June 20, 2007

Mr. Fred Dacimo Site Vice President Entergy Nuclear Operations, Inc. Indian Point Energy Center 450 Broadway, GSB P.O. Box 249 Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT UNIT 2 - NRC TRIENNIAL FIRE PROTECTION INSPECTION

REPORT 05000247/2007006

Dear Mr. Dacimo:

On May 17, 2007, the NRC completed a triennial fire protection team inspection at your Indian Point Nuclear Generating Unit 2. The enclosed report documents the inspection results, which were discussed at an exit meeting on May 17, 2007, with you 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 personnel.

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

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

Sincerely,

/RA/

John F. Rogge, Chief Engineering Branch 3 Division of Reactor Safety June 20, 2007

Mr. Fred Dacimo Site Vice President Entergy Nuclear Operations, Inc. Indian Point Energy Center 450 Broadway, GSB P.O. Box 249 Buchanan, NY 10511-0249

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Sincerely.

/RA/

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

SUNSI Review Complete: JFR (Reviewer's Initials)

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Docket No. 50-247 License No. DPR-26

Enclosure: NRC Inspection Report 05000247/2007006

#### cc w/encl:

G. J. Taylor, Chief Executive Officer, Entergy Operations

M. Kansler, President, Entergy Nuclear Operations, Inc.

J. T. Herron, Senior Vice President for Operations

M. Balduzzi, Senior Vice President, Northeastern Regional Operations

W. Campbell, Senior Vice President of Engineering and Technical Services

C. Schwarz, Vice President, Operations Support (ENO)

K. Polson, General Manager Operations

O. Limpias, Vice President, Engineering (ENO)

J. McCann, Director, Licensing (ENO)

C. D. Faison, Manager, Licensing (ENO)

R. Patch, Director of Oversight (ENO)

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P. Conroy, Manager, Licensing

T. C. McCullough, Assistant General Counsel, Entergy Nuclear Operations, Inc.

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P. Eddy, Electric Division, New York State Department of Public Service

C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law

D. O'Neill, Mayor, Village of Buchanan

J. G. Testa, Mayor, City of Peekskill

R. Albanese, Four County Coordinator

S. Lousteau, Treasury Department, Entergy Services, Inc.

Chairman, Standing Committee on Energy, NYS Assembly

Chairman, Standing Committee on Environmental Conservation, NYS Assembly

Chairman, Committee on Corporations, Authorities, and Commissions

M. Slobodien, Director, Emergency Planning

B. Brandenburg, Assistant General Counsel

Assemblywoman Sandra Galef, NYS Assembly

County Clerk, Westchester County Legislature

A. Spano, Westchester County Executive

R. Bondi, Putnam County Executive

C. Vanderhoef, Rockland County Executive

E. A. Diana, Orange County Executive

T. Judson, Central NY Citizens Awareness Network

M. Elie, Citizens Awareness Network

D. Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists

Public Citizen's Critical Mass Energy Project

M. Mariotte, Nuclear Information & Resources Service

F. Zalcman, Pace Law School, Energy Project

L. Puglisi, Supervisor, Town of Cortlandt

Congressman John Hall

Congresswoman Nita Lowey

Senator Hillary Rodham Clinton

Senator Charles Schumer

G. Shapiro, Senator Clinton's Staff

J. Riccio, Greenpeace

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- P. Musegaas, Riverkeeper, Inc.
- M. Kaplowitz, Chairman of County Environment & Health Committee
- A. Reynolds, Environmental Advocates
- M. Jacobs, Director, Longview School
- D. Katz, Executive Director, Citizens Awareness Network
- S. Tanzer, The Nuclear Control Institute
- K. Coplan, Pace Environmental Litigation Clinic
- M. Jacobs, IPSEC
- D. C. Poole, PWR SRC Consultant
- W. Russell, PWR SRC Consultant
- W. Little, Associate Attorney, NYSDEC
- M. J. Greene, Clearwater, Inc.
- R. Christman, Manager Training and Development
- J. Spath, New York State Energy Research, SLO Designee
- A. J. Kremer, New York Affordable Reliable Electricity Alliance (NY AREA)

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- R. Fuhrmeister, DRP

# U.S. NUCLEAR REGULATORY COMMISSION REGION I

Docket No. 50-247

License No. DPR-26

Report No. 05000247/2007006

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 2

Location: 450 Broadway, GSB

Buchanan, NY 10511-0249

Dates: April 23, 2007 through April 27, 2007 and

May 14, 2007 through May 18, 2007

Inspectors: R. Fuhrmeister, Senior Project Engineer, DRP

L. Cheung, Senior Reactor Inspector, DRS

M. Patel, Reactor Inspector, DRS K. Diederich, Reactor Inspector, DRS

Approved by: John F. Rogge, Chief

Engineering Branch 3 Division of Reactor Safety

#### **SUMMARY OF FINDINGS**

IR 05000247/2007006; 04/23 - 05/18/2007; Indian Point Nuclear Generating Unit 2; Triennial Fire Protection Team Inspection.

The report covered a two-week triennial fire protection team inspection by a Region I senior project inspector and three Region I 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 3, dated July 2000.

# A. NRC-Identified Findings

No findings of significance were identified.

# B. <u>Licensee-Identified Violations</u>

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 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 Indian Point Energy Nuclear Generating Unit 2 (IP2). The following fire areas (FAs) and fire zones (FZs) were selected for detailed review based on risk insights from the IP2 Individual Plant Examination (IPE) and Individual Plant Examination of External Events (IPEEE):

- Fire Area P, FZ-1
- Fire Area A, FZ-1A
- Fire Area A, FZ-11
- Fire Area I, FZ-22/63A

The inspection team evaluated Entergy's fire protection program (FPP) against applicable requirements which included facility operating license condition 2.K, NRC safety evaluation reports, 10 CFR 50.48 and 10 CFR 50, Appendix R. The team also reviewed related documents that included the Updated Final Safety Analysis Report (UFSAR), the fire hazards analysis (FHA) and the post-fire safe shutdown analysis (SSA).

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

#### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems

#### 1R05 Fire Protection

.01 <u>Post-Fire Safe Shutdown From Outside the Main Control Room (Alternative Shutdown)</u> 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 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 post-fire safe shutdown would remain free from fire damage. The team verified that the transfer of control from the control room to the alternative shutdown locations would not be affected by fire-induced failures.

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 were trained, available onsite at all times, and exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire safe 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 operators could reasonably be expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions which were verified included restoring alternating current (AC) electrical power, establishing alternate shutdown system operation, establishing reactor coolant makeup and establishing decay heat removal.

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

- 2-AOP-SSD-1, Rev. 9, Control Room Inaccessibility Safe Shutdown Control
- 2-ONOP-FP-001, Rev. 2, Plant Fires

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

#### b. Findings

No findings of significance were identified.

#### .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 10 CFR 50, Appendix R, Section III.G, were maintained for the credited safe shutdown equipment including 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 Entergy's procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and controlling combustible loading within limits established in the Combustible Loading Calculation. 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 Entergy'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, post-fire safe shutdown analysis, and procedures.

# b. <u>Findings</u>

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.

#### 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 and that they would control or extinguish fires associated with the hazards in the selected areas. A review of the design capability of suppression agent delivery systems were verified to meet the code requirements for the fire hazards involved. The team also performed a walkdown of accessible portions of the detection and suppressions systems in the selected areas as well as a walkdown of major system support equipment in other areas (e.g. fire protection pumps, Halon® storage tanks and supply system) to 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, and observing live fire training. 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.

#### b. <u>Findings</u>

No findings of significance were identified.

# .05 Protection From Damage From Fire Suppression Activities

# a. <u>Inspection Scope</u>

The team reviewed documents and walked down the selected fire areas to verify that redundant trains of systems required for hot shutdown were not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

 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 safe shutdown trains,

- 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 safe shutdown 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. <u>Findings</u>

No findings of significance were identified.

# .06 <u>Alternative Shutdown Capability</u>

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

# .07 <u>Circuit Analyses</u>

#### a. Inspection Scope

The team verified that Entergy 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 post-fire safe shutdown. Additionally, the team verified that Entergy'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 review considered fire and cable attributes, potential undesirable consequences and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable construction details, cable failure modes, spurious actuations, actuations resulting in flow diversion or loss of coolant events.

The team also reviewed wiring diagrams 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 reports.

Cable failure modes were reviewed for the following components:

- Charging Pumps 21 and 23.
- Service Water Pump 24,
- Auxiliary Feedwater Pump 21,
- Component Cooling Pump 23, and
- Circuit breakers associated with the 13.8 kV Alternate Safe Shutdown Power System.

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. <u>Findings</u>

No findings of significance were identified.

#### .08 Communications

#### a. <u>Inspection Scope</u>

The team reviewed safe shutdown procedures, the SSA 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 and plant operators. The team also verified that communications equipment such as repeaters and transmitters 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 throughout the selected fire areas and evaluated their adequacy for illuminating access and egress pathways and any equipment requiring local operation or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an eight-hour capacity. Preventive maintenance procedures, the vendor manual, completed surveillance tests and battery replacement practices were reviewed to verify that the emergency lighting was being maintained in a manner that would ensure reliable operation.

# b. <u>Findings</u>

No findings of significance were identified.

### .10 Cold Shutdown Repairs

The team verified that Entergy 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 specific 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 on site.

#### .11 Compensatory Measures

#### a. <u>Inspection Scope</u>

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

#### b. Findings

No findings of significance were identified.

# 4OA6 Meetings, Including Exit

# **Exit Meeting Summary**

On May 18, 2007, the team presented the inspection results to Mr. F. Dacimo, Site Vice President, and other members of the site staff. No proprietary information was included in this inspection report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

#### A-1

#### **ATTACHMENT**

### SUPPLEMENTAL INFORMATION

#### **KEY POINTS OF CONTACT**

# Entergy Nuclear Operations, Inc.

- R. Burroni, Manager, Programs and Components
- S. Wilkie, Senior Fire Protection Engineer
- J. Cottam, Fire Protection Engineer
- K. Elliott, Fire Protection Engineer
- J. Etzweiler, Operations Supervisor
- A. Singer, Training Supervisor
- M. Yee, Electrical Engineer
- G. Dahl, Licensing Technical Specialist

#### **NRC**

- J. Rogge, Chief, Engineering Branch 3, Division of Reactor Safety
- W. Cook, Senior Reactor Analyst, Division of Reactor Safety
- M. Cox, Senior Resident Inspector, IP2
- D. Jackson, Acting Senior Resident, IP3
- G. Bowman, Resident Inspector, IP2
- B. Wittick, Resident Inspector, IP3

	LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED
<u>Opened</u>	
None	
Open and Closed	
None	
Closed	
None	
<u>Discussed</u>	
None	

#### LIST OF DOCUMENTS REVIEWED

# Calculations/Engineering Evaluation Reports

PGI-00577, Evaluation of Cable Spreading Room to CAS Corridor and Stairwell 3 Fire Barrier Interface, Rev. 0

FMX-00358-00, Component Cooling Water (CCW) Pump Curbing Volume Calculation, Rev. 4 FLEX-00160-02, Rev. 2, IP2 Evaluation of Alternate Power Supplies

EGP-00150-00, Appendix R Alternate Safe Shutdown System Voltage Drop Analysis, Electric Supply through Indian Point 1.

EGE-00001-02, Class 1E Motor Minimum Starting Voltage and Acceleration Time Calculations RPT-05-00084, Rev. 0, IP2 10 CFR 50 Appendix R Safe-Shutdown Manual Action Feasibility Report

IP2-RPT-03-00015, Rev. 3, IP2 Fire Hazards Analysis

IP-RPT-04-00188, Rev. 1, Evaluation of Hemyc Wrap Fire Protective Systems

IP-RPT-05-00071, Rev. 1, IP2 10 CFR 50 Appendix R Safe Shutdown Separation Analysis

IP-RPT-05-00071, Rev. 2, Cable Logic Report

NEA-00031-01, Rev. 1, SG Boil-Dry Analysis

IP-CALC-05-01034, Rev. 0, Appendix R Cooldown Benchmark and Sensitivity Analysis Using RETRAN-3D

IP-CALC-06-00029, Rev. 0, Appendix R Cooldown to RHR Initiation Using RERAN-3D

#### Procedures

EN-DC-127, Control of Hot Work and Ignition Sources, Rev. 2

SMM-DC-901, IPEC Fire Protection Program Plan, Rev. 2

SA0-703, Fire Protection Impairment Criteria and Surveillance, Rev. 25

2-BRK-020-ELC, Rev. 0, Westinghouse Model 150DH1000E (13.8kV) Air Circuit Breakers Maintenance Circuit Breakers Maintenance Procedure

2-PC-R37, Rev. 11, Alternate Safe Shutdown and Remote shutdown Instrument Calibration Procedures

2-SOP-27.1.3, Rev. 30, Operation of 13.8 KV System

EN-OP-115, Rev. 3, Conduct of Operations, Addendum 10.4, IPEC Plant Specific Addendum

OAP-115, Rev. 05, Operations Commitments and Policy Details

2-AOP-SSD-1, Rev. 09, Control Room Inaccessibility Safe Shutdown Control

2-AOP-SSD-1 BGD-R07, Background Document for 2-AOP-SSD-1, Rev. 07

AOI 27.1.9.2, Rev. 0, Providing Appendix R Power from Unit 3

SAO-703, Rev. 25, Fire Protection Impairment Criteria and Surveillance

SMM-DC-901, Rev. 2, IPEC Fire Protection Program Plan

#### Completed Tests/Surveillances

0-PT-M001, Fire Brigade Equipment Inventory and Inspection, Rev. 3, Completed 04/19/07

2PT-2Y017, Penetration Fire Barrier Seal Inspections, Rev. 0, Completed 12/13/05

PT-EM9, Fire Dampers Operability, Rev. 4, Completed 11/16/06

PT-SA12A, Ionization Type Smoke Detector (Conventional), Rev. 8, Completed 02/06/07

- PT-SA12B, Ionization Type Smoke Detector (PAB), Rev. 6, Completed 04/09/07
- PT-SA12C, Ionization Type Smoke Detector (Electrical and Pipe Penetration Area), Rev. 6, Completed 04/10/07
- PT-SA13, Cable Spreading Room Halon System, Rev. 9, Completed 03/13/07
- PT-19, Cable Spreading Room Halon System, Rev. 10, Completed 12/21/06
- 2-PT-A023, Fire Main Booster Pump Capacity Test, Rev. 10, Completed 06/14/06
- PT-A40, Diesel Fire Pump Capacity Test, Rev. 0, Completed 03/08/07
- 2-PT-3Y015A, Underground Fire Loop Flow, Rev. 2, Completed 09/23/04
- PMT-I2-2658, Installation of Halon System in Cable Spreading Room, Completed 12/18/79
- IP2-04-23808, 5/22/06 performance of PC-2Y 1, RCS Alternate Safe Shutdown Temperature Monitor Calibration, Rev. 6
- IP2-04-30257, 4/23/06 performance of PC-2Y70, Source Range Neutron Flux (N-5143) Channel Calibration, Rev. 2
- IP2-04-31441, 5/5/06 performance of 2-PC-R37, Alternate Safe Shutdown and Remote Shutdown Instruments, Rev. 11
- IP-06-22688, 4/23/07 performance of 0-PT-M002, Appendix R Equipment Inventory and Inspection, Rev. 3
- QS-2006-IP-04, Surveillance Report: Performance of Appendix R Safe Shutdown Procedure, 4/18/06

#### **Quality Assurance Audits**

- Audit Report A03-12-I, IPEC Fire Protection Program
- QA-09-2005-IP-1, IPEC Fire Protection program Audit
- QA-09-2006-IP-1, IPEC Fire Protection Program Audit
- QS-2006-IP-04, Performance of Appendix R Safe Shutdown Procedure, 2-AOP-SSD-1, Revision 7

# **Drawings**

- D-8775, Halon System Cable Spreading Room, Sh. 2, Rev. 4
- D-8775, Halon System Cable Spreading Room, Sh. 3, Rev. 4
- D-8775, Halon System Cable Spreading Room, Sh. 4, Rev. 3
- D-8775, Halon System Cable Spreading Room, Sh. 5, Rev. 2
- D-8775, Halon System Cable Spreading Room, Sh. 6, Rev. 2
- D-8677, Halon System Piping Cable Spreading Room, Sh. 4, Rev. 1
- 400411, Fire Area/Zone Arrangement EL. 100', Sh. 1, Rev. 1
- 400403, Fire Area/Zone Arrangement EL. 53', Sh. 1, Rev. 2
- 400404, Fire Area/Zone Arrangement EL. 80', Sh. 1, Rev. 2
- 400405, Fire Area/Zone Arrangement EL. 96', Sh. 1, Rev. 2
- 9321-F-4022, Flow Diagram Ventilation System Containment, Primary Aux. Building, Sh. 1, Rev. 62
- A208377-11, Unit 2 One Line Diagram.
- A208088-42, One Line Diagram of 480 Vac Switchgears 21 and 23.
- A208064-5, Level and Pressure Instrument for Steam Generator and Pressurizer Arrangement, Piping.

- A208065-11, Level and Pressure Instrument for Steam Generator and Pressurizer Arrangement, Piping Details Instrumentation.
- A209561-5, Steam Generator and Pressurizer Instrumentation Arrangement Outside Containment.
- A208247-8, Modification to Pressurizer Level transmitter Cabinet Rack No. 19 Instrumentation.
- A208248-6, Modification to Steam Generator Level transmitter Rack No. 21. Instrumentation.
- B225132-12, Elementary Wiring Diagram for Charging Pumps 21 and 23.
- B225137-10, Elementary Wiring Diagram for Residual Heat Removal Pumps 21 and 22.
- B225149-1-24, Elementary Wiring Diagram for Service Water Pump 23.
- 308762-0, Instrument Air and Nitrogen Supply to Pressurizer and Steam Generator Flow Diagram.
- IP2-S-000193-1, SWD-Control and Indication Service Water Pump 24
- 9921-LL-3118-30, Breaker 52/AF1 Auxiliary Feedwater Pump 21.
- 260503-03, Loop Diagram RCS Pressure SSD Level and Pressure, Loop Nos. 3101 and 3105 A138040-54, Unit 1 One Line diagram, 13.8kV and 440V Systems.
- 244016-19, Unit 1 One Line 440V Switchgear Unit Substation 11RW1, 12RW3, 12FD3, MCC's 10M,10N 10Z and 10X.
- 9321-F-36033, IP3 Appendix R On-site Alternate Power Source, Diesel Generator Main One-Line Diagram, Revision10
- A209762, Rev 67, Flow Diagram Service Water System Nuclear Steam Supply Plant, sheet 2 of 2
- 9321-F-2722-117, Rev 117, Flow Diagram Service Water System Nuclear Steam Supply Plant, sheet 1 of 2
- 9321-F-2019, Flow Diagram Boiler Feedwater
- 9321-F-3056-41, Rev. 41, Control Building, Elev. 33'-0" Cable Spreading Room Cable Trays Plan
- A206640-10, Arrangement of Equipment in Cable Spreading Room, Elev. 33'-0", West Half Plan &Sects.

#### Pre-Fire Plans

- PFP-209-FZ-1, Component Cooling Pump Room, Rev. 0
- PFP-215-FZ-1A, General Floor Plan Fan House, Rev. 0
- PFP-252-FZ-11, Cable Spreading Room, Rev. 0
- PFP-264-FZ-22 & 63A, Intake Structure, Rev. 0

#### Fire Brigade Training

IP-SMM-TQ-122, Fire Brigade Drill Attendance Record, Rev. 1 Drill Records 1<sup>st</sup> - 4<sup>th</sup> Quarter 2006, 1<sup>st</sup> Quarter 2007.

# Operator Safe Shutdown Training

I2LP-ILO-ASSD, Rev. 14, Instructor Lesson Plan: Alternate Safe Shutdown System

### **Transient Combustible Evaluations**

EN-DC-161, Transient Combustible Evaluation, 07-011 for Unit 2 Intake Structure, 4/26/07

# Miscellaneous Documents

ECRIS cable routing data report, 5/14/07 ECRIS cable routing data report, 5/15/07

TB-04-22, Westinghouse Technical Bulletin: Reactor Coolant Pump Seal Performance - Appendix R Compliance and Loss fo All Seal Cooling, Rev. 1

# **Condition Reports**

1999-01546	2002-11536	2003-01825	2004-00607
2004-00609	2004-01445	2006-00893	2006-01212
2006-03373	2006-05299	2006-06838	2006-06844
2007-00125	2007-00143	2007-00636	2007-00743
2007-00935	2007-00936	2007-00958	2007-01014
2007-01054	2007-01076	2007-01176	2007-01254
2007-01391	2007-01755	2007-01757	2007-10769
2007-01771	2007-01772	2007-01781	2007-02026
2007-02039	2007-02052	2007-02067	

# Work Orders

NP9262151	NP9262152	NP9157705	NP9261088	NP9259111	NP9262153
NP9364109	NP9153738				

#### LIST OF ACRONYMS USED

AC	Alternating Current
AOP	Abnormal Operating Procedure
CFR	Code of Federal Regulations
CO <sub>2</sub>	Carbon Dioxide
DRS	Division of Reactor Safety
FA	Fire Area
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
IP	Inspection Procedure
IP2	Indian Point Unit 2

IPE Individual Plant Examination IPEC Indian Point Energy Center

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

QA Quality Assurance

SAO Station Administrative Order SER Safety Evaluation Report

SG Steam Generator

SSA Safe Shutdown Analysis

SSD Safe Shutdown

SUNSI Sensitive Unclassified Non-Safeguards Information

UFSAR Updated Final Safety Analysis Report