

August 30, 2005

Mr. Gene St. Pierre
Site Vice President
c/o James M. Peschel
FPL Energy Seabrook, LLC
Seabrook Station
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK NUCLEAR POWER STATION - NRC TRIENNIAL FIRE
PROTECTION INSPECTION REPORT 05000443/2005008

Dear Mr. St. Pierre:

On July 29, 2005, the NRC completed a triennial fire protection team inspection at the Seabrook Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed at an exit meeting on July 29, 2005, with Mr. J. Dent and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's regulations and with the conditions of your license. The purpose of the inspection was to evaluate your post-fire safe shutdown capability and fire protection program. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, there was one NRC-identified finding of very low safety significance (Green), which did not involve a violation of NRC requirements.

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/

John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

Docket No. 50-443
License No. NPF-86

Enclosure: Inspection Report 05000443/2005008

Mr. Gene St. Pierre

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cc w/encl:

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Enclosure

REGION I

Docket No. 05000443

License No. NPF-86

Report No. 05000443/2005008

Licensee: FPL Energy Seabrook, LLC

Facility: Seabrook Nuclear Power Station

Location: P.O. Box 300
Seabrook, NH 03874

Dates: July 11-29, 2005

Inspectors: L. Scholl, Senior Reactor Inspector, DRS
L. Cheung, Senior Reactor Inspector, DRS
P. Finney, Reactor Inspector, DRS

Approved by: John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000443/2005008; 07/11/2005 - 07/29/2005, Seabrook Nuclear Power Station; Triennial Fire Protection Team Inspection.

The report covered a two-week triennial fire protection team inspection by three Region I specialist inspectors. One Green finding was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified Findings

Cornerstone: Mitigating Systems

- Green. The team identified a finding regarding the adequacy of the licensee's post-fire safe shutdown analysis. Specifically, the analysis was found to be incomplete in that it did not specify the time available for the implementation of safe shutdown procedure actions necessary to restore mitigating systems to operation following their loss due to a fire. These actions include timely restoration of reactor coolant system makeup, reactor coolant pump seal cooling and feedwater flow to the steam generators to ensure safe shutdown performance goals would be met during a post-fire safe shutdown. Additionally, time lines or validations had not been performed to establish the time necessary to perform time critical portions of the safe shutdown procedures.

The finding is more than minor because it is associated with the Mitigating Systems Cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. Specifically, the safe shutdown analysis did not ensure the availability and capability of credited safe shutdown systems was sufficient to ensure post-fire performance goals would be met. The finding was found to represent a low degradation, and as such was of very low safety significance in accordance with the Fire Protection Significance Determination Process (NRC Inspection Manual Chapter 609, Appendix F). Specifically, timed walkdowns of procedures performed during the inspection indicated that, while plant parameters may not always be maintained within the safe shutdown goals, they would not deviate by an amount that would place the plant in an unrecoverable condition. The walkdown results were evaluated against estimated times available from related accident analyses, probabilistic risk assessment (PRA) studies and information from plants of similar designs. (Section 1R05.01)

B. Licensee-Identified Violations

None

REPORT DETAILS

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, "Fire Protection." The objective of the inspection was to assess whether Florida Power and Light has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Seabrook nuclear power plant. Four plant areas that included the following fire areas (FAs), were selected for detailed review based on risk insights from the Seabrook Individual Plant Examination (IPE)/Individual Plant Examination of External Events (IPEEE):

- C FA CB-F-1B-A
- C FA CB-F-2A-A
- C FA's ET-F-1C-A & ET-F-1D-A
- C FA's DG-F-1B-A , DG-F-2B-A, DG-F-3F-A, DG-F-3B-Z

The inspection team evaluated the licensee's fire protection program (FPP) against applicable requirements which include plant Technical Specifications, Operating License Condition 2.F, NRC Safety Evaluations, 10 CFR 50.48 and 10 CFR 50 Appendix R. The team also reviewed related documents that include the Updated Final Safety Analysis Report Section 9.5.1, the Fire Hazards Analysis and the Post-Fire Safe Shutdown Analysis.

Specific documents reviewed by the team are listed in the attachment.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection

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

a. Inspection Scope

Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings (P&IDs), electrical drawings, the UFSAR and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that rely on shutdown from outside the control room. This review included verification that shutdown from outside the control room could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in

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the safe shutdown and fire hazards analyses. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor decay heat removal, process monitoring instrumentation and support systems functions. The team verified that the systems and components credited for use during this shutdown method would remain free from fire damage. The team verified that the transfer of control from the control room to the alternative shutdown location(s) would not be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

Similarly, for fire areas that utilize shutdown from the control room, the team also verified that the shutdown methodology properly identified the components and systems necessary to achieve and maintain safe shutdown conditions.

Operational Implementation

The team verified that the training program for licensed and non-licensed operators included alternative shutdown capability. The team also verified that personnel required for safe shutdown using the normal or alternative shutdown systems and procedures are trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions which were verified included restoration of AC electrical power, restoration of reactor coolant pump seal cooling, establishing reactor coolant makeup using the charging systems and establishing decay heat removal.

Specific procedures reviewed for alternative shutdown, including shutdown from outside the control room included the following:

- C OS1200.00, Response to Fire or Fire Alarm Actuation, Rev. 11, Chg. 02
- C OS1200.00A, Fire Hazards Analysis For Affected Area/Zone - Appendix A. Rev. 09
- C OS1200.01, Safe Shutdown and Cooldown From The Main Control Room, Rev. 09, Chg. 01
- C OS1200.02, Safe Shutdown and Cooldown From The Remote Safe Shutdown Facilities, Rev. 09, Chg. 01
- C OS1200.02A, Safe Shutdown and Cooldown From The Remote Safe Shutdown Facilities - Train A, Rev. 09
- C OS1200.02B, Safe Shutdown and Cooldown From The Remote Safe Shutdown Facilities - Train B, Rev. 09

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant

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procedures in the time necessary to support the safe shutdown method for each fire area. The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests are adequate to ensure the functionality of the alternative shutdown capability.

b. Findings

Introduction. The inspectors identified a Green finding regarding the adequacy of the licensee's post-fire safe shutdown analysis.

Description. The post-fire safe shutdown analysis was found to be inadequate in that it did not document the time available for the implementation of safe shutdown procedure actions necessary to restore mitigating systems to operation following their loss due to a fire. These actions include timely restoration of reactor coolant system makeup, reactor coolant pump seal cooling and feedwater flow to the steam generators to ensure safe shutdown performance goals would be met during a post-fire safe shutdown. Additionally, SSD procedure time lines had not been developed nor had procedure time validations been performed to establish the time necessary to perform time critical portions of the safe shutdown procedures.

Analysis. Section 2.4 of Branch Technical Position (BTP) SPLB 9.5.1, Guidelines for Fire Protection For Nuclear Power Plants, states that alternate or dedicated shutdown may require manual actions required to be taken from remote operating stations, local panels, and/or individual equipment locations. The BTP also specifies that the analysis must demonstrate that the manual actions are sufficient to achieve the safe shutdown functions and can be performed within the time constraints necessary to ensure the safe shutdown performance objectives are met. The performance deficiency was that analysis did not establish plant specific times that would be available to complete time critical actions nor were any timed walkthroughs documented or time lines developed to establish the time necessary to perform time critical portions of the safe shutdown operating procedures.

The finding is more than minor because it is associated with the Mitigating Systems Cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. Preliminary time lines were developed through the performance of procedure walkdowns during the inspection and the results were compared to estimated times that would be available (estimated times based on related accident analyses, PRA studies and generic information available for similar plant designs). The results of these comparisons indicated that, when using the most limiting fire scenario assumptions, it could be challenging for the operators to maintain plant parameters within the safe shutdown performance goals. However, potential deviations from the goals would not be expected to be significant enough to result in the plant being in an unrecoverable condition. As a result, this finding was determined to be a safe shutdown issue that would be assigned a low degradation rating in accordance with NRC Manual Chapter 609, Significance Determination Process, Appendix F, Fire Protection, and screened to

Green in step 1.3.1. **(FIN 05000443/2005-08-01) Time Critical Operator Actions Not Included in the Safe Shutdown Analysis**

Enforcement. No violation of regulatory requirements occurred.

.02 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the fire hazards analysis, safe shutdown analyses and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected. The team ensured that separation requirements of Section III.G of 10 CFR 50 Appendix R (or the UFSAR for SRP plants) were maintained for the credited safe shutdown equipment and their supporting power, control and instrumentation cables. This review included an assessment of the adequacy of the selected systems for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and associated support system functions.

The team reviewed the licensee procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the FHA. A sample of hot work and transient combustible control permits were also reviewed. The team performed plant walkdowns to verify that protective features were being properly maintained and administrative controls were being implemented.

The team also reviewed the licensee's design control procedures to ensure that the process included appropriate reviews and controls to assess plant changes for any potential adverse impact on the fire protection program and/or post-fire safe shutdown analysis and procedures.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries (including walls, fire doors and fire dampers) to ensure they were appropriate for the fire hazards in the area. (No electrical raceway fire barriers were utilized in the areas inspected.)

The team reviewed installation/repair and qualification records for a sample of penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

a. Inspection Scope

The team reviewed the design, maintenance, testing and operation of the fire detection and suppression systems in the selected plant fire areas. This included verification that the manual and automatic detection and suppression systems were installed, tested and maintained in accordance with the NFPA code of record, or as NRC approved deviations, and that they would control and/or extinguish fires associated with the hazards in the selected areas. A review of the design capability of suppression agent delivery systems was verified to meet the code requirements for the fire hazards involved. The team also performed a walkdown of accessible portions of the detection and suppression systems in the selected areas as well as a walkdown of major system support equipment in other areas (e.g., fire protection pumps, Halon and/or CO₂ storage tanks and supply system) and as assess the material condition of the systems and components.

The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements.

The team also assessed the fire brigade capabilities by reviewing training and qualification records, drill critique records. The team also reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact post-fire safe shutdown. In addition, the team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), and various fire brigade equipment (including smoke removal equipment) to determine operational readiness for fire fighting.

b. Findings

No findings of significance were identified.

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed document reviews and plant walkdowns to verify that redundant trains of systems required for hot shutdown are not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- C A fire in one of the selected fire areas would not directly, through production of smoke, heat or hot gases, cause activation of suppression systems that could potentially damage all redundant trains;
- C A fire in one of the selected fire areas (or the inadvertent actuation or rupture of a fire suppression system) would not directly cause damage to all redundant trains (e.g., sprinkler caused flooding of other than the locally affected train).
- C Adequate drainage is provided in areas protected by water suppression systems.

b. Findings

No findings of significance were identified.

.06 Alternative Shutdown Capability

a. Inspection Scope

Alternative shutdown capability for the areas selected for inspection utilizes shutdown from outside the control room and is discussed in section 1R05.01 of this report.

.07 Circuit Analyses

a. Inspection Scope

The inspectors verified that the licensee performed a post-fire safe shutdown analysis for the selected fire areas and that the analysis appropriately identified the structures, systems and components important to achieving and maintaining safe shutdown. Additionally, the team verified that the licensee's analysis ensured that necessary electrical circuits were properly protected and that circuits that could adversely impact safe shutdown due to hot shorts, shorts to ground or other failures were identified, evaluated and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The team's reviewed considered fire and cable attributes, potential undesirable consequences and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, multiple spurious actuations, actuations resulting in flow diversion or loss of coolant events.

The team also reviewed cable raceway drawings and routing lists for a sample of components required for post-fire safe shutdown to verify that cables were routed as described in the cable routing matrices.

Cable failure modes were reviewed for the following components:

- C RC-PCV-456A, -B Power Operated Relief Valves (PORVs)
- C RC-V-122, -124 PORV Isolation Valves
- C CS-V-168 RCP Seal Water Isolation Valve
- C CS-V-175 Excess Letdown Isolation Valve
- C RC-V-87, -88 RHR Inlet Isolation Valves
- C RC-FV-2881 Head Vent Valve
- C RC-V-323 Head Vent Isolation Valve

The team reviewed circuit breaker coordination studies to ensure equipment needed to conduct post-fire safe shutdown activities would not be impacted due to a lack of coordination. The team confirmed that coordination studies had addressed multiple faults due to fire. Additionally, the team reviewed a sample of circuit breaker maintenance and records to verify that circuit breakers for components required for post-fire safe shutdown were properly maintained in accordance with procedural requirements.

b. Findings

No findings of significance were identified.

.08 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis and associated documents to verify an adequate method of communications would be available to plant operators following a fire. During this review the team considered the effects of ambient noise levels, clarity of reception, reliability and coverage patterns. The team also inspected the designated emergency storage lockers to verify the availability of portable radios for the fire brigade. The inspectors also verified that communications equipment such as repeaters, transmitters, etc. would not be affected by a fire.

b. Findings

No findings of significance were identified.

.09 Emergency Lighting

a. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights, and in specified locations permanent essential lighting, throughout the selected fire areas to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation and/or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an 8-hour capacity. Preventive maintenance procedures and various documents, including the vendor manuals and completed surveillance tests were reviewed to ensure adequate surveillance testing and periodic battery replacements were in place to ensure reliable operation of the eight-hour emergency lights and that the emergency lighting units were being maintained consistent with the manufacturer's recommendations and accepted industry practices.

b. Findings

No findings of significance were identified.

.10 Cold Shutdown Repairs

a. Inspection Scope

The team verified that the licensee had dedicated repair procedures, equipment, and materials to accomplish repairs of components required for cold shutdown which might be damaged by the fire to ensure cold shutdown could be achieved within the time frames specified in their design and licensing bases. The inspectors verified that the repair equipment, components, tools and materials (e.g., pre-cut cables with prepared attachment lugs) were available and accessible onsite. Repair procedures reviewed included LS0565.06, Temporary Power Modification for RHR Loop Isolation Valves, Rev. 01, Chg. 01.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment, passive fire barriers, or pumps, valves or electrical devices providing safe shutdown functions or capabilities). The team also verified that the short term compensatory measures compensated for the degraded function or feature until appropriate corrective action

could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.01 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team verified that the licensee was identifying fire protection and post-fire safe shutdown issues an appropriate threshold and entering them into the corrective action program. The team also reviewed a sample of selected issues to verify that the licensee had taken or planned appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The team presented their preliminary inspection results to Mr. J. Dent, Assistant Plant Manager, and other members of the site staff at an exit meeting on July 29, 2005. No proprietary information was included in this inspection report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Conti, Operations
J. Dent, Jr., Assistant Plant Manager
R. N. Douceur, Regulatory Compliance
R. Faix, Engineering
R. Jamison, Engineering
D. Kelly, Operations
M. O'Keefe, Regulatory Compliance
E. Trump, Engineering
P. Tutinas, Engineering

NRC

J. Rogge, Chief, Electrical and Fire Protection Branch, Division of Reactor Safety
G. Dentel, Senior Resident Inspector, Seabrook Nuclear Power Station
S. Shaffer, Resident Inspector, Seabrook Nuclear Power Station

LIST OF ITEMS OPENED & CLOSED

Open and Closed

| | | |
|---------------------|-----|---|
| 05000443/2005008-01 | FIN | Time Critical Operator Actions Not Included in the Safe Shutdown Analysis |
|---------------------|-----|---|

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing Documents

Seabrook Station Final Safety Analysis Report (FSAR)
Seabrook Station Fire Protection Technical Requirements Manual
App. A Responses to BTP APCSB 9.5-1
NUREG-0800 Section 9.5.1 Standard Review Plan - Fire Protection Program Section
RG 1.189 Fire Protection for Operating Nuclear Power Plants - April 2001
NUREG-0896 Seabrook Safety Evaluation Report, including Supplements 4 through 9

Calculations/Engineering Evaluation Reports

748-105, BISCO Fire Test Report, Rev. 0

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CB-021-CB105-2003, Penetration Seal Design Document
CB-021-CB101-3041, Penetration Seal Design Document
61504-03, Hydraulic Calculations for Cable Trays in Cable Spreading Room Zone #2, Rev. 2
61505-03, Hydraulic Calculations for Cable Trays in Cable Spreading Room Zone #1, Rev. 2
61522-03, Hydraulic Calculations for Cable Trays in Cable Spreading Room Zone #3, Rev. 2
61523-03, Hydraulic Calculations for Cable Trays in Cable Spreading Room Zone #4, Rev. 2
61530-03, Hydraulic Calculations for Cable Trays in Cable Spreading Room Zone #5, Rev. 2
61577-02, Hydraulic Calculations for 'B' Electrical Tunnel, Rev. 1
61990-01, Hydraulic Calculations for Zone 21B, Rev. 0
61964-01, Hydraulic Calculation for Zone 1B-1, Rev. 0
9763-006-70-1, Specification for Fixed Fire Suppression Systems, dated 09 Nov 78
9763-3-ED-00-32-F, Diesel Generator Relay Settings, Rev. 0
9763-3-ED-00-22-F, Medium Voltage Protective Relay Coordination and Miscellaneous Relay Settings, Rev. 5
9763-3-ED-00-70-F, Appendix R Fuse Coordination, Rev. 2

Procedures

ES-0.1, Reactor Trip Response, Rev. 31
FP 2.1, Control of Ignition Sources, Rev. 6
FP 2.2, Control of Combustible Materials, Rev. 7 Ch.1
FP 6.1, Fire Protection Inspections and Logs, Rev. 4 Ch. 3
IX1656.970, NI—6690 Excore Neutron Flux Monitoring Loop Train A Calibration, Rev. 5
OS0443.11, Fire Protection Water System Three Year Flow Test, Rev. 5 Ch. 7
OS0443.47, 8 Hour Emergency Lighting Units Monthly Functional Test, Rev. 7 Ch. 21
OS0443.74, Fire Pumps Annual Test, Rev. 4
OS1000.01, Heatup From Cold Shutdown To Hot Standby, Rev. 12, Chg. 21
OS1013.06, Residual Heat Removal Train B Shutdown, Rev. 07, Chg. 08
OX0443.06, Deluge and Preaction Sprinkler Valve 18 Month Actuation Test, Rev. 6 Ch. 3
OX0443.12, FP Dry Pipe Spray and Sprinkler Systems 18 Month Inspection, Rev. 6 Ch. 4
OX0443.11, Fire Protection Water System 3 Year Flow Test, Rev. 5 Ch. 7
LX 0558.01, 4.16 KV Breaker Inspection, Testing and PM, Rev. 1
OS100.01, Heatup From Cold Shutdown to Hot Standby, Rev. 12, Chg. 21
OS1013.06, Residual Heat Removal Train B Shutdown, Rev. 07, Chg. 08
OS1200.00A, Fire Hazards Analysis for Affected Area/Zone - Appendix A
OS1200.02A, Safe Shutdown and Cooldown From The Remote Safe Shutdown Facilities - Train A, Rev. 09
OS1200.02B, Safe Shutdown and Cooldown From The Remote Safe Shutdown Facilities - Train B, Rev. 09
OX1400.01, Remote Safe Shutdown System Monthly Channel Check, Rev. 7
OX1400.02, Remote Safe Shutdown System 18 Month Operability Check, Rev. 6

Completed Tests/Surveillances

OS0443.74, Fire Pumps Annual Test Rev. 4, Completed 7/04/05
OX0443.12, FP Dry Pipe Spray and Sprinkler Systems 18 Month Inspection, Rev. 6 Ch. 4, Completed 1/24/05

OX0443.12, FP Dry Pipe Spray and Sprinkler Systems 18 Month Inspection, Rev. 6 Ch. 4,
Completed 3/10/05

System Health Reports

Fire Protection System Health Report - 1st and 2nd Quarter 2005

Drawings

9763-F-202068-FP, Diesel Generator Building Plans and Sections Below Grade General Arrangement

9763-F-202069-FP, Diesel Generator Building Plans Above Grade General Arrangement

9763-F-310431-FP, Control Building - Elev. 21'6" Electrical General Arrangement

9763-F-310452-FP, Control Building - Elev. 50'0" Cable Tray Layout - Plan

9763-F-310454-FP, Electrical Tunnel - B Train Cable Tray Layout - Plan

9763-F-310461-FP, Control Building - Elev. 50'0" Cable Tray Layout - Sections - Sht. 1

9763-F-310468-FP, Electrical Tunnel - B Train Cable Tray Layout - Sections - Sht. 1

9763-F-310469-FP, Electrical Tunnel - B Train Cable Tray Layout - Sections - Sht. 2

84-6956-SH26, Diesel Generator Bldg. Fuel Oil Storage Tanks Zones 1A-1 & 1B-1, Rev. 10

84-6956-SH30, Diesel Generator Bldg. Diesel Generator Room-Zone 21B at Elev. 21'6"

Rev. 01

1-NHY-310007, 4160V Switchgear Bus 1-E5 One Line Diagram, Rev. 20.

1-NHY-310008, 4160V Switchgear Bus 1-E6 One Line Diagram, Sht. 1 Rev.18, Sht. 2 Rev. 3

1-NHY-310010, Diesel Generator DG-1A and DG-1B One Line Diagram, Sht. 1 Rev. 13, Sht. 2
Rev. 4

1-NHY-310026, Control Building 480V Motor Control 1-E531 One Line Diagram, Rev. 27

1-NHY-310042, 125V DC Vital Distribution System One Line Diagram, Rev. 16

1-NHY-310882, Reactor Coolant Pump 1-P-1A Three Line Diagram, Sheets A05a through A05l

1-NHY-310882, Pressurizer Pressure Control Valve 1-PCV-456A Schematic Diagram,
Sht. E87/19a, Rev. 5

1-NHY-310882, Pressurizer Pressure Control Valve 1-PCV-456A Cable Schematic, Sht.
E87/19c, Rev. 5

1-NHY-310882, Pressurizer Pressure Control Valve 1-PCV-456B Schematic Diagram, Sht.
E88/19a, Rev. 6

1-NHY-310882, Pressurizer Pressure Control Valve 1-PCV-456B Cable Schematic, Sht.
E88/19c, Rev. 9

1-NHY-310882, Reactor Coolant System B Train Vital Control Schematic Diagram, Sht.
E88/1g, Rev. 6

1-NHY-310882, Reactor Coolant System B Train Vital Control Cable Schematic, Sht.
E88/1d, Rev. 10

1-NHY-310841, MS Atmospheric Relief Valve, 1-PV-3001 Schematic Diagram, Sht. E2T/8a
Rev. 7 & Sht. c, Rev. 8

1-NHY-310882, RHR Inlet Isolation Valve I-V-87 Schematic Diagram, Sht. B61a, Rev. 12

1-NHY-310882, RHR Inlet Isolation Valve 1-V-87 Cable Schematic, Sht. B61c, Rev. 8

1-NHY-310882, RHR Inlet Isolation Valve I-V-88 Schematic Diagram, Sht. B62a, Rev. 11

1-NHY-310882, RHR Inlet Isolation Valve 1-V-88 Cable Schematic, Sht. B62c, Rev. 8

1-NHY-310882, Reactor Vessel Venting Valve I-V-323 Schematic Diagram, Sht. BV9a, Rev. 7

- 1-NHY-310882, Reactor Vessel Venting Valve I-V-323 Cable Schematic, Sht. BV9c, Rev. 4
- 1-NHY-310882, Reactor Coolant Pressure Relief Isolation Valve I-V-122 Schematic Diagram, Sht. B97a, Rev. 8
- 1-NHY-310882, Reactor Coolant Pressure Relief Isolation Valve I-V-122 Cable Schematic, Sht. B97c, Rev. 8
- 1-NHY-310882, Reactor Coolant Pressure Relief Isolation Valve I-V-124 Schematic Diagram, Sht. B98a, Rev. 10
- 1-NHY-310882, Reactor Coolant Pressure Relief Isolation Valve I-V-124 Cable Schematic, Sht. B98c, Rev. 9
- 1-NHY-310891, Reactor Coolant Pump Seal Water Isolation Valve I-V-168 Schematic Diagram, Sht. B72a, Rev. 13
- 1-NHY-310891, Reactor Coolant Pump Seal Water Isolation Valve I-V-168 Cable Schematic Sht. B72c, Rev. 11
- 1-NHY-310891, CS System B Train Non-Vital Control Schematic Diagram, Sht. E95/2a, Rev. 6
- 1-NHY-310891, CS System B Train Non-Vital Control Cable Schematic, Sht. E95/2c, Rev. 6
- 9763-F-310442, Control Building Conduit Plan, Elev.21'-6", Rev. 32
- 9763-F-310466, Electrical Tunnel - A Train Cable Layout Section, Rev. 14
- 9763-F-310476, Control Building Cable Trays Node Plan, Elev 21'-6", Rev. 8
- 9763-F-310478, Electrical Tunnel - A Train Cable Tray Node Plan, Rev. 8
- 9763-F-310524, Diesel Generator Building Elev. 21'-6" and Elev. -16'-0" Exposed Conduit Plan, Rev. 27
- 9763-F-310538, Diesel Generator Building Elev. 21'-6" Cable Train Node Plan, Rev. 2

Piping and Instrumentation Drawings

- 1-CBA-B20300, Control Building Air Handling Overview, Rev. 4
- 1-CBA-B20302, Control Building Air Handling Emergency Switchgear Area Detail, Rev. 4
- 1-CBA-B20303, Control Building Air Handling Detail, Rev.18
- 1-CC-B20204, Primary Component Cooling Loop A Overview, Rev. 4
- 1-CC-B20205, Primary Component Cooling Loop A Detail, Rev. 24
- 1-CC-B20207, Primary Component Cooling Loop A Detail, Rev. 10
- 1-CC-B20209, Primary Component Cooling Thermal Barrier Loop A Detail, Rev. 9
- 1-CS-B20720, Chemical and Volume Control System Overview, Rev. 4
- 1-CS-B20722, Chemical and Volume Control System Heat Exchangers Detail, Rev. 11
- 1-CS-B20723, Chemical and Volume Control System Purification Detail, Rev. 16
- 1-CS-B20724, Chemical and Volume Control System Letdown Degasifier Detail, Rev. 13
- 1-CS-B20725, Chemical and Volume Control System Charging System Detail, Rev. 25
- 1-CS-B20726, Chemical and Volume Control System Seal Water Detail, Rev. 19
- 1-CS-B20729, Chemical and Volume Control System Boric Acid Detail, Rev. 15
- 1-DAH-B20624, Diesel Generator Building Air Handling, Rev. 5
- 1-FP-B20264, Fire Protection Overview, Rev. 13
- 1-FP-B20266, Fire Pump House Detail, Rev. 22
- 1-FP-B20268, Fire Protection - Standpipe Detail, Rev. 14
- 1-FP-B20271, Fire Protection Details, Rev. 18
- 1-FP-B20272, Fire Protection Details, Rev. 8
- 1-FW-B20684, Feedwater System Overview, Rev. 6
- 1-FW-B20685, Feedwater System Overview, Rev. 3

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1-FW-B20686, Feedwater System Details, Rev. 11
1-FW-B20688, Emergency Feedwater System Details, Rev. 18
1-MS-B20579, Main Steam System Overview, Rev. 8
1-MS-B20580, Main Steam Headers Detail, Rev. 10
1-MS-B20581, Main Steam Headers Detail, Rev. 10
1-MS-B20582, Main Steam Emergency Feedwater Pump Supply Details, Rev. 18
1-RC-B20840, Reactor Coolant System Overview, Rev. 6
1-RC-B20841, Reactor Coolant System Loop No. 1, Rev. 19
1-RC-B20842, Reactor Coolant System Loop No. 2, Rev. 11
1-RC-B20843, Reactor Coolant System Loop No. 3, Rev. 14
1-RC-B20844, Reactor Coolant System Loop No. 4, Rev. 17
1-RC-B20845, Reactor Coolant System Reactor Vessel, Rev. 12
1-RC-B20846, Reactor Coolant System Pressurizer, Rev. 13

Pre-Fire Plans

App. A Fire Hazard Analysis for DG-F-1B-A Fuel Oil Storage Tank Area
App. A Fire Hazard Analysis for DG-F-2B-A Engine Room
App. A Fire Hazard Analysis for DG-F-3B-Z HVAC Equipment Area
App. A Fire Hazard Analysis for DG-F-3F-A Train B, D.G. Air Intake & Exhaust Silencer Area
App. A Fire Hazard Analysis for ET-F-1C-A, Lower Electrical Tunnel - Train B
App. A Fire Hazard Analysis for ET-F-1D-A, Electrical Tunnel - Train B
App. A Fire Hazard Analysis for CB-F-1B-A, Switchgear Room 'B'
App. A Fire Hazard Analysis for CB-F-2A-A, Cable Spreading Room

Operator Safe Shutdown Training

Combined Lesson Plan - Abnormal Operating Procedures 8210 - Response to Fire, Safe Shutdown
Licensed Operator Requalification Training Program L3537C - Remote Safe Shutdown
Job Performance Measure L0075J - Trip/Disable Loads in Response to a Fire
Licensed Operator Initial Training Program - Abnormal Operating Procedures L8210I Response to Fire, Safe Shutdown
Licensed Operator Continuing Training Program - Abnormal Operating Procedures L8210C Response to Fire, Safe Shutdown
Nuclear Systems Operator Initial Training Program - Abnormal Operating Procedures N8210I Response to Fire, Safe Shutdown
Nuclear Systems Operator Continuing Training Program - Abnormal Operating Procedures N8210C Response to Fire, Safe Shutdown

Hot Work and Ignition Source Permits

ISP-05-1593
ISP-05-1594
ISP-05-1595
ISP-05-1602

Transient Combustible Evaluations

CMP-05-2253
CMP-05-2255

Miscellaneous Documents

NFPA 13 - 1983 Installation of Sprinkler Systems
DBD-FP-01 Appendix 'R' Emergency Lighting Design Basis Document Rev. 2
DCR 99-008: DCN 14
DCR 03-002: DCN 21, Supplemental Emergency Power System
Information Sheet - Croker Fog Nozzles, 3460 Series, www.croker.com
Information Sheet - Grinnell Automatic Sprinklers, Model F950 Duraspeed 10/15/76
Yankee Atomic Memorandum "Response to ACR 96-544 Item No. 94" dated 9/22/97
Letter from UEC to PSNH, Fire Protection of Safe Shutdown Capability Operator Action List,
dated 11/11/1986

Condition Reports

| | | |
|----------|----------|----------|
| 02-13168 | 05-00160 | 05-08770 |
| 03-01760 | 05-00858 | 05-09074 |
| 03-02197 | 05-01257 | 05-09397 |
| 04-04559 | 05-02284 | |
| 04-06627 | 05-06044 | |
| 04-08884 | 05-06316 | |
| 04-10420 | 05-06352 | |
| 04-10861 | 05-08673 | |

Work Orders

| | |
|------------|------------|
| WO 0244651 | WO 0429108 |
| WO 0308020 | WO 0435207 |
| WO 0339292 | WO 0442182 |
| WO 0400806 | WO 0443189 |
| WO 0403709 | WO 0443887 |
| WO 0413126 | WO 0444076 |
| WO 0413751 | |

LIST OF ACRONYMS USED

| | |
|-------|---|
| AC | Alternating Current |
| BTP | Branch Technical Position |
| CFR | Code of Federal Regulations |
| CR | Condition Report |
| DRS | Division of Reactor Safety |
| EDG | Emergency Diesel Generator |
| FA | Fire Area |
| FHA | Fire Hazards Analysis |
| FSAR | Final Safety Analysis Report |
| FZ | Fire Zone |
| IP | Inspection Procedure |
| IPE | Individual Plant Examination |
| IPEEE | Individual Plant Examination of External Events |
| IR | Inspection Report |
| NFPA | National Fire Protection Association |
| NRC | Nuclear Regulatory Commission |
| PAR | Publicly Available Records |
| P&ID | Piping and Instrumentation Drawing |
| PORV | Power Operated Relief Valves |
| PRA | Probabilistic Risk Assessment |
| QA | Quality Assurance |
| RCP | Reactor Coolant Pump |
| RHR | Residual Heat Removal |
| SCBA | Self-Contained Breathing Apparatus |
| SER | Safety Evaluation Report |
| TRM | Technical Requirements Manual |