September 12, 2003

Mr. Michael Balduzzi
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION- NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT NO. 05000293/2003005

Dear Mr. Balduzzi:

On July 31, 2003, NRC completed a triennial fire protection team inspection at your Pilgrim Nuclear Power Station. The enclosed report documents the inspection findings which were discussed at an exit meeting on July 28, 2003, with yourself and other members of the Entergy 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.

The report documents one finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low significance and because it is entered into your corrective action plan, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of the inspection report, with the basis of your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-001; with copies to the Regional Administrator Region I; the Director, Office of Enforcement, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-001; and the NRC Resident Inspector at Pilgrim.

In accordance with 10 CFR 2.790 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
Electrical Branch
Division of Reactor Safety

Docket No. 50-293
License No. DPR-35

Enclosure: NRC Inspection Report 05000293/2003005
w/Attachments

cc w/encl:
G. Taylor, Chief Executive Officer
M. Kansler, President, Entergy Nuclear Operations, Inc.
J. Herron, Senior Vice President and Chief Operating Officer
W. Riggs, Director, Nuclear Assessment Group
D. Pace, Vice President, Engineering
R. Edington, Vice President, Operations Support
J. Kelly, Director, Nuclear Safety Assurance
C. Faison, Manager, Licensing
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The Honorable Therese Murray
The Honorable Vincent deMacedo
Chairman, Plymouth Board of Selectmen
Chairman, Duxbury Board of Selectmen
Chairman, Nuclear Matters Committee
Plymouth Civil Defense Director
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-293
License No:	DPR- 35
Report No:	05000293/2003005
Licensee:	Entergy Nuclear
Facility:	Pilgrim Nuclear Power Station
Location:	Rocky Hill Road Plymouth, Massachusetts
Dates:	July 14-18 and 28-31, 2003
Inspectors:	R. Fuhrmeister, Sr. Reactor Inspector, Division of Reactor Safety G. Morris, Reactor Inspector, DRS K. Young, Reactor Inspector, DRS H. Eichenholz, Sr. Reactor Inspector, DRS D. Werkheiser, Reactor Inspector (in training), DRS
Approved By:	John F. Rogge, Chief Electrical Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000293/2003005, on 7/14-18 and 28-31/03, Entergy Nuclear, Pilgrim Nuclear Power Station, Fire Protection.

The inspection was conducted by a team composed of regional specialists. The team identified one Green non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

The team identified no significant findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of License Condition 2.F, Fire Protection, because the diagnostic and indicating instrumentation provided to the operators for post-fire shutdown outside the control room were inadequate for the operator to determine that actions were necessary, or that the manual action had caused the intended function to occur. The procedure for shutdown outside the control room called for evaluation of drywell temperature history prior to restoring the 'B' train of the reactor building closed cooling water system. This is due to the potential for high drywell temperatures to cause boiling, and voiding, in the non-essential loop of the reactor building closed cooling water system. The void collapse on subsequent starting of the system pump, could cause damage to the 'B' train piping system, rendering it unavailable for use. No protected train of drywell temperature instrumentation was provided for use in the post-fire operating environment. In addition, the instructions for operating motor control center (MCC) contactors manually at the MCC referred to the use of clamp-on ammeters to determine when valve motion had been completed, but no such ammeters were provided for use by the operators.

  The finding was considered more than minor, in that the issue was associated with the protection against external factors attribute of the Mitigating Systems cornerstone, and it affects the cornerstone objective. The mitigating systems cornerstone objective was affected because the finding adversely impacted the ability of the operators to achieve and maintain safe shutdown conditions in the event that a plant shutdown from outside the control room due to a fire was required. The finding was evaluated using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors determined the finding does not represent a design or qualification deficiency, or an actual loss of safety function for either internal or external initiating events. Therefore, the inspectors concluded that the finding was of very low safety significance. (Section 1RO5.8)

Report Details

Background

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

- Fire Area 1.10, Turbine Building (Feedwater Heater Bay Area)
- Fire Area 1.21, "A" Reactor Building Closed Cooling Water (RBCCW)/Turbine Building Closed Cooling Water (TBCCW) Room
- Fire Area 3.1, Main Control Room
- Fire Area 3.2, Cable Spreading Room

This inspection was a reduced scope inspection in accordance with the March 6, 2003, revision to IP 71111.05, "Fire Protection." Issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuits of concern used was that contained in the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in NRC Generic Letter 81-12.

2. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection (71111.05)

.1 Programmatic Controls

a. Inspection Scope

During tours of the PNPS, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. A sample of hot-work permits and transient combustible evaluations was also reviewed by the team. This was accomplished to verify that PNPS was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with their fire protection program.

b. Findings

No findings of significance were identified.

.2 Passive Fire Barriers

a. Inspection Scope

During tours of the PNPS, the team evaluated the material condition of fire walls, fire doors, fire dampers and fire barrier penetration seals to ensure that PNPS was maintaining the passive features in a state of readiness.

The team randomly selected two fire barrier penetration seals and a fire damper for detailed inspection to verify proper installation and qualification. The team reviewed associated design drawings, test reports, and engineering analyses. The team compared the observed in-situ penetration seal configurations to the design drawings and tested configurations. Additionally, the team compared the penetration seal and fire damper ratings with the ratings of the barriers in which they were installed. This was accomplished to verify that PNPS had installed the selected penetration seals and fire dampers in accordance with their design and licensing bases.

b. Findings

No findings of significance were identified.

.3 Fire Detection Systems

a. Inspection Scope

The team performed a walkdown of accessible portions of the selected fire areas to verify the existence and adequacy of fire detection systems in the selected fire areas. Additionally, the team reviewed PNPS's installation specification and National Fire Protection Association (NFPA) code compliance report. The team reviewed completed surveillance procedures to verify the adequacy and frequency of fire detection component testing. This review was performed to ensure that the fire detection systems for the selected fire areas met their design and licensing bases.

b. Findings

No findings of significance were identified.

.4 Fixed Fire Suppression Systems and Equipment

a. Inspection Scope

The team evaluated the adequacy of the wet pipe sprinkler systems in fire zones 2.9/2.10 and the total flooding Halon (1301) system in fire zone 3.2 by performing a walkdown of the systems, review of installation drawings, specifications and reviews of functional testing including initial discharge testing for the Halon system. This review was performed to verify that the selected fixed suppression systems met their design and licensing bases.

b. Findings

No findings of significance were identified.

.5 Manual Fire Suppression Capability

a. Inspection Scope

The team walked down selected standpipe systems, hose reels and portable fire extinguishers to determine the material condition of manual fire fighting systems. Electric and diesel fire pump flow and pressure tests were reviewed by the team to ensure the pumps were meeting design requirements. Additionally, the team witnessed surveillance testing of the electric and diesel fire pumps. Fire main loop flow testing was reviewed to ensure no degradation of the piping had occurred. The team reviewed the pre-fire plans for the target fire areas to verify accuracy of the plans versus the installed fire protection features in the selected fire areas.

The team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), portable communications equipment and various other fire brigade equipment to determine material condition and operational readiness of equipment for fire fighting.

The team reviewed Fire Brigade Initial Training and Fire Brigade Continuing Training course materials to verify appropriate training was being conducted for station firefighting personnel. Additionally, the team reviewed selected fire drills and critiques to ensure that drills were being conducted in risk significant areas and that fire brigade performance was at an acceptable level.

The team reviewed the qualifications of several fire brigade members to ensure that they had met and maintained the requirements to be fire brigade members.

b. Findings

No findings of significance were identified.

.6 Post-Fire Safe Shutdown Emergency Lighting and Communications

a. Inspection Scope

The team observed the placement and aiming of eight-hour emergency light battery units (ELBUs) throughout the selected fire zones to evaluate their adequacy for illuminating access and egress pathways and equipment requiring local operation for post-fire safe shutdown. In addition, during the alternate shutdown procedure walk through documented in Section 1RO5.8, "Alternative Shutdown Capability," the team verified that emergency lights were provided where needed.

The team reviewed surveillance and preventive maintenance procedures and a second quarter 2003 ELBU system health report to ensure operational readiness of the ELBUs.

The team reviewed PNPS's communications systems to ensure fire department and operator communications could be maintained for fire fighting and post-fire safe shutdown conditions.

b. Findings

No findings of significance were identified.

.7 Electrical Raceway Fire Barrier System

a. Inspection Scope

The team walked down portions of the cable spreading room to observe material condition of the Mecatiss fire wrap installed to protect cables. Additionally, the team reviewed the Mecatiss plant design change package, installation drawings, qualification testing documents and engineering analyses for selected configurations. The NRC safety evaluations of fire protection features for PNPS were also reviewed by the team. This review was performed to verify that the selected portions of the Mecatiss fire barrier system met its design and licensing bases and that the installed configuration was consistent with the tested configuration.

b. Findings

No findings of significance were identified.

.8 Implementation of Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the PNPS procedures for shutdown with a fire in the plant. The team also reviewed operator training lesson plans and job performance measures related to post-fire shutdown. The team performed a walkthrough of the procedure for operating the high pressure coolant injection (HPCI) system from the alternate shutdown panel (ASP). The team discussed the procedural guidance for operating HPCI from the

ASP, and for local operation of MCC contactors with licensed operators and a procedure writer.

The team inventoried the post-fire shutdown tools contained in the Appendix R toolboxes in the switchgear rooms, and reviewed the availability of personal protective equipment necessary for shutdown outside the control room.

The team evaluated manual actions for shutdown outside the control room against the criteria in the March 6, 2003 revision of IP 71111.05 to determine feasibility of the actions called for in the procedure.

b. Findings

Introduction. The inspectors identified a non-cited violation of License Condition 2.F, Fire Protection, because the diagnostic and indicating instrumentation provided to the operators for post-fire shutdown outside the control room were inadequate for the operator to determine that actions were necessary, or that the manual action had caused the intended function to occur.

Description. The procedure for conducting a plant shutdown from outside the control room called for evaluation of drywell temperature history prior to restoring the 'B' train of the reactor building closed cooling water system. This is due to the potential for high dry well temperatures to cause boiling, and voiding, in the non-essential loop of the reactor building closed cooling water systems (RBCCW). The procedure directs the operator to select one of four alternatives for restoring 'B' train RBCCW. If drywell temperature reached 250°F, the operator is directed to isolate the non-essential loop from the 'B' train RBCCW header. This prevents water hammer, resulting from collapsing voids when the pump is started, from challenging the structural integrity of the 'B' train RBCCW header. Since the valves may not be accessible for local manual operation, the operator may need to close the valves by manually depressing the valve motor contactor in the motor control center cubicle. Since the non-essential loop of RBCCW is connected to the 'B' train header, the 'A' train of RBCCW is unaffected by this issue.

No protected train of drywell temperature instrumentation was provided for use during shutdown from outside the control room. In addition, the instructions for operating MCC contactors manually at the MCC referred to the use of clamp-on ammeters to determine when valve motion had been completed, but no such ammeters were provided for use by the operators.

Analysis. The diagnostic instrumentation and indications provided to the operator for post-fire shutdown from outside the control room were inadequate for the operator to determine that actions were necessary, or that the manual action had caused the intended function to occur. The finding was considered more than minor, in that the issue was associated with the protection against external factors attribute of the Mitigating Systems cornerstone, and it affects the cornerstone objective. The Mitigating Systems cornerstone objective was affected because the finding adversely impacted the ability of the operators to achieve and maintain safe shutdown conditions in the event

that a plant shutdown from outside the control room, due to a fire, was required. This finding was evaluated using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors determined that the finding does not represent a design or qualification deficiency, or an actual loss of safety function for either internal or external initiating events. Therefore, the inspectors concluded that the finding was of very low safety significance. (Green)

Enforcement. License Condition 2.F, "Fire Protection," of facility operating license DPR-35 requires Entergy to implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated December 21, 1978. Section 5.16.6 of the December 21, 1978 SER, subsection (3) requires that an alternate shutdown system independent of the cabling and equipment in the cable spreading room, be provided.

Contrary to the above, Entergy did not provide a protected train of drywell temperature instrumentation needed for shutdown outside the control room, nor the clamp-on ammeters to verify valve stroke completion as described in the procedure for shutdown outside the control room. Because the failure to provide the instruments was of very low safety significance, and has been entered into the corrective action program (CR-PNP-2003-02840), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-293/03-05-01, Failure to Provide Instrumentation for Diagnosing and Verifying Manual Actions.

.9 Safe Shutdown Capability

a. Inspection Scope

The team reviewed the PNPS Updated Fire Hazards Analysis (FHA), Document Number 89XM-1-ER-0, Revision E6, and associated safe shutdown analysis calculations to confirm that PNPS had identified the methods and the structures, systems, and components (SSCs) necessary to achieve hot shutdown and cold shutdown following postulated fires in the selected risk significant fire areas. The team further reviewed the applicable flow diagrams, instrument drawings and the safe shutdown components list to identify the components required for establishing the specified flow paths and for isolating the flow diversion paths. The team sampled sections of operating procedures associated with shutdown following a fire, to confirm the availability of selected components required for different fire scenarios.

The team verified that the applicable requirements of 10 CFR 50, Appendix R, Sections III.G and III.L for achieving and maintaining safe shutdown were properly addressed. The team verified that systems necessary to assure the safe shutdown functions of reactivity control, reactor coolant makeup, reactor heat removal, and process monitoring were protected within, or independent of, the selected fire zones. Where deviations from Appendix R requirements were identified, the team verified that the deviations had been approved and that conditions required by the deviations were implemented and being maintained.

The team reviewed the Appendix R circuit breaker coordination studies to determine whether breaker coordination problems were identified and resolved. Further, the team reviewed Appendix R breaker maintenance activities to verify that circuit breakers required for post-fire safe shutdown were properly maintained, and were ready to energize the post-fire shutdown equipment upon demand.

b. Findings

No findings of significance were identified.

.10 Safe Shutdown Circuit Analyses

a. Inspection Scope

For the selected fire areas, the inspectors reviewed the PNPS Safe Shutdown Analysis calculation to ensure at least one post-fire safe shutdown success path is maintained free of fire damage. This included a review of manual actions and the necessary repairs to reach cold shut down within 72 hours. The inspectors also reviewed selected procedures and calculations to ensure that adequate direction was provided to the operators to perform the necessary manual actions. Factors, such as timing, access to the equipment, and the availability of procedures, were considered in the inspectors' review.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed the fire impairments log, fire protection system health reports, open corrective maintenance backlog for fire protection and safe shutdown equipment, selected condition reports (CR) for fire protection and safe shutdown issues to evaluate the prioritization for resolving fire protection related deficiencies and the effectiveness of corrective actions. The team also reviewed recent quality assurance (QA) audits and fire protection self-assessments of the fire protection program to determine if the PNPS was identifying program deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

The team presented their preliminary inspection results to Mr. M. Balduzzi, Site Vice President, and other members of the PNPS staff at an exit meeting on July 31, 2003. PNPS acknowledged the conclusions and observations presented.

The team asked PNPS if any of the information provided during the inspection was proprietary. Proprietary information was identified and returned to PNPS prior to leaving the site. No proprietary information was included in this inspection report.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Nuclear:

M. Balduzzi, Site Vice President
S. Burke, Fire Protection Engineer
J. Coughlin, Senior Electrical Engineer
S. Das, Senior Electrical Engineer
J. Dawicki, Fire Brigade Instructor
R. Devario, Supervising Engineer, Electrical Engineering
J. Hendy, Licensed Operator
M. Hettner, Control Room Supervisor
C. Hickey, QA Engineer
S. Hudson, Systems Engineer, Emergency Light Unit
K. Kampschneider, System Engineer
R. Levin, Appendix R Electrical Engineer
W. Lobo, Licensing Engineer
C. McMorrow, Systems Engineer, Fire Protection
P. Hamizi, Design Engineer
D. Sitkowski, Electrical Engineer

NRC personnel:

J. Rogge, Chief, Electrical Engineering Branch
W. Raymond, Senior Resident Inspector, PNPS
C. Welch, Resident Inspector, PNPS

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

50-293/03-05-01	Failure to Provide Instrumentation for Diagnosing and Verifying Manual Actions

Closed

None

LIST OF DOCUMENTS REVIEWED

Administrative Procedures

ENN-QV-108, QA Surveillance Process, Rev. 0
NOP83FP1, Fire Protection Plan, Rev. 6
1.4.3, Combustible Controls For Pilgrim Station, Rev. 30
1.5.5, Hotwork Fire Safety, Rev. 29
2.2.29, Smoke and Heat Detection Systems, Rev. 19
2.4.54, Loss of All Fire Suppression Pumps of Loss of Redundancy In The Fire Water Supply System, Rev. 19
3.M.4-72, Diesel Fire Pump Engine Maintenance, Rev. 11
5.5.1, General Fire Procedure, Rev. 21
5.5.2, Special Fire Procedure, Rev.26
8.B.20, Fire Hazard(s) Inspection, Rev. 8

Fire Hazards Analysis and Safe Shutdown Analysis Calculation

89XM-1-ER-0, Updated Fire Hazards Analysis, Pilgrim Unit 1, Rev. E6
PS32, PNPS Safe shutdown Analysis, Rev. 5

Fire Protection Engineering Evaluations and Calculations

FPEE - 2, Steam Tunnel/Pressure Relief Partition, Rev. 4
FPEE - 3, Unprotected Structural Steel Fire Zones 1.21 and 1.22, Rev. 1
FPEE - 4, Evaluation of Floor/Ceiling Barriers Containing Unprotected Structural Steel, Rev. 2
FPEE - 5, Unfilled Block Walls and Unprotected Structural Steel In Main Control Room and Cable Spreading Room Walls, Rev. 1
FPEE - 15, Undampered Duct Penetrations Through Barrier 65.601, Rev. 0
FPEE - 33, Cable Spreading Room Ceiling Fire Barriers, Rev. 2
FPEE - 68, Cable Spreading Room, Conduit/Removable Panel, Rev. 1
FPEE - 88, Fire Door Clearances, Rev. 2
FPEE - 89, Fire Doors - Frame To Wall Opening Gaps, Rev. 0
FPEE - 90, Fire Door Anchorage, Rev. 0
FPEE - 100, Structural Steel in Steam Tunnel Walls, Rev. 0
FPEE - 112, Fire Barrier Penetration Seal Inaccessibility, Rev. 2
FPEE - 125, Mecatiss Fire Wrap MTS-1 Gang Wrap of Conduits A 1338, A 1340, and A1341, Rev. 0

PS 30, 480 Volt Breaker Coordination/ Breaker Settings, Rev. 0
PS 31, DC System Overcurrent Protection Coordination Study, Rev. 1
PS 32, Safe Shutdown Analysis Report, Rev. 5
PS 140, Thermal Overload Sizing for Priority 1 MOVs (DC), Rev. 1
PS 141, Thermal Overload Sizing for Priority 2-6 MOVs (AC), Rev. 1
PS 227, DC System Short Circuit Calculation, Rev. 0
PS 231, Ampacity Calculation For Power Cables in Conduits With MTS-1 Fire Wrap Located in the CSR, Rev. 1

Specifications

M-503, Specification For Furnishing an Installing Automatic Sprinkler Systems, Rev. E3
M-505, Specification/Report For Repair of Fire Resistance of Structural Steel Members, Rev. E15
M-506, Specification For Furnishing and Installing Fire Doors Assemblies, Rev. E0
M-533, Specification For Designing, Furnishing and Installing Halon 1301 Fire Extinguishing System, Rev. 4
M-570, Fire Barrier and Secondary Containment Penetration Seal Systems, Rev. E10

P&IDs

M218, Fire Protection System, Sheets 1 - 9
M241, RHR System P&ID, Rev. E77
M242, CS System P&ID, Rev. E47
M243, HPCI System P&ID, Rev. E49
M244, HPCI Turbine P&ID, Rev. E30
M245, RCIC System P&ID, Rev. E34
M246, RCIC System P&ID, Rev. E29

Drawings

A-316, Sh. 1-2, Reactor & Turbine Building Floor Plan EL. (-) 17'-6" and 6'-0" - Fire Barrier System
A-317, Sh. 1-2, Reactor & Turbine Building Floor Plan at EL. 23'-0" - Fire Barrier System
A-318, Sh. 1-2, Reactor & Turbine Building Floor Plan at EL. 37'-0" - Fire Barrier System
A-319, Sh. 1-2, Reactor & Turbine Building Floor Plan at EL. 51'-0" and 74'-3" - Fire Barrier Systems
A-320, Sh. 1-2, Reactor Building Plans and Intake Building Plan - Fire Barrier System
A-321, Reactor & Turbine Building, Section A-A, Rev. E2
A-322, Reactor & Turbine Building, Section B-B, Rev. E2
E1, Station Single Line Diagram, Rev. E19
E7, 4160 Volt System Single Line Diagram, Rev. E25
E8, 480 Volt Load Center and Motor Control Center Single Line Diagram, Rev. E19
E9, 480 Volt Load Center and Motor Control Center Single Line Diagram, Rev. E53
E9-1, 125 V DC MCC D7 Arrangement Diagram, Rev. E11
E9-2, 125 V DC MCC D8 Arrangement Diagram, Rev. E12
E9-7-9, 125 V DC MCC D9 Arrangement Diagram, Rev. E15
E10, Motor Control Center Single Line Diagram, Rev. E39
E11, Motor Control Center Single Line Diagram, Rev. E36
E12, Motor Control Center Single Line Diagram, Rev. E30
E13, 125 and 250 Volt DC Single Line Relay and Meter Diagram, Rev. E78
E14, 120 Volt Instrument AC, Rev. E33
E84, Core Spray System wiring Block Diagram, Rev. E8
E91, Reactor Core Isolation Cooling System Wiring Block Diagram, Rev. E8
E92, RCIC System Wiring Block Diagram, Rev. E14

E98, High Pressure Coolant Injection System Wiring Block Diagram, Rev. E9
E99, HPCI System Wiring Block Diagram, Rev. E10
E100, HPCI System Wiring Block Diagram, Rev. E8
E126, Residual Heat Removal System Wiring Block Diagram, Rev. E9
E296, Reactor Building Conduit and Tray Layout, Area 1, El. (-) 17, Rev. E18
E297, Reactor Building Conduit and Tray Layout, Area 3, El. (-) 17, Rev. E17
E298, Reactor Building Conduit and Tray Layout, Above El. 23, Rev. E24
E301, Reactor Building Conduit and Tray Layout, Above El. 51, Rev. E19
E302, Reactor Building Conduit and Tray Layout, El. 3 & (-) 17, Rev. E18
E320, Turbine Building Conduit and Tray Layout, Area 7, Below El. 23, Rev. E19
E532, Panel Arrangement Alternate Shutdown Panels, C150 Series, Rev. E2
E-539, Radiax Antenna Cable Riser Diagram, Rev. E2
E5000, RHR System MOVs Schematic Diagram, Rev. E10
E5005, RHR System MOVs Schematic Diagram, Rev. E11
E5015, RCIC System Motor Operated Valves Schematic Diagram, Rev. E11
E5028, RHR System Valve MO1001-19 Schematic Diagram, Rev. E0
E5037, HPCI Valves MO2301-3 &-8 Schematic Diagram, Rev. E0
M1K1-8, CS System Functional Control Diagram, Rev. E15
M1G4-5, RCIC System Functional Control Diagram, Rev. E8
M1H3-6, RHR Functional Control Diagram, Rev. E11
M1J14-14, HPCI DC MOV and Control Center Elementary Diagram, Rev. E1
M1J19-9, HPCI System Elementary Diagram, Rev. E16
M1J24-4, HPCI System Functional Control Diagram, Rev. E11
M1J32, HPCI System Elementary Diagram, Rev. E6
M1K7-7, Core Spray System Elementary Diagram, Rev. E10
M1K16, Core Spray System Elementary Diagram, Rev. E7
M33, Reactor Building Piping and Mechanical Above El. 23, Rev. E10
M277-13, “Pit-Char” Modification Fire Seals, Rev. E1
M327, Heating Ventilation and A/C Cable Spreading, Computer Room Access Control at EL. 23'-0", Rev. E5
M474,Sh. 1, Fire Protection System Fire Damper Schedule, Rev. E5
M474, Sh. 2, Fire Protection System Fire Damper Details, Rev. E5

Procedures

2.4.143, Shutdown From Outside Control Room, Rev. 28
8.E.23, Attach. 2, HPCI Instrumentation Calibration, Alt. Shdn. Pnl. N550, Rev. 42
8.Q.3-4, DC MCC and Breaker Panel Testing and Maintenance, Rev. 31
2.1.27, Drywell Temperature indication, Rev. 6
2.4.42, Loss of RBCCW, Rev. 21
5.5.1, General Fire Procedure, Rev. 21
5.5.2, Special Fire Procedure, Rev. 26
2.1.143.1, Shutdown With a Fire in Reactor Building East (Fire Area 1.9), Rev. 12
2.1.143.2, Shutdown With A Fire in Reactor Building West (Fire Area 1.10), Rev. 11
2.1.26, Inventory of Alternate Shutdown and EOP Support Tools, Rev. 17

Surveillance & Completed Surveillance Test Procedures

8.B.14, Fire Protection Technical Requirements, Rev. 29
8.B.27, Radiax Backup Voice Communication System For Fire Fighting, Rev. 6

3.M3-49, Emergency Lighting Battery Maintenance/Preventive Maintenance Procedure, Completed December 13, 2001, and February 15, 2002
8.B.4.7, Fire Panel C221, Control Room, Functional Test, Completed March 20, 2002, April 3, 2002 and March 26, 2003
8.B.9.2.3, Condenser Bay Wet Pipe Sprinkler Alarm Test FSAR Related, Completed May 13, 1999, May 9, 2001 and April 25, 2003
8.B.9.13, Condenser Bay Sprinkler Main Drain Test, Completed May 9, 2001 and April 25, 2003
8.B.12, Fire Protection System Flow Tests, Completed April 20, 2001, September 6, 2001 and November 26, 2002
8.B.15, Functional and Full Design Range Test of Electric Motor and Diesel Engine Driven Pumps in the Screenhouse, Completed November 13, 2000, April 17, 2002 and December 20, 2002
8.B.15, Annual Functional Tests of Fire Pumps - P-135 and P-140, Completed July 17, 2003
8.B.21, Emergency Lighting Units, May 29, 2003, and June 7, 2003
8.B.22, Halon 1301 System - Cable Spreading Room, Completed February 24, 2003, April 1, 2003 and April 14, 2003
8.B.35, Halon Systems - Initiating Device Functional Testing, Completed January 17, 2003

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February 14, 1980 Letter, Fire Protection Review-Pilgrim
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November 27, 1984, Approval of TS Submittal - Halon System - Cable Spreading Room
August 5, 1987 Letter, SE Report Concerning Licensees Request for Exemption for Duplicate Yard Lighting for III.J of Appendix R
February 9, 1988 Letter, Request for Exemption From 10 CFR Part 50, Appendix R Item III.G.1 Requirement Regarding Hot Shutdown Repairs for a Fire Event in the Plant
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March 17, 1988 Letter, SE Report of Criteria For Installation of Internal Conduit Smoke Seals at Appendix R Barriers at Pilgrim

May 17, 1988 Letter, SE of Fire Door-To-Frame, Frame-To-Wall and Anchor Bolt Irregularities

Fire Department Qualifications & Training Documents

Fire Brigade Matrix 2003 (Security and Operations)
PNPS Fire Brigade Qualification Record 2003
PNPS Fire Brigade Re-qualification Record 2003
SCBA EP Qualification, July 29, 2003

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Fire Drill, Redline Building, April 9, 2003
Fire Drill, “A” Battery Room, June 4, 2003
Fire Drill, Main Transformer, June 11, 2003

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NTM 5.3.1, Fire Brigade Certification Course, Rev. 25
NTM 5.3.2, Fire Brigade Re-qualification Course, Rev. 26

FB010604R2, Fire Brigade Plant Tour, Rev. 2
FB020101R1, Automatic Sprinkler Systems, Rev. 1
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FB020406R1, Flammable Gases - Part I, Rev. 1
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FB020502R1, Plant Smoke and Fire Control, Rev. 1
FB020503R3, Plant Communications, Rev. 3
FB020507R3, Plant Fire Prevention, Rev. 3
FB020601R1, PNPS Fire Brigade Equipment, Rev. 1
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FSAR Change Request 2682, Section 10.8, May 2, 2002

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M9801-ER-NQ-E0, Fire Protection License Commitments Report, April 29, 1999
NRC Inspection Report 05000293/2000-004
PNPS Fire Impairments Report, July 16, 2003
PNPS Fire Protection Corrective Maintenance Backlog, July 16, 2003
PNPS Fire Protection Elective Maintenance Backlog, July 16, 2003
T.P. 83-29, Fire Extinguishing Halon System For Cable Spreading Room Discharge Test and Temperature-Pressure Monitoring, September 24, 1984
Vendor Data Sheet for Air Balance Fire Dampers
Vendor Manual - Light Guard F100/F85 ELBU
V-0159, Tech, Rev. 6
86-XE-1-ER-Q, Analysis to Determine the Effect of Fuse and Breaker Coordination on the Appendix R Safe Shutdown Analysis, Rev. E1
99XM-1-ER-NQ, NFPA Code Compliance Assessment Report, Rev. E1
Problem Report PR96.9145
T.P. 87-147, Shutdown From Outside Control Room Demonstration, June 28, 1989
JPM-218-01, Safety Relief Valve Operation from Outside the Control Room
JPM-205-12, Alternate Power to RHR valves
JPM-262-05. Operate a 480 VAC Breaker Locally
JPM-262-03, Local Operation of 4160 VAC Breakers During Shutdown From Outside The Control Room
Motor Control Centers Reference Text

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CR	Condition Report
ELBU	Emergency Light Battery Unit
FHA	Fire Hazards Analysis
HPCI	High Pressure Coolant Injection System
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
MCC	Motor Control Center
NCV	Non-Cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
P&ID	Piping and Instrumentation Drawing
PNPS	Pilgrim Nuclear Power Station
QA	Quality Assurance
RBCCW	Reactor Building Closed Cooling Water
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SER	Safety Evaluation Report
SSC	Structures, Systems, Components

TBCCW Turbine Building Closed Cooling Water