Compressor Oil, completed July 19, 2005
FPT-3205, Fire Detector Functional Test, 12 Month Interval, Control Panel 5, completed December 9, 2004
FPT-3302, Main Drain Test Auxiliary Building, dated June 28, 2004
FPT-3425, Fire Damper Inspection, 18 Month Interval, RAB 286 Elevation, completed September 3, 2003
FPT-3431, Fire Damper Inspection, 18 Month Interval, RAB 305 Elevation, completed October 24, 2004
FPT-3505, Fire Door Inspection, Semi-Annual Interval, RAB, completed August 18, 2005

Calculations, Evaluations, and Specifications

DBD-137, Reactor Auxiliary Building HVAC Systems, Rev. 17
DBD-203, Plant Lighting System, Rev. 4
DBD-316, Fire Barrier System, Rev. 1
Calculation E-5525, Essential Systems for Safe Shutdown
CAR-SH-E-6A, Specification for Metal-Clad Switchgear Removable Circuit Breaker Type 6.9 kV Switchgear, Rev. 8
CAR-SH-E-14A, Specification for 15 kV Power Cable, Rev. 6
CAR-SH-E-18A, Specification for 125 V & 250 V Storage Batteries, Rev. 8
HNP-M/BMRK-0001, Code Compliance Evaluation NFPA 72E-Automatic Fire Detectors, Rev. 1
HNP-M/BMRK-0002, Code Compliance Evaluation NFPA 72D-Fire Detection Systems, Rev. 1 HNP-M/BMRK-0007, Code Compliance Evaluation NFPA 20-Centrifugal Fire Pumps, Rev. 1

CAR-SH-AS-54, Specification for Fire and Control Doors and Hardware, Rev. 7
CAR-SH-BE-09, Specification for Fixed Automatic Water Extinguishment Systems, Rev. 2
Hydraulic Sprinkler Calculation for System 1A-1-261, Rev. 0

Drawings

CAR-2166, B-401, Steam Break Protection Instrumentation, Sheet 1
CAR-2166, B-401, RCS T-Avg Delta T Protection System Loop Temperature Instrumentation, Sheet 2
CAR-2166, B-401, Steam & Feedwater Flow Protection Instrumentation, Sheet 1
CAR-2166, B-401, Containment Pressure Protection Instrumentation
CAR-2166, SK-E-542S13, Reactor Auxiliary Building SSA in Case of a Fire EL 261' Sheet 2
CAR-2166, SK-E-542S15, Reactor Auxiliary Building SSA in Case of a Fire EL 261' Sheet 4
CPL-2165-S-1000, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Reactor Aux. Bldg. EL. 305'-0
CPL-2165-S-1001, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Reactor Aux. Bldg. EL. 286'-0
CPL-2165-S-1002, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Reactor Aux. Bldg. EL. 261'-0
CPL-2165-S-1003, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Reactor Aux. Bldg. EL. 236'-0
CPL-2165-S-1004, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Reactor Aux. Bldg. EL. 216'-0 & 190'-0
CPL-2165-S-1005, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Reactor Aux. Bldg. EL. 236'-0 & 221'-0
CPL-2165-S-1006, Safe Shutdown Analysis Emergency Lighting and Access/Egress Path Layout Diesel Generator Bldg.
CAR-2165 G-055, Flow Dgm. Fire Protection Sys. Sheet 1, Rev. 28
CAR 2166 G-029, Main & 6900 V Auxiliary One Line Dgm., Rev. 13
CAR 2166 G-037S01, General Service Aux. One Line Wiring Dgm. Bus 1-4A, Rev. 11
CAR 2166 G-030, 480 V Aux. One line Dgm., Rev. 17
CAR 2166 G-0055, Yard Duct Runs, Rev. 17
CAR 2166 G-064, Yard Duct Runs, Sections & Details, Sheet 4, Rev. 7
CAR 2166 G-090, DG Building Conduit & Grounding Plan, Sheet 1, Rev. 12
CAR 2166 G-176, TG Area Gr. Floor, Underground Conduit & Grounding, Rev. 16
CAR 2166 G-328S01, Sheet 1, Control Room Area Lighting, Rev. 18
CAR 2166 G-328S02, Sheet 2, Control Room Area Lighting, Rev. 9
CAR 2166 G-345, RAB Lighting El. 286.00', Sheet 1, Rev. 9
CAR 2166 G-346, RAB Lighting El. 286.00', Sheet 2, Rev. 8
CAR-B-041 0172S03, Power Dist. & Motor Data, 480 V MCC 1A21-SA, Rev. 17
CAR-B-041 0682, Power Dist. & Motor Data, 125 V DC PP DP-1A, Rev. 10
CAR-B-041 Sheet 195S01, Power Dist. & Motor Data, 480 V MCC 1E21, Rev. 11
CAR-B-041 Sheet 178S03, Power Dist. & Motor Data, 480 V MCC 1B21-SB, Rev. 13
CAR-B-041 0684, Power Dist. & Motor Data, PP DP-1A-2, Rev. 10
CAR 2166-B-043S01, Sheet 1701-1, Cable & Raceway System Report, Rev. 28
CAR 2166-B-043S01, Sheet 17049-1, Cable & Raceway System Report, Rev. 28
CAR 2166-B-043S01, Sheet 4450-1, Cable & Raceway System Report, Rev. 24

CAR-2166 B-047, Sheet 112, Lighting Panel Details, Rev. 10
CAR-2166 B-047, Sheet 113, Lighting Panel Details, Rev. 10
CAR-2166 B-047, Sheet 116, Lighting Panel Details, Rev. 5
CAR-2166 B-047, Sheet 118, Lighting Panel Details, Rev. 14
CAR-2166 B-047, Sheet 124, Lighting Panel Details, Rev. 6
CAR-2166 B-047, Sheet 125, Lighting Panel Details, Rev. 10
CAR-2166 B-047, Sheet 127, Lighting Panel Details, Rev. 8
CAR-2166 B-047, Sheet 128, Lighting Panel Details, Rev. 8
CAR-2166 B-047, Sheet 140, Lighting Panel Details, Rev. 2
CAR-2166 B-047, Sheet 142, Lighting Panel Details, Rev. 2
CAR 2166-B-060, Sheet 8A, Miscellaneous Electrical Details & Notes, Rev. 11
CAR 2166-B-041, Sheet 79, Power Dist. & Motor Data, 480 V Gen. Serv. Bus 1-4A101, Rev. 79
CAR 2166-B-041, Sheet 641, Power Dist. & Motor Data, 208/120 V Pwr. Pnl. PP-1-4A10121, Rev. 7
CAR-B-041, Sheet 189S02, Power Dist. & Motor Data, 480 V MCC 1D21, Rev. 14
CAR 2166-B-401,Sheet 1729, Cont. Wiring Sch. 6.9 kV Emerg. Bus 1A-SA Relay and Inst. Potential, Rev. 14
CAR 2166-B-401, Sheet 1784, Cont. Wiring Dgm. 480 V Emerg. Bus 1A2-SA Inst. Potential, Rev. 12
CAR 2166-B-401, Sheet 2583, Control Wiring Dgm. Diesel Driven Emer. Fire Pump 1-4A-NNS, Rev. 10
CAR 2167 G-0510S1, Elec. Manholes M71, M72, & M73, MAS & Reinf. Dh. 1, Rev. 6
CAR 2167 G-0509, Protective Mats For Class 1 Yard Duct Runs, Plan & Misc. Dets. M & R, Rev. 8
CAR B-058, Sheet 523, Unit 1 Manhole & Handhole Details, Rev. 3
CPL 2166 S-0302, Sheet 20, Medium Voltage Relay Settings 6900 V Emerg. Bus 1A-SA, Rev. 8
CLP-2166S-2108, Fire Protection RAB, Plan El. 305.00', Fire Hazards Analysis, Rev. 0
CAR-1364, 93040, Typical EC-1 & EC-2, Fire Seal RTV Foam Seal Material, Rev. 1
CAR-1364, 93042, Typical ML-1, Fire Seal LDSE Foam Seal Material, Rev. 4
CAR-1364, 93044, Typical ES-1 & ES-3, Fire Seal RTV Foam Seal Material, Rev. 0
CAR-1364, 93049, Typical EL-1 & EL-2, Fire Seal LDSE Foam Seal Material, Rev. 3
CAR-1364, 93052, Fire Seal Siesmic Gap RTV Foam Seal Material, Rev. 1
CAR-2165, S-0555, Flow Diagram, Fire Protection System, Rev. 18
CAR-2166, S-2106, Fire Protection, Reactor Auxiliary Building, Plan El. 261.00', Fire Hazards Analysis, Rev. 0
CAR-2166, S-2107, Fire Protection, Reactor Auxiliary Building, Plan El. 286.00', Fire Hazards Analysis, Rev. 1
CAR-2166, S-2108, Fire Protection, Reactor Auxiliary Building, Plan El. 305.00', Fire Hazards Analysis, Rev. 0
CAR-2167, S-016, RAB Penetrations, Rev. 1
CAR-2167, S-042, RAB El. 305.00' Wall Penetrations, Rev. 3
CAR-2168, G-033SO6, Arch. Door Schedule, Fire and Control Doors, Rev. 6
CAR-2168, G-508SO1, HVAC-RAB Switchgear Equip. Area, Plan & Section, El. 286.00', Unit 1, Rev. 14
CAR-2168, G-611, RAB Plumbing & Drainage, Unit 1, Rev. 9

CAR-2168, G-614SO1, RAB Riser Diagrams Plumbing & Drainage, Unit 1, Rev. 4
CAR-2168, S-9456, Mounting Details for Fire Extinguishers, Rev. 1
CAR-2168, S-9701, S11, Details - HVAC Penetrations, Rev. 4

Design Changes

EC 50147, Fire Protection System Changes, Rev. 3
ESR 9900046, Heavy Timber Use as Flame Retardant, dated January 30, 1999

Applicable Codes and Standards

IEEE Std 690-1984, IEEE Standard for the Design and Installation of Cable Systems for Class 1E Circuits in Nuclear Power Generating Stations
NFPA 10, Installation of Portable Fire Extinguishers, 1978 Edition
NFPA 13, Standard for the Installation of Sprinkler Systems, 1978 Edition
NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 1976 Edition
NFPA 20, Standard for the Installation of Centrifugal Fire Pumps, 1972 Edition
NFPA 24, Outside Protection, 1977 Edition
NFPA 30, Flammable and Combustible Liquids Code, 1977 Edition
NFPA 72D, Standard for the Installation, Maintenance, and Use of Proprietary Protection Signaling Systems, 1975 Edition
NFPA 72E, Standard on Automatic Fire Detectors, 1978 Edition
NFPA 80A, Standard on Fire Doors and Windows, 1979 Edition
NFPA 101, Life Safety Code, 1996 Edition
NUREG-1552, Supplement 1, Fire Barrier Penetration Seals in Nuclear Power Plants, dated January 1999
OSHA 29 CFR Part 1910.36
Underwriters Laboratory, Fire Resistance Directory, dated January 1998
Underwriters Laboratory Standard 555, Standard for Fire Dampers and Ceiling Dampers, dated May, 14, 1979

Vendor Technical Manuals and Information

Westinghouse Technical Bulletin TB-04-22, Reactor Coolant Pump Seal Performance and Appendix R Compliance, dated 11/17/2004
Westinghouse Technical Bulletin TB-04-22, Rev. 1, Reactor Coolant Pump Seal Performance - Appendix R Compliance and Loss of All Seal Cooling, dated 08/09/2005
VTD-Dual-0002, Emergency Lighting Service Manual
Vendor Drawing 1364-1699, 115 V AC Wiring Diagram, Rev. 0
Vendor Drawing, 1364-001813, Diesel Engine Controller Schematic, Rev. 6
Vendor Drawing, 1364-1816, Diesel Engine Controller Ext. Conn., Rev. 4
Data Sheet AFC-183, Angus Alcoseal 3-6% Film Forming Fluoro-protein Foam, dated July 2004
Data Sheet DF 1025, Low Voltage Ionization Detector, Johnson Controls Inc., dated June 1979
Data Sheet NC48-194, Rate Compensated Thermal Detector, Johnson Controls Inc., dated June 1979
Data Sheet SD-319A-04.11, UL Classified 3-HR. Static Rated Fire Damper Model 319A, Air Balance Inc.

Data Sheet J-2.5, Model F Sprinkler, Automatic Sprinkler Corporation, dated July 1981
Specification Sheet for Ram Fan Model GF165 Ventilator, dated August 30, 2005
Specification Sheet for Tempest Belt-Driven Blower Model BD 21-H-6.5, dated August 30, 2005
Specification Sheet for SuperVac Model P164SE-16 Smoke Ejector, dated August 30, 2005
Specification Sheet for SuperVac Model AirPac 25 Ventilator, dated August 30, 2005

Audits and Self Assessments

HNP Self-Assessment Report Number 111254, July 14 to July 28, 2004
SHNPP Nuclear Assessment Section (NAS) Fire Protection Assessment Number H-FP-03-01, dated November 21, 2003
HNP Assessment Number 00144839, Fire Protection Program, April 11 to April 29, 2005

Licensing Basis Documents

UFSAR, Chapter 7.4.1.11, Safe Shutdown from Outside the Control Room
UFSAR, Chapter 9.5.2, Communications Systems
UFSAR, Chapter 9.5.3, Lighting Systems
Technical Specification 6.2.2, Unit Staff
Technical Specification 6.8.1, Procedures and Programs
NUREG-1038, Safety Evaluation Report (SER) Related to the Operation of Shearon Harris Nuclear Power Plant (SHNPP), Unit 1
NUREG-1038, SER Supplements 1, 2, 3, and 4
SHNPP to NRC Letter NLS-86-101, Fire Protection - Additional Information, dated April 4, 1986
SHNPP to NRC Letter NLS-86-137, Fire Protection - BTP 9.5-1, dated May 7, 1986

Other Documents

NRC Information Notice (IN) 2002-12, Submerged Safety Related Electric Cables, 3/21/02
IN 2003-08, Potential Flooding through Unsealed Concrete Floor Cracks, dated June 25, 2003
IN 2005-11, Internal Flooding/Spray-Down of Safety-Related Equipment Due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains, dated May 6, 2005
IN 2005-14, Fire Protection Findings on Loss of Seal Cooling to Westinghouse Reactor Coolant Pumps, dated June 1, 2005
Action Requests (ARs) Resulting from Fire, Smoke, Sparks, Hot, Arcing, and Equipment Overheating Incidents for the period July 2002 through July 2005
Fire Investigation Reports (FPP-003, Attachment 2) for the period July 2002 through July 2005
American Flow Control Company, Product Alert for Certain Fire Hydrant Operating Rods with Casting Dates 1999 through 2003, dated May 2005
Fire Protection Out of Service Log (OOSL) Report for Fire Deficiencies from January 2004 to July 2005
Memorandum J. N. Hannon to A. T. Howell, Response to Region IV Task Interface Agreement (TIA) (96TIA008) - Evaluation of Definition of Continuous Fire Watch (TAC No. M96550), dated August 17, 1998, [Adams No. ML01240048]
U. S. Consumer Product Safety Commission, Release # 04-229, Recall of Amana, Trane, and American Standard Brand Package Terminal Air Conditioners/Heat Pumps, dated September 30, 2004

Work Orders (WO)

WO 00611191-01, Replacement of Space Heater Breaker
WO 00358524 01, MCC Space Heater Thermostat Adjust
WO 00666164, Pump Out Manholes
WO 00682788, Pump Out Manholes
WO 00699063, Pump Out Manholes
WO 00718164, Pump Out Manholes
WO 00212312, MPT-E0038, Sound Powered Phone Testing
WO 00212313, MPT-E0038, Sound Powered Phone Testing
WO 00216085, MPT-E0038, Sound Powered Phone Testing
WO 00216086, MPT-E0038, Sound Powered Phone Testing
WO 00216087, MPT-E0038, Sound Powered Phone Testing
WO 00216088, MPT-E0038, Sound Powered Phone Testing
WO 00226167, MPT-E0038, Sound Powered Phone Testing
WO 00376229, MPT-E0032, Rev. 14, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00376230, MPT-E0032, Rev. 14, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00376231, MPT-E0032, Rev. 14, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00397563, MPT-E0038, Rev. 1, Sound Powered Phone Testing
WO 00457011, MPT-E0032, Rev. 14, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00524575, MPT-E0032, Rev. 16, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00524576, MPT-E0032, Rev. 17, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00524577, MPT-E0032, Rev. 17, Self Contained DC Emer. Lighting System 8-Hour Test
WO 00601254, MPT-E0032, Rev. 17, Self Contained DC Emer. Lighting System 8-Hour Test

Action Requests Reviewed During This Inspection

AR-0091H0092, Adequacy of Emergency and Essential Lighting
AR-00164356, Reportability Determination Input -1-A-CSRA VIA 1-A-BALC
AR-00159289, SSD Operator Manual Action Feasibility
AR-00159304, SSD Operator Manual Action Feasibility
AR-00160621, NRC IN 2005-14 Loss of Seal Cooling in Westinghouse RCPs
AR-00164357, Reportability Determination Input -MULT Areas - Stm Tunl
AR-00164358, Reportabiltiy Determination Input - Stair TWR in 1-BAL-A4
AR-00164360, Reportability Determination Input - Open Doors @ 1-A-BAL-A4
AR-00164362, Reportability Determination Input - AOP-036 Perf Delay
AR-00164363, Reportability Determination Input - LGTS/ACC to 1E21 & 1D21
AR-00164364, Reportability Determination Input - Lighting for PI-2271
AR-00164365, Reportability Determination Input - 1CS-214 Lighting
AR-00164366, Reportability Determination Input - Access to 1SW-1 & 1 SW-3
AR-00164367, Reportability Determination Input - 12-A-BAL Lighting
AR-00164368, Reportability Determination Input - 1-A-BAL-D Lighting
AR-00164369, Reportability Determination Input - Lighting for SSPS Fuses
AR-00164371, Reportability Determination Input - 1CS-235 Lighting
AR-00164372, Reportability Determination Input - MG Set Fuses @ 1E-2A
AR-00164373, Reportability Determination Input - 1CS-218 & 1CS-291 Oper
AR-00164386, Reportability Determination Input - Lights @ 1SI-3 & 1 SI-4

AR-00164387, Reportability Determination Input - Lights/ACC to 1 CS-227
AR-00164828, AOP-036 Manual Action Feasibility Study Deficiency
AR-00165026, Reportability Determination Input (SSPS Fuse/1-A-SWGRB)
AR-00165531, SSD Deficiency - Fire Area 1-A-BAL-B2
AR-00166952, Westinghouse Tech Bulletin 4-22 Rev. 1 RCP Seals and APP R
AR 115156, Above normal reading of 1A-SA Chiller Compressor current
AR 136622, Smoke at panel PP-1A211-SA
AR 58781-09, Review of IN 2002-12
AR 75339, Fire In The Turbine Building Can Cause Loss Of Both Fire Pumps
AR 76621, Fire Hose Used in Plant not Approved For Energized Electrical Equipment
AR 79228, Fire In Motor Driven Fire Pump Motor
AR 136622, Fire Alarm Received in RAB 286, Breakers Hot to Touch
AR 142134, Breaker Electrical Fault, Smoke in Fuel Handling Building

Action Requests and Work Requests Generated as a Result of This Inspection

AR 00166811, Fire in Switchyard Relay House and Battery Room
AR 00166883, Change to Procedure FPP-004 Not Adequately Evaluated As a Change to the Fire Protection Program
AR 00166888, FPP-13 Rev. 39 Fire Protection Minimum Requirements Mitigating Actions and Compensatory Measures
AR 00166939, Diesel Fire Pump Battery Temperature
AR 00167050, Transient Combustibles in “B” Cable Spreading Room
AR 00167629, Inadequately Sized Cable
AR 00167869, Drawing Error, Drawing 2166-S-2108, Incorrectly Shows Location of 3-Hour, Barrier to Pass Through Door 1FP-D0461
AR 00168113, 6.9KV Space Heater Continuous Operation
AR 00168196, MPT-E0032, Rev. 17, Self-Contained DC Emergency Lighting
AR 00168224, Diesel Fire Pump Battery Specific Gravity
AR 00168351, Manhole M523B Not Included in PM Program
AR-00168415, Battle Lantern in the ACP Tool Locker Found Not Functional
AR-168434, NFPA 805 Program Enhancement / EDG Cable Manholes
AR-168448, NFPA 805 Program Enhancement / Fire Brigade
AR-168451, NFPA 805 Program Enhancement / Detection and Suppression Activation
AR-168452, NFPA 805 Program Enhancement / Fire Watch Training
AR-168454, NFPA 805 Program Enhancement / SSD Communications Systems
AR 00168460, Potential Safety Concern / EDG Circuits in Manholes
AR 58781-09, Review of IN 2002-12 (Reopened)
WR 206185, Gurgling Noise from Fire Protection Pipe

LIST OF ACRONYMS

AOP	Abnormal Operating Procedure
AR	Action Request
BTP	Branch Technical Position
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CMEB	Chemical Engineering Branch
COR	Code of Record
EC	Engineering Change
ELU	Emergency Lighting Unit
ESR	Engineering Service Request
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
IP	Inspection Procedure
IR	Inspection Report
MCR	Main Control Room
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
OEP	Operating Experience Program
OSHA	Occupational Safety and Health Administration
RAB	Reactor Auxiliary Building
RCP	Reactor Coolant Pump
RG	Regulatory Guide
ROP	Reactor Oversight Process
SCBA	Self-Contained Breathing Apparatus
SER	Safety Evaluation Report
SHNPP	Shearon Harris Nuclear Power Plant
SSA	Safe Shutdown Analysis
SSD	Safe Shutdown
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WR	Work Request