



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

January 16, 2014

EA-14-011

Mr. David Vineyard
Vice President
Southern Nuclear Operating Company, Inc.
Edwin I. Hatch Nuclear Plant
11028 Hatch Parkway North
Baxley, GA 31513

**SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC TRIENNIAL FIRE PROTECTION
INSPECTION REPORT 05000321/2013009 AND 05000366/2013009 AND
EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Vineyard:

On December 6, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Edwin I. Hatch Nuclear Plant, Units 1 and 2, and discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

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

The NRC inspectors did not identify any findings or violations of more than minor significance. However, the enclosed report documents three noncompliances for which the NRC is exercising enforcement discretion in accordance with Section 9.1 of the NRC Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." The noncompliances are associated with your implementation of the requirements and standards of 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." The non-compliances were identified by the NRC, and are violations of NRC requirements. The inspectors have screened the violations and determined that they warranted enforcement discretion per the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues, and Section 11.05(b) of Inspection Manual Chapter 0305 "Operating Reactor Assessment Program."

You are not required to respond to this letter. In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

RA

Scott M. Shaeffer, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos.: 50-321, 50-366
License Nos.: DPR-57, NPF-5

Enclosures:
Inspection Report 05000321/2013009, 05000366/2013009
w/Attachment: Supplementary Information

cc: Distribution via Listserv

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DATE	1/ 16 /2014	1/ 16 /2014	1/ 16 /2014	1/ 16 /2014	1/ 16 /2014	1/16 /2014	
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Letter to David Vineyard from Scott M. Shaeffer dated January 16, 2014.

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC TRIENNIAL FIRE PROTECTION
INSPECTION REPORT 05000321/2013009 AND 05000366/2013009

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-321, 50-366

License Nos.: DPR-57, NPF-5

Report Nos.: 05000321/2013009 and 05000366/2013009

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Edwin I. Hatch Nuclear Plant

Location: Baxley, GA 31513

Dates: November 18 – 22, 2013 (Week 1)
December 2 – 6, 2013 (Week 2)

Inspectors: J. Montgomery, Reactor Inspector (Lead Inspector)
O. López, Senior Reactor Inspector
M. Thomas, Senior Reactor Inspector
P. Braxton, Reactor Inspector

Accompanying
Personnel: W. Monk, Reactor Inspector (Training)

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

Enclosure

SUMMARY

IR 05000321/2013-009, 05000366/2013-009; 11/18-22/2013 and 12/2-6/2013; E.I. Hatch Nuclear Plant, Units 1 and 2; Fire Protection (Triennial).

This report covers an announced two-week triennial fire protection inspection by a team of four regional inspectors and one inspector in training. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Rev. 4, dated December 2006.

No findings were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R05 Fire Protection

This report documents the results of a triennial fire protection inspection of the E.I. Hatch Nuclear Plant (HNP) Units 1 and 2. The inspection was conducted in accordance with the guidance provided in NRC Inspection Procedure 71111.05T, "Fire Protection (Triennial)," dated January 31, 2013. The objective of the inspection was to review a minimum sample of three risk-significant fire areas (FAs) to evaluate implementation of the Hatch Fire Protection Program (FPP). An additional objective was to review site specific implementation of one mitigating strategy from Section B.5.b of NRC Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (commonly referred to as B.5.b), as well as the storage, maintenance, and testing of B.5.b mitigating equipment. The sample FAs were chosen based on a review of available risk information as analyzed by a senior reactor analyst from Region II, a review of previous inspection results, plant walkdowns of FAs, consideration of relational characteristics of combustible material to targets, and location of equipment needed to achieve and maintain safe shutdown (SSD) of the reactor. In selecting a B.5.b mitigating strategy sample, the team reviewed licensee submittal letters, safety evaluation reports (SERs), licensee commitments, B.5.b implementing procedures, and previous NRC inspection reports. Section 71111.05-05 of the IP specifies a minimum sample size of three FAs and one B.5.b mitigating strategy for addressing large fires and explosions. This inspection fulfilled the requirements of the procedure by selecting a sample of three FAs and one B.5.b mitigating strategy. The FAs chosen were identified as follows:

1. Fire Zone 0024B, Computer Room
2. Fire Area 1017, East 600V Switchgear Room 1D
3. Fire Area 1020, East DC Switchgear Room 1B

For each of the selected FAs, the team evaluated the licensee's FPP against applicable NRC requirements and licensee design basis documents. Applicable licensing and design basis documents reviewed by the team are listed in the Attachment to this report.

.01 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the licensee's FPP referenced in the Unit 1 Updated Final Safety Analysis Report (UFSAR) Section 10.8; the licensee's safe shutdown analysis report (SSAR); fire hazards analysis (FHA); plant procedures; piping and instrumentation drawings (P&IDs); electrical drawings; and other supporting documents. The team performed the review to verify that hot and cold shutdown could be achieved and maintained from the main control room (MCR) for postulated fires in FAs 1017 and 1020. The review included verification that shutdown from the MCR could be performed both with and without the availability of offsite power. The team performed in-plant inspections to verify that the plant configuration was consistent with that described in the FHA and SSAR. The team reviewed the licensee's shutdown methodology to verify that it properly identified the components and systems necessary to achieve and maintain SSD conditions for postulated fires resulting in shutdown

from the MCR. The team focused their inspection activities on systems specified in the SSAR for reactivity control, reactor coolant makeup, and decay heat removal, as well as process monitoring instrumentation and necessary support systems.

The team reviewed and performed a walkthrough of procedure steps used for post-fire SSD to ensure the technical and human factors adequacy of the procedures. The team verified the licensee personnel credited for performance of procedures were available in the event a fire occurred, had procedures available, and were trained on implementation. The team also verified that operators could reasonably be expected to perform the procedure actions in order to maintain plant parameters within specified limits. The team reviewed and walked down applicable sections of Abnormal Operating Procedure (AOP) 34AB-X43-001-1, "Fire Procedure" for Unit 1 FAs 1017 and 1020. The team reviewed operator actions to ensure these actions could be implemented in accordance with plant procedures in a manner necessary to support the SSD method for the applicable fire area.

b. Findings

No findings were identified.

.02 Passive Fire Protection

a. Inspection Scope

The team walked down the selected FAs and fire zone (FZ) to evaluate the adequacy of the fire resistance of walls, ceilings, and floors. This evaluation also included fire barrier concrete block walls, penetration seals, fire doors, and fire dampers to ensure that at least one train of SSD equipment would be maintained free of fire damage. Construction detail drawings and fire tests were reviewed as necessary. Where applicable, the team observed the installed barrier assemblies and compared the as-built configurations to the approved construction details. The team also reviewed supporting fire endurance test data; licensing basis commitments; and standard industry practices.

b. Findings

No findings were identified.

.03 Active Fire Protection

a. Inspection Scope

The team reviewed the redundancy of fire protection water sources and fire pumps to confirm they were installed in accordance with the National Fire Protection Association (NFPA) codes of record. The team performed in-plant observations of the material condition and operational lineup of the fire water pumps and fire protection water supply distribution piping, including manual fire hose and standpipe systems for the selected FAs/FZ. Using operating and valve cycle/alignment procedures, as well as engineering drawings, the team examined the electric motor-driven and the diesel-driven fire pumps and accessible portions of the fire main piping system to evaluate operational status, accuracy of as-built configurations, and to verify correct system valve lineups (i.e. position of valves).

The team compared the fire detection and fire suppression systems for the selected FAs/FZ to the applicable NFPA standard(s) by reviewing design documents; and observed the as-installed configurations of the systems during plant walkdowns. The team reviewed selected fire protection vendor equipment specifications, drawings, and engineering calculations to determine whether the fire detection and suppression methods were appropriate for the types of fire hazards that existed in the selected FAs/FZ. During plant walkdowns, the team observed the placement of the fire hose stations, fire extinguishers, fire hose nozzle types, and fire hose lengths, as designated in the firefighting pre-plan strategies, to verify they were not blocked, and that adequate reach and coverage was provided consistent with the firefighting strategies and FPP documents. The team reviewed completed periodic surveillance testing and maintenance program procedures for the fire detection and suppression systems and compared them to operability requirements, testing criteria, and compensatory measures. This review was to assess whether the test program was sufficient to validate proper operation of the fire detection and suppression systems in accordance with their design requirements.

Aspects of fire brigade readiness were reviewed, including, but not limited to, the fire brigade's personal protective equipment, self-contained breathing apparatuses, portable communications equipment, and other fire brigade equipment to determine accessibility, material condition and operational readiness of equipment. During plant walkdowns, the team compared firefighting pre-plan strategies to existing plant layout and equipment configurations and to fire response procedures for the selected FAs/FZ. This was done to verify that firefighting pre-fire plan strategies and drawings were consistent with the fire protection features and potential fire conditions within the area and also to determine if appropriate information was provided to fire brigade members to facilitate suppression of an exposure fire that could impact the SSD strategy.

b. Findings

1. Adequacy of Carbon Dioxide (CO₂) Concentration in FZ 0024B

Introduction: The NRC identified a non-compliance of Hatch Renewed Operating License Conditions (OLCs) 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 respectively, because the installed carbon dioxide (CO₂) fire suppression system in the computer room (FZ 0024B) could not deliver the required gas concentration.

Description: The computer room (FZ 0024B) CO₂ gas suppression system was designed in accordance with NFPA 12, "Carbon Dioxide Extinguishing Systems 1973." NFPA 12 required a minimum concentration of 50 percent to extinguish fires in dry electrical and wiring insulation hazards. The computer room contained dry electrical wiring insulation hazards in the form of cable insulation and computer/server components. The licensee could not show that 50 percent concentration could be met for the installed system configuration in the computer room.

The team identified the problem by calculating the initial CO₂ concentration that would be achieved upon system activation. The team reviewed calculation SX11992, "FP-LP CO₂ Flow Calculation Cable Spreading Room"; Section IV.C of the FHA; and procedure 52SV-FPX-010-0, "Low Pressure CO₂ System Surveillance", Version 3. Procedure 52SV-FPX-010-0 stated that the acceptable range for discharge time was between 3 minutes and 17 seconds and 3 minutes and 23 seconds. The team obtained the volume of the room, the required design concentration, expected CO₂ loss due to leakage, and CO₂ discharge rate in 2 minutes. Based on the room volume, including expected losses due to leakage, and expected flow rate, the team determined a discharge time of 3 minutes and 45 seconds would be required to

reach the design concentration. Using the criteria in procedure 52SV-FPX-010-0, the team determined that the system would discharge approximately 88% of the required concentration. As a result, the team determined that the time of discharge was not sufficient to release the needed concentration of CO₂ in the room to adequately suppress a fire in that room. Since system discharge testing had not been performed, the problem went undetected until identified by the team. The licensee performed a preliminary calculation that confirmed the team's results, and entered the issue into the corrective action program (CAP) as Condition Report (CR) 736771. Additionally, the licensee determined that the current procedure did not address leakage out of the room to ensure that the required concentration was maintained.

The licensee implemented interim actions to ensure adequate CO₂ concentration in the event of a fire in the computer room. The interim actions included increasing the minimum CO₂ level in the associated tank to 70%; and revising procedure 34SO-Z43-002-2 to require an additional 60 seconds of discharge time.

Analysis: The team determined that the licensee's failure to implement design requirements for the CO₂ system in the computer room was a performance deficiency. This performance deficiency was determined to be more than minor because it was associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e. fire), and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the discharge time for the fire suppression system in FZ 0024B was not sufficient to release the required CO₂ concentration to adequately suppress a fire.

The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process," review was required because the finding affected fixed fire protection systems. Using the "Fire Protection SDP Phase 1 Screening", the finding was assigned a category of "Fixed Fire Protection Systems."

Using IMC 0609, Appendix F, Attachment 2, the finding was assigned a High degradation rating because the suppression system would not reach the designed concentration as required by NFPA 12. The team used step 1.4 "Qualitative Screening Question Set for Seven Individual Categories," task 1.4.2 "Fixed Fire Protection System" of IMC 0609, Appendix F, Attachment 1 to determine the finding to be of very low safety significance (i.e., Green) because the finding affected only a manually actuated suppression system for an area that is accessible by the fire brigade.

The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Enforcement: Hatch Renewed OLCs 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 respectively, state, in part, that Southern Nuclear shall implement and maintain in effect all provisions of the fire protection program, which is referenced in the Updated Final Safety Analysis Report for the facility, as contained in the updated Fire Hazards Analysis and Fire Protection Program for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, which was originally submitted by letter dated July 22, 1986.

Section IV.C.5, Carbon Dioxide Suppression Systems, of Appendix D of the FHA states, in part, that the computer room design concentrations are in compliance with NFPA Standard No. 12,

Section 2421, which requires a 50-percent concentration for "dry electrical, wiring insulation hazards in general". NFPA 12 states, in part, that an acceptable CO₂ system deliver and hold a minimum gas concentration of 50 percent in the protected area.

Contrary to the above, the CO₂ system design concentration in the computer room is not in compliance with the Hatch FHA, in that the CO₂ system would not deliver and hold a minimum gas concentration of 50 percent in the protected area. The violation has existed since initial plant start-up. The licensee entered the deficiency in the CAP as CR 736771.

Because the licensee committed to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement and reactor oversight process (ROP) discretion for this issue in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and Inspection Manual Chapter 0305. Specifically, this issue was identified and will be addressed during the licensee's transition to NFPA 805, was entered into the licensee's corrective action program, immediate corrective action and compensatory measures were taken, was not likely to have been previously identified by routine licensee efforts, was not willful, and it was not associated with a finding of high safety significance (i.e., Red).

2. Failure to Meet Section IV.C, Fire Detection and Suppression of Appendix D of the Fire Hazards Analysis

Introduction: The NRC identified a non-compliance of Hatch OLCs 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 respectively, for the failure to locate fire extinguishers in the cable spreading room (CSR) in accordance with NFPA 10 and for the failure to locate manual hose stations in or near the CSR, such that an effective hose stream could be directed to any area in the room.

Description: The FHA stated that the CSR (FZ 0024A) was equipped with a hose station and a fire extinguisher located in the adjacent room (FA 0025 mezzanine) for manual firefighting. The FHA stated that the area had mostly Class A (cable insulation) combustibles with a fire duration of greater than three hours. As a result, the licensee designated the CSR as having a high combustible loading. The FHA stated that manual firefighting equipment was fully adequate to extinguish the fire if the automatic suppression system failed.

The requirements for manual firefighting capabilities were described in Section IV.C, "Fire Detection and Suppression" of Appendix D of the FHA. Section IV.C.6 required the licensee to provide portable fire extinguishers in the plant in accordance with NFPA 10, "Standard for Portable Fire Extinguishers." For Class A hazards (such as cable insulation), NFPA 10 required fire extinguishers to be located such that the maximum travel distance to an extinguisher was 75 feet.

The team identified that there were no fire extinguishers located in the CSR. The closest fire extinguisher to the CSR was located in an adjacent room (FA 0025 mezzanine). Based on the physical dimensions of the CSR, and physical obstructions in the room due to cable trays, the team determined that the travel distances from at least half of the CSR to the closest fire extinguisher exceeded the 75 foot maximum travel distance specified in NFPA 10.

Section IV.C.3.d of Appendix D of the FHA required the licensee to provide manual hose stations throughout the plant to ensure that an effective hose stream could be directed to any area in the plant. The team observed that there was one hose station (HS-C20) inside the CSR and another hose station (HS-C21) in the adjacent room (FA 0025 mezzanine). However, the

team noted that the licensee had deemed HS-C20 as not usable because cable trays blocked access to the hose. On July 20, 2011, the licensee implemented LDCR 2011-024 to remove the regulatory requirements for this hose station. Hose station HS-C21 was selected to serve the CSR. Additional fire hose was staged at HS-C21 to ensure that area wide coverage of the CSR was available with the fire hose stream. The team noted that the licensee did not consider physical obstructions presented in the room due to cable trays and the torturous path that responders would have to take to cover the entire CSR. Therefore, the team determined that the additional fire hose staged at HS-C21 was not sufficient to provide an effective hose stream to all areas in the CSR.

In response to these issues, the licensee initiated CR 740396 for the deficiency related to fire extinguisher placement; and CR 741521 for the deficiency related to the CSR fire hose coverage. The licensee also began evaluating potential locations in the CSR where fire extinguishers could be installed to facilitate firefighting efforts in the CSR.

Analysis: The team determined that the licensee's failure to locate fire extinguishers in the CSR, and failure to locate manual hose stations in or near the CSR such that an effective hose stream could be directed to any area in the room were performance deficiencies. The performance deficiencies were determined to be more than minor because they were associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e. fire), and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the performance deficiencies could adversely impact timely manual fire suppression capability of a fire.

The finding was screened in accordance with IMC 0609, "Significance Determination Process (SDP)," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process," review was required because the finding affected manual firefighting. Using the "Fire Protection SDP Phase 1 Screening," the finding was assigned a category of "Manual Firefighting."

The team used step 1.3 "Ability to Achieve Safe Shutdown," task 1.3.1 "Screen Fire Finding for Ability to Achieve Safe Shutdown" of IMC 0609, Appendix F, Attachment 1 to determine the finding to be of very low safety significance (i.e., Green) because the finding was assigned a low degradation rating. Using IMC 0609, Appendix F, Attachment 2, the finding was assigned a low degradation rating because the CSR was equipped with pre-action sprinkler system and fire detection that would alarm in the control room. Additionally, a hose station and fire extinguisher located outside the room would provide partial coverage for the CSR.

The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Enforcement: Hatch Renewed OLCs 2.C.(3) and 2.C.(3)(a), for Units 1 and 2 respectively, states, in part, that Southern Nuclear shall implement and maintain in effect all provisions of the fire protection program, which is referenced in the Updated Final Safety Analysis Report for the facility, as contained in the updated Fire Hazards Analysis and Fire Protection Program for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, which was originally submitted by letter dated July 22, 1986. Section IV.C, "Fire Detection and Suppression" of Appendix D of the FHA, contains requirements for the licensee's manual suppression capability.

Contrary to the above, the licensee failed to meet the requirements of Section IV.C. of Appendix D of the FHA, with the following examples:

1. Section IV.C.3.d, Water Sprinkler and Hose Standpipe Systems, of Appendix D of the FHA states, in part, that manual hose stations are located throughout the plant. An effective hose stream can be directed to any area in the plant. Contrary to the above, the licensee failed to locate manual hose stations in or near the CSR such that an effective hose stream could be directed to any area of the CSR. This issue has existed since 2011, when the licensee completed a plant change to take credit for hose HS-C21 to combat a fire in the CSR.
2. Section IV.C.6, "Portable Extinguishers", of Appendix D of the FHA states that portable fire extinguishers are provided in the plant in accordance with NFPA 10. NFPA 10 (1975 Edition), requires that fire extinguishers serving Class A hazards (such as cable insulation) be located such that the maximum travel distance to extinguisher is 75 feet. Contrary to the above, the licensee failed to locate fire extinguishers in an area serving Class A hazards such that the maximum travel distance to an extinguisher was not greater than 75 feet. Specifically, the licensee failed to locate portable fire extinguishers in the CSR, which contained Class A hazards such as cable insulation. This issue has existed since initial plant startup.

Because the licensee committed to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement and reactor oversight process (ROP) discretion for this issue in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and Inspection Manual Chapter 0305. Specifically, this issue was identified and will be addressed during the licensee's transition to NFPA 805, was entered into the licensee's corrective action program, immediate corrective action and compensatory measures were taken, was not likely to have been previously identified by routine licensee efforts, was not willful, and it was not associated with a finding of high safety significance (i.e., Red).

04. Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team evaluated whether water-based manual firefighting activities could adversely affect equipment credited for SSD, inhibit access to alternate shutdown equipment, or adversely affect local operator manual actions (OMAs) required for SSD in the selected FAs/FZ. The team reviewed available documentation related to flooding analysis from fire protection activities, being sensitive to potential flooding through unsealed concrete floor cracks.

The team reviewed firefighting pre-plan strategies; fire brigade training procedures; fire damper locations; heating, ventilation and air conditioning (HVAC) drawings; and fire response procedures to verify that inter-area migration of ventilation of gaseous heat and smoke was addressed, and access to SSD equipment and OMAs would not be inhibited by smoke migration from the affected fire area to adjacent plant areas used to accomplish SSD.

b. Findings

No findings were identified.

.05 Alternative Shutdown Capability
a. Inspection Scope

Methodology

The team reviewed the licensee's FPP referenced in Unit 1 UFSAR Section 10.8, the FHA, SSAR, plant procedures, P&IDs, electrical drawings, and other supporting documents for postulated fires in FZ 0024B. The team performed the review to ensure that the required functions for post-fire SSD, and the corresponding equipment necessary to perform those functions, were included in the procedures. The team assessed whether transfer of control from the MCR to the remote shutdown panel (RSDP), as well as hot and cold shutdown from outside the MCR, could be successfully accomplished. The review included verification that shutdown from outside the MCR could be performed both with and without the availability of offsite power.

The team performed in-plant inspections to verify that the plant configuration was consistent with that described in the SSAR. The team focused their inspection activities on systems specified in the SSAR for reactivity control, reactor coolant makeup, and decay heat removal, as well as process monitoring instrumentation and necessary support systems.

Operational Implementation

The team reviewed shift attendance records to verify that personnel required to accomplish SSD, exclusive of those assigned as fire brigade members, were available. The team also verified that licensee personnel had adequate SSD procedures and were trained on implementation. The team reviewed training lesson plans, job performance measures, and simulator scenarios for licensed and non-licensed operators to verify that the training included the shutdown methodology of the SSAR and the SSD procedures required to be used for a fire in FZ 0024B.

The team reviewed and walked down selected applicable steps of AOP 34AB-X43-001-1, "Abnormal Operating Procedure, Fire Procedure" and remote shutdown procedure 31RS-OPS-001-1, "Shutdown From Outside Control Room," in order to assess technical and human factors adequacy of the procedures. The team also verified that operators could reasonably be expected to perform the procedure actions in order to maintain plant parameters within specified limits. The team reviewed periodic test procedures and test records of alternate shutdown transfer capability and instrumentation and control functions, to ensure that the tests were adequate to verify the functionality of alternative shutdown capability.

b. Findings

No findings were identified.

.06 Circuit Analyses

a. Inspection Scope

This segment was suspended for plants that have been in transition to NFPA 805 for less than 3 years because a more detailed review of cable routing and circuit analysis will be conducted as part of the FPP transition to NFPA 805.

b. Findings

No findings were identified.

.07 Communications

a. Inspection Scope

The team reviewed the communication capabilities required to support plant personnel in the performance of OMAs to achieve and maintain SSD, as credited in the Hatch FPP. The team performed plant walkdowns with the licensee's operations staff to assess the credited method of communications used to complete SSD actions as specified in post-fire SSD procedures for the selected FAs/FZ. The team assessed the operators' ability to communicate by observing the performance of radio checks from applicable control locations by licensee operations personnel. The team assessed if communications were possible, given the background noise from plant equipment, to determine if this would deter the operators' ability to implement the response strategy within the time required by the plant feasibility analysis. The team also verified that portable radio communications, sound powered phones and fixed emergency communication systems were available, operable, and adequate for the performance of designated activities to support fire event notification and fire brigade firefighting activities. The team reviewed preventive maintenance and surveillance test records and vendor manuals to verify that the communication equipment was being properly maintained and tested.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The team reviewed maintenance and design aspects of the fixed 8-hour battery pack emergency lighting units (ELUs) required by 10 CFR 50 Appendix R, Section III.J, and the Hatch approved FPP. The team performed plant walkdowns of the post-fire SSD procedures for the selected FAs/FZ to observe the placement and coverage area of the ELUs required to illuminate operator access and egress pathways, and any equipment requiring local operation and/or instrumentation monitoring for post-fire SSD. In some instances, operations personnel performed onsite tests of the ELUs to verify operation. The team also reviewed completed surveillances, system health reports, and maintenance tests to verify that adequate surveillance testing was in place. The manufacturer's information and vendor manuals for the fixed and portable 8-hour battery pack ELUs were reviewed to verify that the battery power supplies were rated with at least an 8-hour capacity, and that the ELUs were being stored and maintained in accordance with vendor guidance.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed the licensee's FHA and SSAR to verify that the licensee had evaluated the need for cold shutdown repairs. The team determined from the review that the licensee did not take credit for repairs to cold shutdown components in order to achieve cold shutdown.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

(1) Compensatory Measures for Degraded Fire Protection Components

The team reviewed the administrative controls for out-of-service, degraded and/or inoperable fire protection features (e.g. detection and suppression systems and passive fire barriers) to verify that short-term compensatory measures adequately compensated for the degraded function or feature until appropriate corrective actions could be taken.

(2) Operator Manual Actions as Compensatory Measures for Safe Shutdown

The team reviewed the SSAR, FHA, and applicable AOPs, to determine if the licensee's SSD methodology credited OMAs outside the MCR as compensatory measures for SSD, for postulated fires in Unit 1 FAs 1017 and 1020, and Unit 2 FA 2203.

b. Findings

No findings were identified.

.11 Review and Documentation of Fire Protection Program Changes

a. Inspection Scope

The team reviewed a sample of FPP changes made between August 2010 and December 2013 to assess the licensee's effectiveness of the FPP change process, and to determine if the changes to the FPP were in accordance with the fire protection license condition and had no adverse effect on the ability to achieve SSD. The team also reviewed additional FPP changes to support review of LER 2013-004-01.

b. Findings

Introduction: The NRC identified a non-compliance of Hatch Unit 2 Renewed OLC 2.C.(3)(a), "Fire Protection", for making a change to the FPP that adversely affected the licensee's ability to achieve and maintain safe shutdown. Specifically, the licensee removed the installed Unit 2 RSDP halon suppression system that was required to meet an approved exemption. The licensee failed to submit the FPP change to the NRC for review and approval prior to implementing the modification, which impacted the ability of the NRC to perform its regulatory oversight function.

Description: In an SER dated April 18, 1984, the NRC allowed an exemption request from 10 CFR 50, Appendix R, Section III.G.2 for the Unit 2 Reactor Building elevation 130'. In this SER,

the NRC documented that the licensee committed to several modifications, which included the installation of an automatic halon fire suppression system for the Unit 2 RSDP. The halon suppression system would limit the consequences of a fire internal to the RSDP. The NRC concluded that the existing fire protection measures, with the proposed modifications, would achieve a level of safety equivalent to that provided by 10 CFR 50, Appendix R, Section III.G.2. During a plant walkdown of FA 2203 to support the review of LER 2013-004, the team noted that the halon suppression system had been abandoned in place. Discussions with the licensee revealed that the system had been abandoned since 1999. Additionally, in 2006, the licensee initiated a design change (DCP 2009001901) to completely remove the halon system, along with its associated piping and support, from the Unit 2 RSDP.

The team noted that the licensee's FPP is based on the defense-in-depth concept, and that this approach includes promptly detecting and extinguishing fires that occur. The condition of not having the committed suppression system was a degradation of the defense-in-depth concept. Specifically, the lack of a suppression system would adversely affect the ability to control and promptly extinguish a fire. The licensee entered the deficiency into their CAP as CR 736483. An hourly fire watch was already in place for the affected FA, because of LER 2013-004.

Analysis: The team determined that the failure to obtain NRC approval prior to making a change to the FPP that was adverse to safe shutdown was a performance deficiency. This performance deficiency was determined to be more than minor because it was associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e. fire), and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee removed the halon suppression system for the RSDP, which degraded the ability to suppress a fire that originated in the panel.

The finding was screened in accordance with IMC 0609, "Significance Determination Process (SDP)," Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, which determined that an IMC 0609 Appendix F, "Fire Protection Significance Determination Process" review was required because the finding affected fixed fire protection systems. Using the "Fire Protection SDP Phase 1 Screening," the finding was assigned a category of "Fixed Fire Protection Systems."

The team used step 1.3 "Ability to Achieve Safe Shutdown," task 1.3.1 "Screen Fire Finding for Ability to Achieve Safe Shutdown," of IMC 0609, Appendix F, Attachment 1 to determine the finding to be of very low safety significance (i.e., Green) because the reactor would have been able to reach and maintain safe shutdown conditions. The reactor would be able to reach and maintain safe shutdown conditions because photoelectric detectors were installed inside the RSDP and linear heat detection was installed along the sides of the cable raceways located directly above the RSDP. The installed detectors would aid in preventing the growth and spread of a fire by allowing sufficient time for the fire brigade to intervene.

The team determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Additionally, the licensee's failure to submit the adverse FPP change to the NRC for review was screened under the traditional enforcement criteria, because it impacted the ability of the NRC to perform its regulatory oversight function. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation was characterized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance (Green).

Enforcement: Hatch Unit 2 Renewed OLC 2.C.(3)(a) states, in part, that the licensee may make changes to the fire protection program without prior Commission approval only if the changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. This license condition also states that the Hatch Fire Protection Program is referenced in the Updated Final Safety Analysis Report for the facility, as contained in the updated Fire Hazards Analysis and Fire Protection Program for the Edwin I. Hatch Nuclear Plant Units 1 and 2, which was originally submitted by letter from GPC to the Commission dated July 22, 1986.

Contrary to the above the licensee made a change to the FPP, without prior Commission approval, that adversely affected the ability to achieve and maintain SSD in the event of a fire. Specifically the licensee completed a 10 CFR 50.59 evaluation that erroneously concluded that the halon suppression system installed for the RSDP was not required to meet Appendix R requirements and, therefore, could be removed without prior Commission approval. The removal of the halon suppression system degraded the ability to suppress a fire and challenged the ability to achieve and maintain SSD in the event of a fire.

Because the licensee committed to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement and reactor oversight process (ROP) discretion for this issue in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)," and Inspection Manual Chapter 0305. Specifically, this issue was identified and will be addressed during the licensee's transition to NFPA 805, was entered into the licensee's corrective action program, immediate corrective action and compensatory measures were taken, was not likely to have been previously identified by routine licensee efforts, was not willful, and it was not associated with a finding of high safety significance (i.e., Red).

.12 Control of Combustibles and Ignition Sources

a. Inspection Scope

The team conducted tours of numerous plant areas that were important to reactor safety, including the selected FAs/FZ, to verify the licensee's implementation of FPP requirements as described in the FHA and administrative procedure 31GO-OPS-026-0, "Use, Control, and Storage of Flammable/Combustible Materials." For the selected FAs/FZ, the team evaluated generic fire protection training; fire event history; the potential for fires or explosions; the combustible fire load characteristics; and, the potential exposure fire severity to verify that adequate controls were in place to maintain general housekeeping consistent with the FPP, administrative procedures, and other FPP procedures. There were no hot work activities ongoing within the selected fire areas during the inspection and observation of this activity could not be performed.

b. Findings

No findings were identified.

.13 B.5.b Inspection Activities

a. Inspection Scope

The team reviewed, on a sample basis, the licensee's mitigation measures for reactor pressure vessel depressurization and injection for large fires and explosions to verify that the measures

were feasible, personnel were trained to implement the measures, and equipment was properly staged and maintained. The team reviewed surveillance testing records to verify that required equipment was adequately maintained. Through discussions with plant staff, review of documentation, and plant walkdowns, the team verified the engineering basis to establish reasonable assurance that the makeup capability could be provided using the specified equipment and water sources. The team reviewed the licensee's capability to provide a reliable and available water source and the ability to provide the minimum fuel supply. The team reviewed inventory records and performed a walkdown of the storage and staging areas for the B.5.b equipment to verify that equipment identified for use in the procedures was available and maintained. The team conducted an independent audit and inventory of required equipment and a visual inspection of the dedicated credited power and water source. The team reviewed training records to verify that operations and security personnel training/familiarity with the strategy objectives and implementing guidelines were accomplished according to the established training procedures.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

a. Inspection Scope

The team reviewed recent independent licensee audits, self-assessments, and system/program health report for thoroughness, completeness and conformance to FPP requirements. The team also reviewed CAP documents, including completed corrective actions documented in selected CRs, and operating experience program documents, to ascertain whether industry identified fire protection issues (actual or potential) affecting HNP were appropriately entered into the CAP for resolution. Items included in the operating experience program effectiveness review were NRC Information Notices, Regulatory Issue Summaries, industry or vendor generated reports of defects and non-compliances submitted pursuant to 10 CFR Part 21, and vendor information letters. The team evaluated the effectiveness of the corrective actions for the identified issues. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA3 Follow-up of Events

(Discussed) Licensee Event Report (LER) 50-366/2013-004-01, Postulated Inter-cable Fault Vulnerability for RHR Shutdown Cooling Isolation Valves During A Postulated Fire Event Results in Unanalyzed Condition

The licensee described a condition in Revision 0 of the subject LER (dated October 8, 2013) where, during a postulated fire scenario for Unit 2 FA 2203F, an inter-cable hot short could occur on the control cables for two RHR shutdown cooling isolation valves, causing the valves to spuriously open while at rated power. The valves spuriously opening at rated power could result in an inter-system loss of coolant accident. The vulnerability was identified in August

2013 during circuit analysis that considered inter-cable shorts as a plausible vector in the SSA for some high/low pressure interface components. Originally, Hatch's FHA and SSAR limited the circuit analysis to intra-cable hot shorts (conductors within the cable), but did not consider inter-cable hot shorts (conductors within co-located cables in the same tray). Additionally, the FHA and the SSAR stated, in part, that hot shorts between conductors of different cables need not be postulated.

Upon discovering this condition, the licensee took immediate corrective actions that included establishing hourly fire watches, and de-energizing both valves in the closed position to remove the vulnerability. The licensee concluded that the vulnerability did not exist for the corresponding Unit 1 set of valves. Revision 1 of the LER (dated November 14, 2013) stated, upon further evaluation, the cause of the event was attributed to the ineffective monitoring and follow-up of regulatory activities/guidance (Regulatory Guide 1.189 and Nuclear Energy Institute 00-01) involving inter-cable hot shorts in identifying the vulnerability associated with the RHR isolation valves. This LER remains open pending further NRC review.

4OA6 Meetings, Including Exit

On December 6, 2013, the lead inspector presented the preliminary inspection results to Mr. David Vineyard and other members of the licensee's staff, who acknowledged the results. Following completion of additional reviews in the Region II office, a conference call was held with Mr. Steve Tipps on January 16, 2014, to provide an update on changes to the preliminary inspection findings. The licensee acknowledged the findings. Proprietary information is not included in this inspection report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

S. Beverly, Licensing Engineer
P. Burns, Fire Protection Engineer, SNC Corporate
M. Dean, Maintenance
D. Edenfield, PRA Engineer
J. Gardner, Fire Marshall
J. Lattner, Principal Fire Protection Engineer, SNC Corporate
J. Moser, Fire Brigade Instructor
D. Patel, Component Supervisor
M. Sykes, Fire Protection Engineer, SNC Corporate
S. Tipps, Licensing Supervisor
D. Vineyard, Site Vice President
J. Whitt, Fire Protection Engineer, SNC Corporate
J. Yurkosky, Fire Protection Engineer

NRC Personnel

D. Hardage, Resident Inspector
E. Morris, Senior Resident Inspector
S. Shaeffer, Chief, Engineering Branch 2, DRS, Region II

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Discussed

05000366/2013-004-01	LER	Postulated Inter-cable Fault Vulnerability for RHR Shutdown Cooling Isolation Valves During A Postulated Fire Event Results in Unanalyzed Condition (Section 4OA3)
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LIST OF FIRE BARRIER FEATURES INSPECTED
(Refer Report Section 1RO5.02- Passive Fire Barriers)

<u>Fire Barriers Floors/Walls/Ceiling Identification</u>	<u>Description</u>
1Z43-H007D	FA 1017 to FZ 0014N
1Z43-H004D	FA 1017 to FA 1104
1Z43-H810D	FA 1017 to FA 1020
1Z43-H010D	FA 1020 to FA 1104
1Z43-H012D	FA 1020 to FZ 0014N
1Z43-H063F	FZ 0024B to FA 0025
1Z43-H062F	FZ 0024B to FA 0025
1Z43-H064F	FZ 0024B to FA 0025
1X43-H522D	Fire Pump House
1X43-H521D	Fire Pump House
<u>Fire Door Identification</u>	<u>Description</u>
1L48C31	FA 1017 to FZ 0014N
1L48C29	FA 1020 to FZ 0014N
1L48D214	Fire Pump House
1L48D215	Fire Pump House
<u>Fire Damper Identification</u>	<u>Description</u>
1Z41-FD-F071	FZ 0024B to FA 0025
1Z41-FD-F064	FA 1017 to FA 1020

LIST OF DOCUMENTS REVIEWED

Procedures

DI-FPX-02-0693, Fire Fighting Equipment Inspection, Rev. 11
34IT-EOP-001-0, EOP Equipment Checks, Rev. 16
31RS-OPS-001-1, Shutdown From Outside Control Room, Rev. 5.21
31RS-OPS-001-2, Shutdown From Outside Control Room, Rev. 6.20
31EO-TSG-001-0, Emergency Operating Procedure, Technical Support Guidelines, Version 11.0
31RS-OPS-001-1, Remote Shutdown Procedure, Shutdown From Outside Control Room, Version 5.21
34AB-C71-001-1, Abnormal Operating Procedure, Scram Procedure, Version 12.5
34AB-R22-001-1, Abnormal Operating Procedure, Loss of DC Buses, Version 3.1
34AB-X43-001-1, Abnormal Operating Procedure, Fire Procedure, Version 12.2
34AB-X43-001-2, Abnormal Operating Procedure, Fire Procedure, Version 13.1
34GO-OPS-014-1, General Operating Procedure, Fast Reactor Shutdown, Version 14.0
34SO-R23-001-1, System Operating Procedure, 600V/480V AC System, Version 10.4
34IT-EOP-001-0, EOP Equipment Checks, Version 16.0
34IT-EOP-002-0, Extensive Damage Mitigation Guideline (EDMG) Equipment Quarterly Test, Version 4.0
42FP-FPX-011-0, Cable Tray/Conduit Fire Protection Material Installation and Repair, Rev. 7
34SV-E11-002-2, RHR Valve Operability, Rev. 22.7
34AB-E11-001-2, Loss of Shutdown Cooling, Rev. 6.12
31GO-OPS-007-0, Shift Logs and Relief of Personnel, Version 14.1
31GO-OPS-026-0, Use, Control, and Storage of Flammable/Combustible Materials, Version 1.0
34-AB-X43-002-0, Fire Protection System Failures, Version 2.1
34GO-OPS-030-1, Daily Inside Rounds, Version 33.1
34GO-OPS-031-1, OPS-1240 Outside Rounds Tech Spec/FHA Data, Version 18
34GO-OPS-031-1, OPS-1241, Inside Rounds Tech Spec/FHA Data, Version 13
34-SO-X43-001-1, Fire Pumps Operating Procedure, Version 5.1
42SV-SUV-007-0, CO2 Fire Suppression Equipment Inspection, Version 1.4
52SV-FPX-010-0, Low Pressure CO2 System Surveillance, Version 3
NMP-ES-035, Fire Protection Program Version 4.1
NMP-ES-035-009, Quarterly Fire Safety Inspection, Version 2.0
A27001, Electrical Separation Criteria and Raceway and Cable Numbering System, Rev. 20
FPC 2009001901, Safe Shutdown Fire Protection Checklist, Rev. 1
34SV-C82-003-2, Remote Shutdown Panel Function Checks, Rev, 3.5

Calculations, Evaluations, & Specifications

DCR 78-78, ABN 82-0377, Rev March 9, 1984
DOEJ-HR210289601-M001, Evaluation of the Impact of Fire Sprinkler Actuation in the Hatch Cable Spreading Rooms, Version 1
DOEJ-HRSNC320254-M001, Evaluation of DOW Corning 561 Transformer Oil in Plant Hatch Switchgear Rooms, Version 2.0
DOEJSNC332919-01, Evaluation of Ionization Smoke Detector Effectiveness in Transformer Room 2019 at Plant Hatch, Version 1.1
FAS 2-13-068, Loops 4 and 5 Acceptance Criteria not met.
LDCR 2011-067, Changes to the Fire Hazard Analysis, Version 1.0
S52429_2, Fire Rated Penetration Seal Qualification Data, April 1990
S52439, Fire Rated Penetration Seal Qualification Data-SWRI Project No. 01-8821-028B, September 1986
S55124, BISCO Fire Test 748-134 – Utilizing BISCO SF-20 & BISCO SE-FOAM, May 14, 1984

SMNH 00-011, Ensure Adequate Pressure is Available at Manual Hose Stations, Rev 0
 SMNH 03-002, Circulating Water System Flooding Analysis, Rev 0
 SMNH 93-058, Fire Detection Design Criteria, Rev 0
 SMNH 94-009, Control Building Floor Drainage Capacity of Transformer Fluids, Rev 0
 SMNH 94-060, Fire Protection Data System (FPDS), Rev 19
 SMNH 98-023, Fire Protection Pen Seal Deviation Analysis, Rev 1
 SX11992, FP-LP CO2 Flow Calculation Cable Spreading Room
 TE 672216, IRT for U2 Fire Protection Flow Test Unsat
 VM-FP-87-006, Unit 1 Cable Spread Room, Rev. 0
 VM-FP-87-007, Unit 2 Cable Spread Room, Rev. 0

Work Orders

SNC 416556, Replace Degraded Appendix R Emergency Light, 05/11/2013
 SNC 461684, Replace Emergency Light Battery, 02/06/2013
 SNC 461687, Replace Emergency Light Battery and Charging Assembly, 02/07/2013
 SNC 484846, Replace Degraded Battery, 05/11/2013
 SNC 487836, Appendix R Emergency Light Low End-Point Voltage After Test, 06/12/2013
 SNC 447487, Fire Protection Instrument Surveillance, 6/21/13
 SNC 447487, Fire Protection Instrument Surveillance, 6/8/13
 SNC 420310, Remote Shutdown Panel Function Checks Section 7.1 and 7.5, 7/5/13
 SNC 420310, Remote Shutdown Panel Function Checks Section 7.2 and 7.3, 7/14/13
 SNC 420310, Remote Shutdown Panel Function Checks Section 7.4, 7/22/13
 SNC 420310, Remote Shutdown Panel Function Checks Section Attachment 1, 7/9/13
 SNC 309412, Perform Quarterly Fire Safety Inspection per NMP-ES-035-009-F02, 3/21/2013
 SNC 309413, Perform Quarterly Fire Safety Inspection per NMP-ES-035-009-F02, 6/10/2013

Drawings

H-13357, Single Line Diagram 4160 V Bus 1G, R22-S007, Rev. 13
 H-23357, Single Line Diagram 4160 V Bus 2E & 2F, Rev. 25
 H-13350, Master Single Line Diagram, Rev. 23
 H-13356, Single Line Diagram 4160 V Bus 1E, R22-S005 & Bus 1F, R22-S006, Rev. 25
 H-27979, Remote Shutdown System 2C82 Elementary Diagram Sheet 10 of 11, Rev. 14
 H-27462, Nuclear Steam Supply Shutoff System 2A71 Elementary Diagram Sheet 13 of 20,
 Rev. 22
 H-27450, Nuclear Steam Supply Shutoff System 2A71- Sheet 7, Schemes 14, 15, 17 & 21,
 Rev. 13
 H-11900, Equipment Layout Drawing Fire Detection/Suppression Multiplex System 2T43
 Reactor Building 130'-0", Rev. 1
 H-27004, Smoke Detection Reactor Building Elevation 130'-0", Rev. 1
 H-26015, R.H.R. System P&ID Sheet 2, Rev. 59
 H-26014, R.H.R. System P&ID Sheet 1, Rev. 64
 H-11884, Equipment Layout Drawing Fire Detection/Suppression Multiplex System 1Z43
 Reactor Building 147'-0", Rev. 2
 H-26098, General Arrangement Reactor Building Elevation 130'-0" Radwaste Building Elevation
 132'-4", Rev. 19
 H-27971, Remote Shutdown System 2C82 Elementary Diagram Sheet 2 of 11, Rev. 15
 H-23278, Fire Protection- Barrier Material Installation Reactor Bldg. West EL. 130'-0", Rev 5
 H-24623, 10CFR 50 Appendix R Fire Zones and Safe Shutdown Raceway Plan Reactor
 Building North Elevation 130'-0", Rev. 13

H-24611, 10CFR 50 Appendix R Fire Zones and Safe Shutdown Raceway Plan Reactor Building North Elevation 147'-0" Column TA-TH & T11-T13, Rev. 8

H-27991, Nuclear Steam Supply Shutoff System 2A71 Elementary Diagram Sheet 18, Rev. 27

H-27462, Nuclear Steam Supply Shutoff System 2A71 Elementary Diagram Sheet 13 of 20, Rev. 22

H-27977, Remote Shutdown System 2C82 Elementary Diagram Sheet 8 of 11, Rev. 10

H-24096, Residual Heat Removal System 2E11 Valves and Misc Devices External Connection Diagram. Rev. 6

B-19631, Sheet 122, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 0.0

B-19631, Sheet 147, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 0.0

B-19631, Sheet 166, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 4.0

B-19631, Sheet 171, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 3.0

B-19631, Sheet 172, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 4.0

B-19631, Sheet 174, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 1.0

B-19631, Sheet 178, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 1.0

B-19631, Sheet 183, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 3.0

B-19631, Sheet 272, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 5.0

B-19631, Sheet 319, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 3.0

B-19631, Sheet 80, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 1.0

B-19631, Sheet 81, Edwin I. Hatch Nuclear Plant – Unit No. 1 Penetration Seals Type, Number and As-Built Location, Version 1.0

H-11033, Fire Protection – P&ID Pumphouse Layout, Version 50

H-11323, Fire Protection Piping P&ID Cable Spreading Room, Rev 12

H-11664, Units 1&2 Isometric Supervisory Air to Cable Spread FP CONT STA, Rev. 0

H-11816, Fire Hazards Analysis Control Building El. 147'-0" Revision 2

H11866, Fire Detection/Suppression Multiplex General Building Site Plan, Rev. 1

H-11882, Fire Detection/Suppression Multiplex SYS. 1Z43 Control Bldg. EL. 130'-0", Rev. 2

H-11884, Fire Detection/Suppression Multiplex SYS. 1Z43 Control Bldg. EL. 147'-0", Rev. 2

H-12600, Architectural Fire Protection Pump House Floor Plan and South & West Elevations, Rev. 4

H-12652, Architectural Fire Door Schedule and Details, Revision 4

H-16041, Control Building Ventilation Process Flow Diagram, Rev. 13

H-16045, Control Building – Computer Room Water Analysis Room A/C Process Flow Diagram, Rev. 11

H16055, Control Bldg. HVAC System Plan at 147;-0', Rev. 15

H40432, Fire Protection Piping Cable Spreading RM Sprinkler System – West, Rev 1

H40433, Fire Protection Piping Cable Spreading RM Sprinkler System– East, Rev 1

H40434, Fire Protection Piping Cable Spreading RM Sprinkler System– East, Rev 1

H40435, Fire Protection Piping Cable Spreading RM Sprinkler System – West, Rev 1

H41508, Turbine & Control Building – Fire Protection Piping CO2 System, Rev. 8
 SX11786, FP-LP CO2 Diagram Turbine and Control Building, Rev. F

Completed Surveillance Procedures, Test Records

52IT-MEL-001-0, Emergency Lighting Inspection and Test, Discharge Test, 08/28/2012
 52IT-MEL-001-0, Emergency Lighting Inspection and Test, Discharge Test, 12/23/2012
 52IT-MEL-001-0, Emergency Lighting Inspection and Test, Discharge Test, 02/06/2013
 52IT-MEL-001-0, Emergency Lighting Inspection and Test, Discharge Test, 06/14/2013
 52IT-MEL-001-0, Emergency Lighting Inspection and Test, Operational Checks, 07/16/2013
 52IT-MEL-001-0, Emergency Warning Lights Test, 08/22/2013
 42SV-FPX-003-0, Emergency Lights Group 01 Discharge Test, 01/18/2013
 42SV-FPX-003-0, Emergency Lights Group 02 Discharge Test, 01/31/2013
 42SV-FPX-003-0, Emergency Lights Group 03 Discharge Test, 03/05/2013
 42SV-FPX-003-0, Emergency Lights Group 04 Discharge Test, 04/05/2013
 42SV-FPX-003-0, Emergency Lights Group 05 Discharge Test, 05/08/2013
 42SV-FPX-003-0, Emergency Lights Group 06 Discharge Test, 06/20/2013
 42SV-FPX-003-0, Emergency Lights Group 07 Discharge Test, 05/03/2013
 42SV-FPX-003-0, Emergency Lights Group 08 Discharge Test, 08/02/2013
 42SV-FPX-003-0, Emergency Lights Group 09 Discharge Test, 09/13/2012
 42SV-FPX-003-0, Emergency Lights Group 10 Discharge Test, 08/09/2013
 42SV-FPX-003-0, Emergency Lights Group 11 Discharge Test, 11/06/2012
 42SV-FPX-003-0, Emergency Lights Group 12 Discharge Test, 12/10/2012
 34IT-EOP-001-0, EOP Equipment Checks, July 4, 2013
 34IT-EOP-001-0, EOP Equipment Checks, August 28, 2013
 34IT-EOP-001-0, EOP Equipment Checks, September 11, 2013
 34IT-EOP-002-0, Extensive Damage Mitigation Guideline (EDMG) Equipment Quarterly Test,
 July 18, 2013
 34IT-EOP-002-0, Extensive Damage Mitigation Guideline (EDMG) Equipment Quarterly Test,
 September 11, 2013
 34SV-X43-001-1, Fire Pump Test, Version 1.19
 42SV-FPX-008-0, Fire Protection Water Suppression System Flow Test, Version 0.6
 42SV-FPX-013-0, Inspection of Rolling Fire Doors in the Fire Pump House, Version 2.5
 42SV-FPX-015-0, System Flush – Fire Protection Water, Version 1.5
 42SV-FPX-017-1, Surveillance of Water Fire Suppression Systems/Non-Appendix B,
 Version 7.10
 42SV-FPX-018-1, Fire Barrier 18 Month Surveillance, Version 2.6
 42SV-FPX-019-1, Penetration Seal Surveillance, Version 3.6
 42SV-FPX-021-0, Surveillance of Swinging Fire Doors, Version 1.15
 42SV-FPX-032-0, Automatic Sliding Fire Door Surveillance, Version 3.7
 42SV-FPX-035-1, Fire Protection Valve Cycling Surveillance, Version 5.2
 42SV-FPX-035-2, Fire Protection Valve Cycling Surveillance, Version 3.0
 42SV-FPX-036-0, Annual Fire Pump Capacity Test, Version 3.2
 42SV-FPX-037-0, Fire Detection Instrumentation Surveillance, Ver 6.2
 52SV-FPX-010-0, Low Pressure CO2 System Surveillance, Version 3
 52SV-R42-001-1, Battery Pilot Cell Data, Version 19.0
 64CH-SAM-002-0, Diesel Fuel, Version 17
 DI-FPX-02-0693, Fire Fighting Equipment Inspection Inventory, Version 23
 DI-OPS-72-1204, Fire Brigade Gear Restoration, Version 13.0
 C82-RSDP-LP-05201-04, Remote Shutdown Panel, dated 6/29/11
 SM-FP-87-003, Unit 2 Reactor Building Elevation 130 East Water Curtain, Rev. 1
 SM-FP-86-010, Unit 2 Reactor Building Elevation 130 NW Water Curtain, Rev. 0

Plant Modifications and Engineering Changes

LDCR 06-83, Remote Shutdown Panel Halon System Removal, 12/7/06
 LDCR 99-181, Removal of Halon System, Rev. 0
 LDCR 2011-24, Plant Hatch Fire Hazards Analysis and Technical Requirements Manual,
 Version 1.0
 LDCR 2011-67, Changes to the Fire Hazard Analysis, Version1.0

Fire Fighting Preplan Strategies

A-43965, Cable Spreading Room Control Bldg. Elevation 147'-0", Rev. 2
 A-43965, E DC Switchgear Room 1B Control Bldg. Elevation 130'-0", Ver. 5.0
 A-43965, Pre-Fire Plan Powerblock Areas Methodology, Rev. 0

Applicable Codes & Standards

NFPA 10, Portable Fire Extinguishers, 1975 Edition
 NFPA 12, Carbon Dioxide Extinguishing Systems, 1973 Edition
 NFPA 13, Standard for the Installation of Sprinkler Systems, 1976 Edition
 NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 1974 Edition
 NFPA 20, Standard for the Installation of Centrifugal Fire Pumps, 1973 Edition
 NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances
 NFPA 251, Fire Tests, Building Construction and Materials, 1975 Edition
 NFPA 30, Flammable Combustible Liquids Code, 1973 Edition
 NFPA 72D, Standard for the Installation, Maintenance, and Use of Proprietary Protection
 NFPA 72E, Standard on Automatic Fire Detectors, 1974 Edition
 NFPA 80, Standard on Fire Doors and Windows, 1975 Edition
 Signaling Systems, 1975 Edition

Technical Manuals, Vendor Information and Fire Tests

BIRNS Emergency Lighting Fixture Instruction Manual – Model 4710, 11/23/2011
 Information About 561® Transformer Fluid

Audits & Self-Assessments

2013 Triennial Fire Protection Inspection Readiness Focused Area Self Assessment, January
 28 – 29 March, 2013

License Basis Documents

Appendix A to Branch Technical Position (BTP) Auxiliary and Power Conversion Systems
 Branch (APCSB) 9.5-1, Guidelines for Fire Protection for Nuclear Power Plants, 08/23/76
 E. I. Hatch UFSAR Section 9.5, Rev. 28
 E. I. Hatch Nuclear Plant Fire Hazards Analysis and Fire Protection Program, Rev. 31
 E. I. Hatch Nuclear Plant, Unit No. 1, Renewed Facility Operating License DPR-57
 Evaluation of the Hatch Nuclear Plant Fire Protection Program, dated 10/76
 E. I. Hatch Nuclear Plant Units 1 and 2 Safe Shutdown Analysis Report Rev. 32
 SNC-1, Southern Nuclear Operating Company, Inc. Quality Assurance Topical Report,
 Version 12.0
 NRC SER dated April 18, 1984

Other Documents

Edwin I. Hatch Nuclear Plant In Building Enhancement Project, 06/26/2006
 Letter dated November 16, 1983 regarding Clarification of Requests for Exemptions from
 10 CFR 50.48 and Appendix R

Letter dated November 30, 1983 regarding Detailed Clarification of Requests for Exemption from 10 CFR 50.48 and 10 CFR Appendix R
 Letter dated April 28, 1983 regarding Clarification of Requests for Exemptions from 10 CFR 50.48 and Appendix R
 Letter dated December 20, 1983 regarding Revision to Requests for Exemption from 10 CFR 50.48 and 10 CFR 50 Appendix R
 Letter dated September 23, 1986, regarding Additional Information Related to Appendix R Exemptions
 NRC SER dated April 18, 1984
 SNC 515132, Safe shutdown Evaluations for Inter-Cable Hot Shorts, Rev. 001
 Fire Action Sheet 1-13-92, dated 8/24/13
 Fire Action Sheet 1-13-094, dated 8/24/13
 Fire Action Sheet 1-13-093, dated 8/24/13
 Fire Action Sheet 2-13-083, dated 8/24/13
 Fire Action Sheet 2-13-084, dated 8/24/13
 Fire Action Sheet 2-13-085, dated 8/24/13
 2013 Triennial Fire Protection Inspection Readiness, 04/26/2013
 Drill 43965-30A-2008, Unit 1 West DC Switchgear Room 1A
 Nuclear Oversight Audit of Fire Protection Fleet-FP-2012, September 10, 2012
 Quarterly Engineering Program Health Report, Hatch Fire Protection Program, 2013-1
 S80393, Instructions for Installing Mesker – D&H “Pyromatic” Automatic Sliding Door Closer S-FP-PP-10800-03, Fire Fight Strategy Tactic
 System Health Report, H | Unit 1 | L43 - Fire Systems (Including T43,U43,V43,W43,X43,Y43, and Z43), Q1-2013
 System Health Report, H | Unit 1 | L43 - Fire Systems (Including T43,U43,V43,W43,X43,Y43, and Z43), Q1-2012
 System Health Report, H | Unit 1 | L43 - Fire Systems (Including T43,U43,V43,W43,X43,Y43, and Z43), Q2-2012
 System Health Report, H | Unit 1 | L43 - Fire Systems (Including T43,U43,V43,W43,X43,Y43, and Z43), Q3-2012
 System Health Report, H | Unit 1 | L43 - Fire Systems (Including T43,U43,V43,W43,X43,Y43, and Z43), Q4-2012

List of Condition Reports (CRs) Reviewed During Inspection

104270, Communications Recommendation from Hatch 2010 TFPI, 10/14/2010
 516300, Appendix R ELU Failed Discharge Test, 09/12/2012
 557274, Appendix R Emergency Light Degraded, 12/06/2012
 581711, Appendix R ELU Failed Discharge Test, 01/30/2013
 581744, Appendix R Light INOP, 01/30/2013
 600526, Appendix R Light INOP, 03/04/2013
 600531, Appendix R Light INOP, 03/04/2013
 600533, Appendix R Light INOP, 03/04/2013
 632813, Appendix R Light Battery Corrosion and Low End-Point Voltage, 05/02/2013
 632823, Appendix R Light INOP, 05/02/2013
 636344, Appendix R Emergency Light Low End-Point Voltage After Test, 05/08/2013
 695035, Sound Powered Handsets/Headsets are Degraded and Not Operational, 08/28/2013
 610142, Fire Protection piping not painted red
 610145, Fire Protection system pressure gauge is reading 203 PSI
 608530, Bad pressure gauge
 609466, Housekeeping issue at Fire Brigade Hose stations
 608535, Packing leak on FP valve

610054, Fire Protection pressure gauge defective
 596597, There is a flammable liquids storage cabinet that is not labeled as flammable
 608526, Oil barrels stored with no lid and no posted TCP
 652101, High pressure gauges
 650771, Hanging fixture for fire extinguisher needs to be replaced
 652103, The metal plates on 1Y43F308A are coming loose
 652093, Pre-Fire Plan needs to be corrected
 652017, While performing quarterly fire protection inspection, control station for sprinkler system 1V43132W02 was not readily accessible. This is a non-FHA appendix B sprinkler system
 652099, The Pre-Fire Plan A43965 sheet BOB contains compressed oxygen tanks which are missing along with the proper storage
 652101, High pressure gauges reading high
 652085, The Pre-Fire Plan A43965 sheet 140B shows a hose station down a short hallway.
 2003110070, NRC Non-Cited violation (NCV) 50-366/03-06-04
 2003110072, NRC Non-Cited violation (NCV) 50-366/03-06-05
 2003800166, Review Fire Procedure 34AB-X43-001-2 steps 4.15.2 and 4.15.4 to determine if they meet the requirements of Appendix R
 2006100755, Compliance with 10 CFR 50 Appendix R regarding use of OMAs
 CAR 207762, Apparent Cause Determination Report, dated 10/14/2013

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

735297, Damaged Penetration Seal Found in Fire Pump House
 736483, FHA was not properly updated when Halon was removed from the Unit 2 Remote Shutdown Panel
 736749, Non-conforming penetration seal
 736751, Repair wall adjacent to penetration seal
 736771, CO2 concentration not sufficient for fire suppression for computer room
 736857, ABN for 1Z43H1087C needed
 736577, Procedure revision required
 736667, 2013 NRC TFPI Question
 736456, 2013 NRC TFPI Inspector question regarding BIRNS emergency lights & batteries
 740404, 2013 NRC NFPI Question
 740396, 2013 NRC TFPI Question
 741074, 2013 NRC TFPI Observation
 743168, NRC Fire Protection Inspection Observation
 743172, NRC Fire Protection Inspection Observation
 741521, 2013 NRC TFPI Potential Finding

LIST OF ACRONYMS AND ABBREVIATIONS

ADM	Administrative Procedure
APCSB	Auxiliary and Power Conversion Systems Branch
B.5.b	Refers to a section of Interim Compensatory Measures Order, EA-02-026
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DID	Defense-in-Depth
ELU	Emergency Lighting Unit
FA	Fire Area
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
HVAC	Heating, Ventilation and Air Conditioning
IMC	Inspection Manual Chapter
LER	Licensee Event Report
MCR	Main Control Room
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
NUREG	An explanatory document published by the NRC
OLC	Operating License Condition
OMA	Operator Manual Action
P&ID	Piping and Instrumentation Drawing
RIS	Regulatory Issue Summary
ROP	Reactor Oversight Process
SDP	Significance Determination Process
SER	Safety Evaluation Report
SFP	Spent Fuel Pool
SSAR	Safe Shutdown Analysis Report
SSD	Safe Shutdown
TFPI	Triennial Fire Protection Inspection
UFSAR	Updated Final Safety Evaluation Report