UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

June 9, 2014

Mr. John Ventosa, Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT POWER STATION, UNIT 3 - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000286/2014008

Dear Mr. Ventosa:

On May 22, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed a triennial fire protection inspection at your Indian Point Power Station, Unit 3. The enclosed inspection report documents the inspection results, which were discussed on May 22, 2014, with Mr. Don Meyer, Acting Site Vice President, and other members of your staff.

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

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

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 System (PARS) component of the NRC's document system, Agencywide Documents Access and Management 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: 50-286
License No: DPR-64
Enclosure: Inspection Report 05000286/2014008
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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ROPReports Resources

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-286
License No:	DPR-64
Report No:	05000286/2014008
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	Indian Point Power Station, Unit 3
Location:	450 Broadway, GSB Buchanan, NY 10511-0249
Dates:	May 5 to 22, 2014
Inspectors:	J. Richmond, Senior Reactor Inspector (Team Leader) W. Schmidt, Senior Reactor Analyst R. Fuhrmeister, Senior Reactor Inspector S. Galbreath, Reactor Inspector
Approved by:	John F. Rogge, Chief Engineering Branch 3 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000286/2014008; 05/05/2014 - 05/22/2014; Indian Point Power Station, Unit 3; Triennial Fire Protection Inspection.

This report covered a two week on-site triennial fire protection team inspection by specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

No Findings were identified.

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 Entergy Nuclear Northeast (Entergy) had implemented an adequate fire protection program and whether post-fire safe shutdown capabilities had been established and were properly maintained at Indian Point Power Station, Unit 3 (IP3). The following fire areas and associated fire zones (FZs) were selected for detailed review based on prior inspection results and risk insights from the IP3 Individual Plant Examination of External Events (IPEEE):

Fire Area / Fire Zone

- CTL-3 / FZ-101A 32 Emergency Diesel Generator (EDG) Room
- AFW-6 / FZ-23 Auxiliary Feedwater (AFW) Pump Room
- TBL-5 / FZ-37A 6.9 kV Switchgear Area, South Turbine Bldg. Elevation 15 foot
- ETN-4 / FZ-73A Upper Electrical Tunnel - Penetration Area

Inspection of these fire areas/zones fulfilled the inspection program requirement to inspect a minimum of three samples.

The inspection team evaluated Entergy's fire protection program (FPP) against applicable requirements which included Operating License Condition 2.H, Technical Requirements Manual, NRC Safety Evaluation Reports (SERs), 10 CFR 50.48, and 10 CFR 50, Appendix R. The team also reviewed related documents that included the fire protection plan, fire hazards analysis (FHA), and post-fire safe shutdown analyses.

IP Unit 2 and Unit 3 mitigating strategies for responding to large fires and explosions were evaluated during the Unit 2 Triennial Fire Protection Inspection in January and February 2013 and were documented in NRC Inspection Report 05000247/2013007 and 05000286/2013007. Those inspections completed the inspection sample requirements for the triennial fire inspection procedure cycle.

Specific documents reviewed by the team are listed in the attachment to this report.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection (IP 71111.05T)

.01 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the FHA, post-fire safe shutdown analyses, and supporting drawings and documents to verify whether the safe shutdown capabilities were properly protected from fire damage. The team evaluated equipment and cable separation to determine

whether the applicable separation requirements of Section III.G of 10 CFR 50, Appendix R, and the IP3 design and licensing bases were maintained for the credited safe shutdown equipment and their supporting power, control, and instrumentation cables. The team's review included an assessment of the adequacy of the selected systems for reactor pressure control, reactivity control, reactor coolant makeup, decay heat removal, process monitoring, and associated support system functions.

b. Findings

No findings were identified.

.02 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to evaluate whether the material conditions of the fire area boundaries were adequate for the fire hazards in the area. The team compared the fire area boundaries, including walls, ceilings, floors, fire doors, fire dampers, penetration seals, electrical raceway and conduit fire barriers, and redundant equipment fire barriers and radiant energy heat barriers to design and licensing basis requirements, industry standards, and the IP3 FPP, as approved by the NRC, to identify any potential degradation or non-conformances.

The team reviewed selected engineering evaluations, installation and repair work orders, and qualification records for a sample of penetration seals to determine whether the fill material was properly installed and whether the as-left configuration satisfied design requirements for the intended fire rating. The team also reviewed similar records for selected fire protection wraps to verify whether the material and configuration was appropriate for the required fire rating and conformed to the engineering design.

The team also reviewed recent inspection and functional test records for fire dampers, and the inspection records for penetration seals and fire barriers, to verify whether the inspection and testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified. In addition, the team reviewed recent test results for the carbon dioxide (CO_2) fire damper functionality tests for the 32 EDG room to verify whether the testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

b. Findings

No findings were identified.

.03 Active Fire Protection

a. Inspection Scope

The team evaluated manual and automatic fire suppression and detection systems in the selected fire areas to determine whether they were installed, tested, maintained, and operated in accordance with NRC requirements, National Fire Protection Association (NFPA) codes of record, and the IP3 FPP, as approved by the NRC. The team also

assessed whether the suppression systems capabilities were adequate to control and/or extinguish fires associated with the hazards in the selected areas.

The team reviewed the as-built capability of the fire water supply system to verify whether the design and licensing basis and NFPA code of record requirements were satisfied, and to assess whether those capabilities were adequate for the hazards involved. The team reviewed the fire water system hydraulic analyses to assess the adequacy of a single fire water pump to supply the largest single hydraulic load on the fire water system plus concurrent fire hose usage. The team evaluated the fire pump performance tests to assess the adequacy of the test acceptance criteria for pump minimum discharge pressure at the required flow rate, to verify whether the criteria was adequate to ensure that the design basis and hydraulic analysis requirements were satisfied. The team also evaluated the underground fire loop flow tests to verify whether the tests adequately demonstrated that the flow distribution circuits were able to meet design basis requirements. In addition, the team reviewed recent pump and loop flow test results to verify whether the testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

The team reviewed initial discharge testing, design specifications, and routine functional testing for the CO_2 suppression system for the 32 EDG room. The team walked down accessible portions of the CO_2 system, including storage tanks and supply systems, to independently assess the material condition, operational lineup, and availability of the systems. The team also reviewed and walked down the associated fire fighting strategies and CO_2 system operating procedures.

The team walked down accessible portions of the detection and water suppression systems in the selected areas and major portions of the fire water supply system, including motor and diesel driven fire pumps and fire water storage tanks, interviewed system and program engineers, and reviewed selected condition reports (CRs) to independently assess the material condition of the systems and components. In addition, the team reviewed recent test results for the fire detection and suppression systems for the selected fire areas to verify whether the testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. The team also reviewed Entergy's fire fighting strategies (i.e., 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 capability. The team independently inspected the fire brigade equipment, including personnel protective gear (e.g., turnout gear) and smoke removal equipment, to determine operational readiness for fire fighting. In addition, the team reviewed Entergy's fire brigade equipment inventory and inspection procedure and recent inspection and inventory results to verify whether adequate equipment was available, and whether any potential material deficiencies were identified.

b. Findings

No findings were identified.

.04 Protection from Damage from Fire Suppression Activities

a. Inspection Scope

The team performed document reviews and plant walkdowns to determine whether redundant trains of systems required for hot shutdown, located in the same or adjacent fire areas, were not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team evaluated whether:

- A fire in one of the selected fire areas would not release smoke, heat, or hot gases that could cause unintended activation of suppression systems in adjacent fire areas which could potentially damage all redundant safe shutdown trains; or

- A fire suppression system rupture, inadvertent actuation, or actuation due to a fire, in one of the selected fire areas, could not directly damage all redundant trains (e.g. sprinkler caused flooding of other than the locally affected train); and

- Adequate drainage was provided in areas protected by water suppression systems.

b. Findings

No findings were identified.

.05 Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings (P&IDs), electrical drawings, the Updated Final Safety Analysis Report (UFSAR), and other supporting documents for the selected fire areas to verify whether Entergy had properly identified the systems and components necessary to achieve and maintain post-fire safe shutdown conditions. The team evaluated selected systems and components credited by the safe shutdown analysis for reactor pressure control, reactivity control, reactor coolant makeup, decay heat removal, process monitoring, and support system functions to assess the adequacy of Entergy's alternative shutdown methodology. The team also assessed whether alternative post-fire shutdown could be performed both with and without the availability of off-site power. The team walked down selected plant configurations to verify whether they were consistent with the assumptions and descriptions in the safe shutdown and fire hazards analyses. In addition, the team evaluated whether the systems and components credited for use during post-fire safe shutdown would remain free from fire damage.

The team reviewed the training program for licensed and non-licensed operators to verify whether it included alternative shutdown capability. The team also verified whether personnel required for post-fire safe shutdown, using either the normal or alternative shutdown methods, were trained and available on-site 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 (i.e., a procedure tabletop) to assess the adequacy of implementation and human factors within the procedures. The team also evaluated the time required to perform specific actions to verify whether operators could reasonably be expected to perform those actions within sufficient time to maintain plant parameters within specified limits.

Specific procedures reviewed for normal and alternative post-fire shutdown included:

- 3-ONOP-FP-1, Plant Fires, Rev. 34
- 3-AOP-SSD-1, Control Room Inaccessibility Safe Shutdown Control, Rev. 17

The team reviewed selected operator manual actions to verify whether they had been properly reviewed and approved and whether the actions could be implemented in accordance with plant 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 and isolation capability, and instrumentation and control functions, to evaluate whether the tests were adequate to ensure the functionality of the alternative shutdown capability.

b. Findings

No findings were identified.

.06 Circuit Analysis

a. Inspection Scope

The team reviewed Entergy's post-fire safe shutdown analysis for the selected fire areas to determine whether the analysis identified both required and associated electrical circuits and cables for the systems and components necessary to achieve and maintain safe shutdown. The team reviewed electrical schematics and cable routing data for power, control, and instrument cables associated with selected components. Specifically, the team evaluated the selected circuits and cables to determine whether they were (a) adequately protected from potential fire damage, or (b) analyzed to show that fire-induced faults (e.g., hot shorts, open circuits, and shorts to ground) would not prevent safe shutdown, or (c) analyzed to show that potential damage could be mitigated with approved operator manual actions, in order to verify whether fire-induced faults could adversely impact safe shutdown capabilities. The team's evaluations considered credible fire scenarios, cable insulation attributes, cable failure modes, cable routing, and common power supply or electrical bus configurations.

In addition, the team reviewed cable raceway drawings and cable routing databases for a sample of components required for post-fire safe shutdown to determine whether those cables were routed as described in the safe shutdown analysis. The team also reviewed equipment important to safe shutdown, but not part of the success path, to assess whether Entergy's safe shutdown methodologies were appropriate, conformed to design and licensing basis requirements, and appropriately considered the guidance in NRC Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," revision 2.

Cable failure modes were reviewed for the following components:

- 31 Auxiliary Boiler Feedwater Pump
- Steam Generator Level Transmitter, LT-437A
- Atmospheric Dump Valve, PCV-1134
- Reactor Coolant System Temperature Indicator, TE-443A
- Reactor Coolant Pressure Indicator, PT-403
- Auxiliary Spray Valve, PCV-455B
- 33 Component Cooling Water Pump

The team reviewed a sample of circuit breaker over-current protection coordination studies to determine whether equipment needed for post-fire safe shutdown activities could be adversely affected due to a lack of coordination that could result in a common power supply or common electrical bus concern. The team also evaluated whether coordination studies appropriately considered multiple faults due to fire. In addition, the team reviewed a sample of circuit breaker maintenance records, for components required for safe shutdown, to determine whether the breakers were properly maintained.

The team assessed the transfer of control from the control room to the alternative shutdown locations to determine whether it would be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

b. Findings

No findings were identified.

.07 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis, and associated documents to verify whether an adequate method of communications would be available to plant operators following a fire. Specifically, the team evaluated whether plant telephones, page systems, sound powered phones, and portable radios would be available for use and were properly maintained. During this review, the team considered the effects of ambient noise levels, clarity of reception, reliability, and coverage patterns. The team inspected selected emergency storage lockers to independently verify whether portable communication equipment was available for the fire brigade and plant operators.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The team walked down the emergency lights in the selected fire areas to independently evaluate the placement and coverage areas of the lights. The team assessed whether the lights provided adequate illumination on local equipment and instrumentation required for post-fire safe shutdown, to ensure local operations could be reliably performed under expected post-fire conditions. Emergency light placement was also evaluated to determine adequate illumination of local area access and egress pathways.

The team verified whether the emergency light batteries were rated for at least an eight hour capacity. Preventive maintenance procedures, completed surveillance tests, and battery replacement practices were also reviewed to evaluate whether the emergency lighting had been maintained in a manner that would ensure reliable operation.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed Entergy's dedicated repair procedures, for components which might be damaged by fire and were required to achieve post-fire cold shutdown. The team evaluated selected cold shutdown repairs to determine whether they could be achieved within the time frames assumed in the design and licensing bases. In addition, the team verified whether the necessary repair equipment, tools, and materials (e.g., pre-cut cables with prepared attachment lugs) were available and accessible on site.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

The team verified whether 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, pumps, valves, or electrical devices providing safe shutdown functions or capabilities). The team evaluated whether the short term compensatory measures adequately compensated for the degraded function or feature until appropriate corrective action could be taken and whether Entergy was effective in returning the equipment to service in a reasonable period of time.

The team noted that for the selected fire areas which were designated as 10 CFR 50 Appendix R, Section III.G.2 areas, there were no compensatory measures in the form of operator manual actions.

b. Findings

No findings were identified.

.11 Review and Documentation of FPP Changes

a. Inspection Scope

The team reviewed recent changes to the approved fire protection program to assess whether those changes had an adverse effect on the ability to safely shutdown.

b. Findings

No findings were identified.

.12 Control of Transient Combustibles and Ignition Sources

a. Inspection Scope

The team reviewed Entergy's 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 reviewed to assess the adequacy of Entergy's fire protection program administrative controls. The team performed plant walkdowns to independently verify whether transient combustibles and ignition sources were being properly controlled in accordance with the administrative controls.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

The team reviewed a sample of condition reports associated with the fire protection program, post-fire safe shutdown issues, and mitigation strategy issues to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with these areas and whether the planned or completed corrective actions were appropriate. The condition reports reviewed are listed in the attachment.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

The team presented the inspection results to Mr. Don Meyer, acting Site Vice President, and other members of Entergy's staff on May 22, 2014. The team verified that this report does not contain proprietary information.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

G. Dahl, Licensing Specialist
J. Cottam, System Engineer
K. Elliot, Safe Shutdown Engineer
S. Bianco, Fire Marshall
C. Wilson, Fire Protection System Engineer
F. Bloise, Electrical Design Engineer
D. Powell, Senior Reactor Operator

NRC Personnel

J. Stewart, Senior Resident Inspector, Indian Point
A. Patel, Resident Inspector, Indian Point
G. Newman, Resident Inspector, Indian Point
D. Frumkin, Fire Protection Branch, Risk Assessment Division, Nuclear Reactor Regulation (NRR)

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Opened and Closed

None.

Closed

None.

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing and Design Basis Documents

AP-64.1, Fire Protection & Appendix R Systems & Components Governed by TRM, Rev. 4
DBD 321, IP3 Fire Protection System Design Basis Document, Rev. 4
IP3-ANAL-FP-01503, Safe Shutdown Analysis, Rev. 3
SEP-FPP-IP-001, Fire Protection Program Plan, Rev. 3
Technical Requirements Manual, Section 3.7A, Fire Protection Systems, Rev. 11
UFSAR Section 9.6.2, Fire Protection, Rev. 05-2013
UFSAR Section 9.6.5, Plant Communication System, Rev. 05-2013
IP3-ANAL-FP-02143, Fire Hazards Analysis Report, Rev. 5

Calculations, Analysis, and Engineering Evaluations

0247-09-0013.034, Fire Probabilistic Risk Assessment Multiple Spurious Operations Report, Rev. 0
CN-SEE-03-53, RHR Cooldown, Rev. 0
EN-FP-S-001-Multi, Appendix R Emergency Lighting Units, Rev. 1
IP3-ANAL-FP-01050, Fire Door Evaluation, 7/15/86
IP3-ANAL-FP-01325, Fire Damper Assembly Analysis, Rev. 0
IP3-ANAL-FP-01503, Appendix R Sections III.G & III.L Safe Shutdown Analysis Report, Rev. 3
IP3-CALC-FP-02046, Electric Tunnel Preaction Water Spray System upgrade, Rev. 0
IP3-CALC-FP-0338, Switchgear Room CO_2 System Performance with Fire Damper 9 Failure, Rev. 0
IP3-CALC-MULTI-382, N2 Backup to AFW Valves and Atmospheric Dump Valves, Rev. 5
IP3-RFT-FP-03747, Smoke Infiltration Impact on Safe Shutdown, Rev. 0
IP3-RPT-FP-00962, NFPA Codes of Record for NRPA Code Compliance review, Rev. 0
IP3-RPT-FP-02211, Compliance to NRC Branch Technical Position 9.5-1 Appendix A, Rev. 0
IP-CALC-04-00766, IP3 Steam Generator Boil-Dry Analysis with RETRAN-3D, Rev. 2
IP-CALC-04-01171, Fire Water System Hydraulic Analysis, rev. 0
IP-CALC-06-00029, Appendix R Cooldown to RHR Initiation using RETRAN-3D, Rev. 2
IP-RPT-12-00022, Inaccessible Fire Barrier Penetration Seals, Rev. 0
MOD 95-3-237 COMM, Control Room Habitat and Communication Upgrade, Rev. 0
P1722-RPT-001, IP3 Associated Circuits Assessment for RIS 2004-03, Rev. 0
P2181-01-001, IP3 Regulatory Guide 1.189 Support Project, Rev. 1
Vectra 0090-00066-C-004, IP3 Fire Suppression Effects Analysis, Rev. 0

Drawings and Wiring Diagrams

113E700, Sht. 26A, Panel FBF Wiring Diagram, Rev. 12
113E700, Sht. 29, Panel FBF & FBR Terminal Board Wiring Diagram, Rev. 34
500B971, Sht. 46, Elementary Wiring Diagram Component Cooling Pump 33 Electrical, Rev. 10
9321-D-92643, Fire Water Motor & Engine Driven Pump Controller Wiring Diagram, Rev. 5
9321-F-31673, Wiring Diagram 480V Switchgear Miscellaneous, Rev. 28
9321-F-31993, Wiring Diagram-118 VAC Instrument Bus Panels 31 and 32, Rev. 49
9321-F-32003, Wiring Diagram 118 VAC Instrument Bus 33 and 334, Rev. 37
9321-F-32273, Wiring Diagram Supervisory Control Panel SC, Rev. 41
9321-F-32683, Wiring Diagram Flight Control Panel FBF and FBR, Rev. 35
9321-F-32723, Wiring Diagram Flight Control Panel FCF and FCR, Rev. 28
9321-F-33413, Wiring Diagram, Instrument Power Cabinet POE, Rev. 5

9321-F-33493, Wiring Diagram Miscellaneous Power and Distribution Panel, Rev. 6
9321-F-33553, Wiring Diagram and Miscellaneous Details, Instrument Power Cabinet KH-4, Steam Generator and Press Instrument Isolation, Rev. 7
9321-F-33583, Schematic Diagrams for Instrument Power Cabinet KH4, Rev. 5
9321-F-42243, Control Bldg. Fire Damper Details & Schedule, Rev. 5
9321-F-42283, Fire Damper Details & Schedule, Rev. 4
9321-H-39913, Sht. 12, External Connection Diagram RPS. Rack 12, (B-10), Rev. 9
9321-H-39913, Sht. 13, External Connection Diagram RPS. Rack 13 (B-9), Rev. 5
9321-H-39913, Sht. 23, External Connection Diagram, RAS. Rack 23A (A-6), Rev. 9
9321-H-39913, Sht. 25, External Connection Diagram RCS. Rack 25, (B-4), Rev. 8
9321-H-39923, Sht. 41, Interconnection Wiring Diagram RPS Rack 13 (B-9), Rev. 4
9321-H-39923, Sht. 54, Interconnection Wiring Diagram RCS Rack 17 (B-6), Rev. 2
9321-H-39923, Sht. 82, Interconnection Wiring Diagram RAS. Rack 23 (A-6), Rev. 7
9321-H-39923, Sht. 84, Interconnection Wiring Diagram RAS. Rack 23 (A-6), Rev. 6
9321-H-39923, Sht. 96, Interconnection Wiring Diagram RCS Rack 25 (B-4), Rev. 3
9321-H-96523, S/G Atmospheric Dump Valves PCV-1134, PCV-1135, PCV-1136, and PCV-1137 Wiring Diagram, Rev. 0
9321-LD-72373, Sht. 3, 31 Steam Generator Atmospheric Steam Dump Loop P-419 Diagram, Rev. 1
9321-LD-72473, Sht. 7, Pressurizer Pressure Channel 1 Loop P-455 Diagram, Rev. 0
9321-LD-72473, Sht. 7, Pressurizer Pressure Channel 1 Loop P-455 Diagram, Rev. 0
9321-LD-72473, Sht. 7G, Pressurizer Pressure Channel 1 Loop P-455 Diagram, Rev. 0
9321-LL-31183, Sht. 10, Schematic Diagram 480V Switchgear 32, Rev. 12
9321-LL-31183, Sht. 10A, Schematic Diagram 480V Switchgear 32, Rev. 4
9321-LL-31183, Sht. 11, Schematic Diagram 480V Switchgear 32, Rev. 8
9321-LL-31183, Sht. 11A, Schematic Diagram 480V Switchgear 32, Rev. 3
9321-LL-31183, Sht. 2, Schematic Diagram 480V Switchgear 32, Rev. 14
9321-LL-31183, Sht. 4, Schematic Diagram 480V Switchgear 32, Rev. 22
9321-LL-31183, Sht. 41A, Schematic Diagram 480V Switchgear 32, Rev. 4
9321-LL-31183, Sht. 4A, Schematic Diagram 480V Switchgear 32, Rev. 4
9321-LL-31183, Sht. 5, Schematic Diagram 480V Switchgear 32, Rev. 23
9321-LL-31183, Sht. 5A, Schematic Diagram 480V Switchgear 32, Rev. 8
9321-LL-31313, Sht. 44A, SIG Atmospheric Dump Valves PCV-1134, PCV-1135, PCV-1136, and PCV-1137 Block Diagram, Rev. 0
9321-LL-31313, SIG Atmospheric Dump Valves PCV-1134, PCV-1135, PCV-1136, and PCV-1137 Schematic Diagram, Rev. 1
9321-M-40953, Sht. 26, Fire Barrier Penetration Details, Rev. 3
9321-M-40953, Sht. 63, Fire Barrier Penetration Details, Rev. 7
9321-M-40953, Sht. 69, Fire Barrier Penetration Details, Rev. 3
IP3V-497-0001, Penetration Seal Details, Rev. 1
IP3V-498-0002, Penetration Seal Details, Rev. 2
IP3V-498-0003, Penetration Seal Details, Rev. 2

Piping and Instrumentation Diagrams

9321-F-20183, Condensate & Boiler Feed Pump Suction Flow Diagram, Rev. 62
9321-F-24403, Fire Protection CO_2 and Halon P&ID, Rev. 10
9321-F-27353, Safety Injection System Flow Diagram, Rev. 42
9321-F-27363, Chemical & Volume Control System Flow Diagram, Rev. 52
9321-F-40009, Sht. 1, Fire Area/Zone Barrier Diagram, Rev. 5
9321-F-40009, Sht. 2, Fire Area/Zone Barrier Diagram, Rev. 4

9321-F-40009, Sht. 3, Fire Area/Zone Barrier Diagram, Rev. 6
9321-F-40063, Yard Fire Protection Piping Plan, Rev. 21
9321-F-40903, Fire Protection System P&ID, Rev. 30
9321-F-40913, Sht. 1, Fire Protection System P&ID, Rev. 29
9321-F-40913, Sht. 2, Fire Protection System P&ID, Rev. 5
9321-F-41793, Yard Fire Protection Piping Plan, Rev. 8

Fire Protection Evaluations of Modifications and Design Changes

EC-33126, Fire Protection Program Review (EN-DC-128 Attachment 9.1), performed 5/2/12
EC-36675, Detailed Safe Shutdown Review (EN-DC-128 Attachment 9.3), performed 9/6/12
EC-36675, Fire Protection Program Review (EN-DC-128 Attachment 9.1), performed 9/6/12
EC-37290, Detailed Safe Shutdown Review (EN-DC-128 Attachment 9.3), performed 6/12/12
EC-37290, Fire Protection Program Review (EN-DC-128 Attachment 9.1), performed 6/12/12
EC-40329, Detailed Fire Protection Review (EN-DC-128 Attachment 9.2), performed 1/7/13
EC-40329, Detailed Safe Shutdown Review (EN-DC-128 Attachment 9.3), performed 1/7/13
EC-40329, Fire Protection Program Review (EN-DC-128 Attachment 9.1), performed 1/7/13
IP-RPT-11-00011, Evaluation of Fire Separation between Cable Spreading Rom and Control Room within Fire Area CTL-3, Rev. 0
IP-RPT-12-00008, Disposition of Operator Manual Actions (OMA) for Fire Analysis Area ETN-4(1), Rev. 0
IP-RPT-12-00047, Disposition of OMAs for Fire Analysis Areas ETN-4(1), ETN-4(3), and YARD-7, Rev. 1
IP-RPT-13-00013, Evaluation of EC-40329 Electrical Raceway Fire Barrier System, Rev. 0

Quality Assurance Audits and Self Assessments

CR-LO-IP3LO-2010-00212, Post Fire Safe Shutdown Capability Self Assessment, 2/28/11
QA-9-2014-IP-1, Fire Protection Program Audit, 2/21/14

System Health Reports

480V Electrical System Health Report, 4th Quarter 2013
Fire Protection Program Health Report, 3rd Quarter 2013
Fire Protection Program Health Report, 4th Quarter 2013

Procedures

0-ELC-420-FIR, Appendix R Emergency Light Unit Inspection, Battery Replacement, & Test, Rev. 5
0-FIR-001-BAR, Installation and Repair of Fire Barrier Penetration Seal Designs, Rev. 0
0-PT-M002, Alternate Safe Shutdown Equipment Inventory and Inspection, Rev. 12
0-PT-Q001, Alternate Safe Shutdown Equipment Inventory and Inspection, Rev. 11
3-AOP-SSD-1, Control Room Inaccessibility Safe Shutdown Control, Rev. 17
3-BKR-017-ELC, Current Sensor and/or Trip Unit Replacement, Rev. 12
3-E-0, Reactor Trip or Safety Injection, Rev. 4
3-ELC-004-FIR, Appendix R Repair, Rev, 12
3-ONOP-FP-1, Plant Fires, Rev. 33 & 34
3-PC-OL01B, RCS Wide Range Temperature Instrument Calibration and Transfer Switch Check, Rev. 9
3-PC-R03B.4, Pressurizer Level & Pressurizer Pressure Appendix R Switch Check, Rev. 4

3-PT-A40, Intake Structure Fire Detection System Functional, Rev. 0
3-PT-M099, Safe Shutdown Instrument Channel Check and Miscellaneous Equipment Surveillances, Rev. 7
3-PT-Q104, Appendix R Alternate Safe Shutdown Instrument Channel Checks, Rev. 5
3-PT-R084, Fire Pump Functional Test, Rev. 19
3-PT-R150, Test of Appendix R Alternate Feed to Component Cooling Pump 32, Rev. 3
3-PT-R152, Operability Test of Safe Shutdown Instrumentation, Rev. 8
3-PT-R98B, Appendix R Diesel Generator Halon Functional, Rev. 6
3-PT-SA070, Fire Door Inspection, Rev. 5
3-SOP-EL-012, Operations of the Alternate Safe Shutdown Equipment, Rev. 18
3-SOP-EL-013, Appendix R Diesel Generator Operation, Rev. 30
3-SOP-ESP-001, Local Equipment Operation and Contingency Actions, Rev. 24
EN-DC-127, Control of Hot Work and Ignition Sources, Rev. 13
EN-DC-128, Fire Protection Impact Reviews, Rev. 7
EN-DC-161, Control of Combustibles, Rev. 10
EN-OE-100, Operating Experience Program, Rev. 20
OAP-115, Operations Commitments and Policy Details, Rev. 18
SEP-FPP-IP-002, Fire Watch Program, Rev. 1

Fire Fighting Strategies (i.e., Pre-Fire Plans)

PFP-002, IP3 Overall Site Plan, Rev. 6
PFP-353, Control Room & Control Building Fire Pre-plan, Rev. 12
PFP-354, Diesel Generator Rooms, Rev. 0
PFP-358, Upper Electrical Penetration Area, Rev. 11
PFP-362A, 6.9kV Switchgear Area - 15 Foot Turbine Building, Rev. 12
PFP-365, AFW Pump Room, Rev. 11

Fire Brigade Training

EN-TQ-125, Fire Brigade Drills, Rev. 2
I0LP-OPS-FBT002, Fire Brigade Leadership, Rev. 2013
I0LP-OPS-FBT003, Fire Brigade, Rev. 2013

Fire Brigade Drills, and Critiques

IP2 Auxiliary Boiler Feed Pump Room, 4/17/14
IP2 H_2 Seal Oil Area, 10/23/13
IP2 Main Generator Mezzanine H_2 Area, 2/9/14
IP2 Turbine Building MCC 23, 2/5/14
IP3 52 Foot RAMS Waste Accumulation Area, 4/13/14
IP3 Dirty Oil Storage Tank, 1/15/14
IP3 Main Generator Mezzanine, 4/28/14
Maintenance Training Center, 4/7/14

Transient Combustible Permits and Evaluations

2013-047, EN-DC-161 Attachment 9.11, performed 1/22/14
2014-006, EN-DC-161 Attachment 9.11, performed 1/6/14
2014-009, EN-DC-161 Attachment 9.11, performed 1/30/14
2014-018, EN-DC-161 Attachment 9.11, performed 3/12/14

2014-019, EN-DC-161 Attachment 9.11, performed 4/1/14

Hot Work and Ignition Source Permits

WO 00358804, EN-DC-127 Attachment 9.1, performed 11/11/13
WO 00358804, EN-DC-127 Attachment 9.1, performed 11/18/13
WO 51272700, EN-DC-127 Attachment 9.1, performed 10/11/13
WO 51272700, EN-DC-127 Attachment 9.1, performed 10/2/13
WO 52286425, EN-DC-127 Attachment 9.1, performed 12/9/13

Completed Tests and Surveillances

0-PT-M001, Fire Brigade Equipment Inventory & Inspection, performed 1/12/14 and 3/15/14
0-PT-M006, Respiratory Protection Equipment Inspection, performed 3/1/14
3-PT-2Y005, CO_2 System Test for EDG Rooms, performed 1/9/13 and 1/10/13
3-PT-A013, Electrical Tunnel Heat Detector & Pre-Action Water Spray Test, performed 6/18/13
3-PT-A14, EDG Water Spray System, performed 4/15/14
3-PT-A41, EDG Room Fire Detection System Test, performed 9/10/13
3-PT-M042A, Electric Fire Pump Test, performed 1/29/13 and 2/16/14
3-PT-M042B, Diesel Fire Pump Test, performed 2/16/14 and 3/16/14
3-PT-R084, Fire Pump Functional Test, performed 9/1/10 and 9/14/12
3-PT-R095, Electrical Tunnel Fire Damper Functional, performed 1/9/12
3-PT-R100, Fire Barrier Penetration Seal Inspections - Period A, performed 4/27/12
3-PT-R102, Fire Barrier Wrap & Radiant Energy Shield Inspection, performed 3/6/13
3-PT-R113, Fire Water System Flush & Loop Flow Test, performed 11/24/09 & 5/21/13
3-PT-SA13, Fire Protection Smoke Detector Test, performed 1/13/14
3-PT-SA27C, Wet Pipe Sprinkler Systems #5,6, and 7 Functional, performed 12/12/13
3-PT-SA27E, AFW Pump Room Wet Pipe Sprinkler Systems Functional, performed 12/30/13
ENG-10, Operational & Startup Test for CO_2 Fire Protection System, performed 11/9/80

Condition Reports (* denotes NRC identified during this inspection)

OE-NOE-2009-516	IP3-2012-00096	IP3-2013-02806	IP3-2014-00881*
WT-WIIPC-2013-147	IP3-2012-01123	IP3-2013-02839	IP3-2014-00912
IP2-2009-00099	IP3-2012-01222	IP3-2013-03872	IP3-2014-00913
IP2-2012-00504	IP3-2012-01364	IP3-2013-03944	IP3-2014-00914
IP2-2012-00990	IP3-2012-01385	IP3-2013-04380	IP3-2014-00956*
IP2-2012-06397	IP3-2012-01578	IP3-2013-04803	IP3-2014-00970*
IP2-2013-00457	IP3-2012-02336	IP3-2013-04927	IP3-2014-00974*
IP3-2011-02432	IP3-2012-03350	IP3-2014-00183	IP3-2014-01004*
IP3-2011-02666	IP3-2012-03381	IP3-2014-00258	IP3-2014-01071*
IP3-2011-02713	IP3-2012-03518	IP3-2014-00274	IP3-2014-01098*
IP3-2011-02750	IP3-2012-04046	IP3-2014-00283	IP3-2014-01105*
IP3-2011-04038	IP3-2012-04063	IP3-2014-00369	IP3-2014-01112*
IP3-2011-04382	IP3-2013-00395	IP3-2014-00516	IP3-2014-01114*
IP3-2011-04570	IP3-2013-00440	IP3-2014-00605	IP3-2014-01122*
IP3-2011-05078	IP3-2013-00716	IP3-2014-00872*	IP3-2014-01139*
IP3-2011-05108	IP3-2013-01208	IP3-2014-00875*	IP3-2014-03052*
IP3-2011-05294	IP3-2013-02599	IP3-2014-00879*	

Work Orders

00249483	00373114	52357932	52529489
00292347	04305651	52365306	52544401
00314380	04476230	52382090	52547488
00329486	50074144	52382629	
00332530	52353860	52522328	
00346701	52355254	52527712	

Vendor Manuals

523-100047222, Model FD-2 Fire Pump Controller, dated 3/3/92

Industry Standards

Fire Protection Handbook, Section 11, Chapter 5, Test of Water Supplies, 14th Edition
NFPA 20-1976, Centrifugal Fire Pumps

Miscellaneous Documents

IP Fire Impairment Log, 4/1/14
IP3 Fuel Oil Delivery Onsite Analysis, Sample Dates 12/16/13 to 4/18/14
NRC Information Notice (IN) 2009-02, Biodiesel Fuel Oil Adverse Impact to Diesel Engine Performance, 2/23/09
NRC IN 2009-29, Potential Failure of Fire Water Supply Pumps to Automatically Start Due to a Fire, 11/24/09
PMQR 50071879, 2 Year Replace Battery in ELU EBR-6-EDG, 3/28/12
PMQR 50073044, 2 Year Replace Battery in ELU EBR-17-ABFP, 3/28/12

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
AC	Alternating Current
AFW	Auxiliary Feedwater
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
CR	Condition Report
EDG	Emergency Diesel Generator
Entergy	Entergy Nuclear Northeast
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
IN	[NRC] Information Notice
IP	[NRC] Inspection Procedure
IP3	Indian Point Power Station, Unit 3
IPEEE	Individual Plant Examination of External Events
IR	[NRC] Inspection Report
LT	Level Transmitter
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
NRR	[NRC] Nuclear Reactor Regulation
OMA	Operator Manual Action
P&ID	Piping and Instrumentation Drawing
PARS	Publicly Available Records System
PCV	Pressure Control Valve
PT	Pressure Transmitter
RCS	Reactor Coolant System
TE	Temperature Element
TRM	Technical Requirements Manual
SER	[NRC] Safety Evaluation Report
UFSAR	Updated Final Safety Analysis Report
VAC	Volts Alternating Current