

November 7, 2006

Mr. Fred R. Dacimo  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Indian Point Energy Center  
295 Broadway, Suite 1  
P.O. Box 249  
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 3 - NRC INTEGRATED  
INSPECTION REPORT 05000286/2006004

Dear Mr. Dacimo:

On September 30, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 3. The enclosed integrated inspection report documents the inspection results, which were discussed on October 4, 2006, with Mr. Paul Rubin 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, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Eugene W. Cobey, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket No. 50-286  
License No. DPR-64

Enclosure: Inspection Report No. 05000286/2006004  
w/Attachment: Supplemental Information

cc w/encl:

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F. Dacimo

3

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-286

License No.: DPR-64

Report No.: 05000286/2006004

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 3

Location: 295 Broadway, Suite 3  
Buchanan, NY 10511-0308

Dates: July 1, 2006 through September 30, 2006

Inspectors: T. Hipschman, Senior Resident Inspector, IP3  
B. Wittick, Resident Inspector, IP3  
M. Cox, Senior Resident Inspector, IP2  
G. Bowman, Resident Inspector, IP2  
F. Arner, Senior Reactor Engineer  
G. Hunegs, Senior Resident Inspector, Fitzpatrick  
C. Long, Project Engineer  
J. Noggle, Senior Health Physicist

Approved by: Eugene W. Cobey, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

IR 05000286/2006-004; 07/01/2006 - 09/30/2006, Indian Point Nuclear Generating Unit 3; Routine Integrated Inspection report.

The report covered a 3-month period of inspection by resident inspectors, and region based 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 and Self-Revealing Findings

No Findings of Significance Were Identified

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

Indian Point Nuclear Generating Unit 3 began the inspection period at full power. On July 6, 2006, an automatic reactor trip occurred due to a turbine trip for a generator protection relay fault. On July 7, 2006, Unit 3 returned to operation. On July 21, 2006, Unit 3 was manually tripped as a precaution when arcing was observed near the main generator. On July 22, Unit 3 returned to operation and remained at or near full power for the duration of the inspection period.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01 - 1 sample)

##### a. Inspection Scope

For the onset of extreme hot weather, the inspectors reviewed the readiness for extreme weather conditions of risk significant systems. The inspectors reviewed Entergy's adverse weather procedures, operating experience, corrective action program, Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TS), operating procedures, staffing, and applicable plant documents to determine the types of adverse weather challenges to which the site is susceptible.

Additionally, the inspectors evaluated implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of and during adverse weather conditions. The inspectors performed plant walkdowns and reviews to verify that plant features and procedures for operation and continued availability of the ultimate heat sink during adverse weather were appropriate including equipment availability for performance of the reactor shutdown function under the weather conditions assumed prior to the shutdown. The documents reviewed are listed in the Attachment. The following three risk-significant systems that were required to be protected from adverse weather conditions were selected and collectively they represent one inspection sample of risk significant systems:

- 480V switchgear room;
- emergency diesel generators; and
- safety injection and residual heat removal pumps.

##### b. Findings

No findings of significance were identified.

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## 1R04 Equipment Alignment

### .1 Partial Walkdown (71111.04Q - 4 samples)

#### a. Inspection Scope

The inspectors performed four partial system walkdowns to verify the operability of redundant or diverse trains and components during periods of system train unavailability or following periods of maintenance. The inspectors referenced the system procedures, the UFSAR and system drawings in order to verify that the alignment of the available train was proper to support its required safety functions. The inspectors also reviewed applicable condition reports and work orders to ensure that Entergy had identified and properly addressed equipment discrepancies that could potentially impair the capability of the available train. The documents reviewed are listed in the Attachment. The inspectors performed a partial walkdown of the following systems which represents four samples:

- 31 emergency diesel generator (EDG) system following maintenance activities;
- charging, seal water and letdown control following maintenance activities;
- 480V electrical distribution alignment following reactor startup; and
- fire water pumps and storage tank alignment following maintenance activities.

#### b. Findings

No findings of significance were identified.

### .2 Complete Walkdown (71111.04S - 1 sample)

#### a. Inspection Scope

The inspectors performed a complete walkdown of the safety injection system to identify any discrepancies between the existing equipment lineup and the required lineup. The inspectors reviewed operating procedures, surveillance test results, piping and instrumentation drawings, equipment lineup check-off lists, and the UFSAR to determine if the system was aligned to perform its safety functions. The inspectors reviewed a sample of condition reports and work orders written for deficiencies associated with the safety injection system to ensure that they had been evaluated and resolved. The documents reviewed are listed in the Attachment. The walkdown of the safety injection system represents one sample.

#### b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q - 10 samples).1 Fire Protection - Toursa. Inspection Scope

The inspectors conducted tours of the ten areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that combustibles and ignition sources were controlled in accordance with the Entergy's administrative procedures; fire detection and suppression equipment was available for use; that passive fire barriers were maintained; and that compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with Entergy's fire plan. The inspectors used procedure ENN-DC-161, "Transient Combustible Program," in performing the inspection. The inspectors evaluated the fire protection program against the requirements of license condition 2.H. The documents reviewed are listed in the attachment. This inspection satisfied ten inspection samples for fire protection tours.

The areas inspected included:

- Fire Zones 10, 36A, 101A, and 102A;
- Fire Zones 9, 4A, and 6A;
- Fire Zones 5A, 61A, 62A, and 68A;
- Fire Zone 23;
- Fire Zone 14;
- Fire Zone 3 and 4;
- Fire Zone 52A and 57A;
- Fire Zone 90A and 91A;
- Fire Zone 22; and
- Fire Zone 70A and 71A.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)a. Inspection Scope

The inspectors reviewed Indian Point's Individual Plant Examination of External Events and the UFSAR concerning external flooding events. The inspection included a walkdown of accessible areas of the plant to look for potential susceptibilities to external flooding and to verify the assumptions included in the site's external flooding analysis. The inspectors also reviewed relevant abnormal operating and emergency plan procedures. The documents reviewed are listed in the Attachment. This inspection represented one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Inspection (71111.11Q - 1 sample)

a. Inspection Scope

On September 5, and September 20, 2006, the inspectors observed licensed operator simulator and table top training to assess operator performance during several scenarios to verify that operator performance was adequate and evaluators were identifying and documenting crew performance problems. The inspectors evaluated the performance of risk significant operator actions, including the use of emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operation and manipulation, and the oversight and direction provided by the shift manager. The inspector also reviewed simulator fidelity to evaluate the degree of similarity to the actual control room. Licensed operator training was evaluated against the requirements of 10 CFR 55, "Operators' Licenses." The documents reviewed are listed in the Attachment. This observation of operator simulator training and table top exercises constituted one inspection program sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 3 samples)

a. Inspection Scope

The inspectors reviewed performance-based problems involving selected in-scope structures, systems, or components (SSCs) to assess the effectiveness of the maintenance program. Reviews focused on:

- Proper maintenance rule scoping in accordance with 10 CFR 50.65;
- Characterization of reliability issues;
- Changing system and component unavailability;
- 10 CFR 50.65 (a)(1) and (a)(2) classifications;
- Identifying and addressing common cause failures;
- Trending of system flow and temperature values;
- Appropriateness of performance criteria for SSCs classified (a)(2); and
- Adequacy of goals and corrective actions for SSCs classified (a)(1).

The inspectors reviewed system health reports, maintenance backlogs, and Maintenance Rule basis documents. The inspectors evaluated the maintenance program against the requirements of 10 CFR 50.65. The documents reviewed are listed in the Attachment.

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The following three maintenance rule samples were reviewed:

- Primary auxiliary building ventilation;
- Power range nuclear instrumentation; and
- Safety injection system.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control (71111.13 - 6 samples)

a. Inspection Scope

The inspectors reviewed the following six activities to verify that the appropriate risk assessments were performed prior to removing equipment from service for planned work. The inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The documents reviewed are listed in the Attachment. The following three emergent activities and three planned activities were observed and treated as six inspection samples:

- Work Order (WO) IP3-06-00769, exciter breaker trip circuit;
- WO IP3-06-00281, replacement of Appendix 'R' battery cells;
- WO IP3-06-18483, 32 auxiliary boiler feed pump 3PT-Q120B surveillance testing during severe thunderstorms;
- WO IP3-05-23556, 33 EDG air compressor maintenance with the Appendix "R" diesel generator out-of-service and steam flow/feedwater flow mismatch testing in progress;
- WO IP3-06-19282, 31 EDG jacket water heater ground troubleshooting; and
- WO IP3-0617646, remove scaffold to remove/reinstall the main generator links to support hi-pot of main generator phases.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations to assess the acceptability of the evaluations; when needed, the use and control of compensatory measures; and the compliance with Technical Specifications. The inspectors' review included a verification that the operability determinations were made as specified by ENN-OP-104, "Operability Determinations." The technical adequacy of the determinations was reviewed and

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compared to the Technical Specifications, UFSAR, and associated design basis documents. The documents reviewed are listed in the Attachment. The following five evaluations were reviewed and each constituted inspection program samples:

- Condition Report (CR) IP3-2006-02581, blown fuses for 33 EDG auxiliaries;
- CR IP3-2006-02071, turbine trip due to generator protection differential relay;
- CR IP3-2006-02255, 31 reactor coolant pump trip during reactor trip;
- CR IP3-2006-02080, 33/34 steam generator auxiliary feed flow differences; and
- CR IP3-2006-02078, reactor trip breaker time response.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17 - 1 sample)

a. Inspection Scope

The inspectors reviewed modification documents and monitored the installation and testing of modifications to the Indian Point 3 emergency diesel generator air start and ventilation systems in accordance with modification ER-04-3-003. The modifications changed piping material to stainless steel to eliminate the potential for corrosion and reconfigured the location of the strainer upstream of valves and indicators to improve effectiveness. Additionally, the reconfiguring of drain lines for the EDG ventilation system air receiver tanks improves operator access and safety. The modification was completed under work order IP3-02-19116. The post-modification testing included satisfactory completion of 3-PT-M79, "EDG Functional Test," as well as functional and leakage tests on affected components.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 7 samples)

a. Inspection Scope

The inspectors reviewed post maintenance test procedures and associated testing activities for selected risk significant mitigating systems to assess whether the effect of maintenance on plant systems was adequately addressed by control room and engineering personnel. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with design basis documentation; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon completion, the inspectors verified that equipment was returned to the proper alignment necessary to perform its safety function. Post maintenance testing was evaluated against the requirements of 10 CFR 50, Appendix B

Criterion XI, "Test Control." The documents reviewed are listed in the Attachment. The following post-maintenance test activities were reviewed and represent seven inspection program samples:

- WO IP3-05-19466, post work test (PWT) for a preventative maintenance inspection and a rotating element change-out of 32 Boric Acid Transfer Pump;
- WO IP3-06-15384, PWT for Appendix 'R' battery replacement;
- WO IP3-05-01275, PWT for TM-441D rod limit switch;
- WO IP3-06-20108, PWT for 33 safety injection pump inboard seal leak repair;
- WO IP3-05-21105, PWT for 33 EDG inspection;
- WO IP3-05-22199, PWT for 33 charging pump breaker replacement; and
- WO IP3-06-19282, PWT for 31 EDG following jacket water heater and lube oil heater maintenance.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 6 samples)

a. Inspection Scope

The inspectors witnessed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether the SSCs satisfied Technical Specifications, UFSAR, Technical Requirements Manual, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with design basis documentation; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon surveillance test completion, the inspectors verified that equipment was returned to the status specified to perform its safety function. The inspectors evaluated the surveillance tests against the requirements in Technical Specifications. The following surveillance tests were reviewed and represented six inspection program samples (one RCS leak detection sample, one in-service test (IST) samples and four surveillance test samples):

- 3-PT-Q117A, Revision 3, "31 Containment Spray Pump Functional Test;"
- 3-PT-M042B, Revision 3, "Diesel Fire Pump Test;"
- 3-PT-M13B1, Revision 12, "Reactor Protection Logic Functional Test;"
- 3-PT-M62A, Revision 35, "480V Degraded Grid/UV Test;"
- 3-PC-OL39B, Revision 1, "Recirculation Sump Level Channel Calibration;" and
- 3-PT-M79C, Revision 35, "33 Emergency Diesel Functional Test."

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness****1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies**  
(71114.05-1 sample)**a. Inspection Scope**

A region-based specialist inspector conducted an inspection of Entergy's corrective actions related to the current Indian Point alert and notification system, and also of the progress made in the design and installation of the new siren system. The inspection was conducted onsite September 13 and 14, 2006, and in the Region I office the week of September 25, 2006, per the baseline inspection program deviation authorized by the NRC Executive Director of Operations in a memorandum approved on October 31, 2005.

The inspector discussed and reviewed two events during the quarter that involved the loss of the ability to actuate the sirens: one occurred on August 2, 2006, as the result of a system computer hard drive failure; and one occurred on September 7, 2006, as the result of a human performance issue which occurred during work to prepare for the installation of the new siren system. The inspector reviewed the condition reports and the corrective actions, for these two events. To assess the effectiveness of the corrective actions and the performance of Entergy's siren system, the inspector observed the performance of the quarterly full siren test conducted on September 13, 2006. The inspector monitored the test from the Indian Point Energy Center Emergency Operations Facility (EOF) and observed the licensee's communication with the four local counties, the initiation of the siren system actuation, and the reception and logging of siren feedback information to determine the performance of the sirens.

Subsequent to the onsite portion of the inspection, the inspector learned of an additional failure of the siren system on September 19, 2006, as the result of the computer software database failing to reconnect following a preventive maintenance reboot of the siren system computer. The inspector conducted an initial in-office review of the event, but the licensee's corrective actions were not finalized prior to the end of the inspection period.

The inspector interviewed the project manager for the new siren system to understand Entergy's progress towards meeting the milestone dates required by the NRC's Confirmatory Order dated January 31, 2006. While on site, the inspector observed the progress of Entergy's installation of the new siren control system in the EOF. The inspector also reviewed the proposed final Indian Point Energy Center Prompt Alert and Notification System Design Report which Entergy had submitted to the New York State Emergency Management Office on September 28, 2006, for Department of Homeland Security review and approval.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151 - 2 samples)

a. Inspection Scope

The inspectors reviewed the licensee's data submitted to the NRC for the performance indicators (PIs) listed below, and performed an independent verification that the source data was consistent with plant records. The inspectors reviewed the licensee's collecting and reporting process for PI data as described in procedure SAO-114, "Preparation of NRC and World Association of Nuclear Operators (WANO) Performance Indicators." The purpose of these reviews was to determine whether the methods for reporting PI data were consistent with the guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 2. The inspection included a review of the indicator definitions, data reporting elements, calculating methods, definition of terms, and clarifying notes for the performance indicators. Plant records and data, including operator log entries, daily morning reports (including daily CR descriptions), monthly operating reports and PI data sheets were sampled and compared to the reported data. This inspection activity represents the completion of two samples.

Reactor Safety Cornerstone

- Reactor Coolant System Leakage (April 2004 - June 2006)
- Reactor Coolant System Activity (January 2004 - June 2006)

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Review of items Entered into the Corrective Action Program:

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive failures or specific human performance issues for follow-up, the inspectors screened all items entered into Entergy's corrective action program. This review was accomplished by reviewing hard copies or computer records of each condition report.

b. Assessment and Observations

No findings or observations of significance were identified.

4OA3 Event Followup (71153 - 2 samples)

.1 Unit 3 Automatic Trip - July 6, 2006

a. Inspection Scope

The inspectors responded to an automatic reactor trip that occurred on July 6, 2006, while operating at 100 percent steady state power. The automatic reactor trip occurred due to a main turbine generator trip as a result of a main generator protection circuit trip caused by a short in the insulation of wiring in the junction box of the main generator output phase 'B' differential protection current transformer. The inspectors discussed the reactor trip with Entergy management, as well as operations, maintenance, and engineering personnel to gain an understanding of the event and assess followup actions. The inspectors reviewed operator actions taken in accordance with licensee procedures and reviewed unit and system indications to verify that actions and system responses were as expected. The inspectors discussed the reactor trip with Entergy's root cause analysis team and assessed the team's actions to gather, review, and assess information leading up to and following the reactor trip. The inspectors also reviewed the initial investigation report and root cause determination to assess the detail of the review and the adequacy of the root cause analysis and proposed corrective actions prior to unit restart. The inspectors also reviewed the initial licensee notification to verify that it met the requirements specified in NUREG-1022, "Event Reporting Guidelines". Inspector observations were compared to the requirements specified in the procedure listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Unit 3 Manual Trip - July 21, 2006

a. Inspection Scope

The inspectors responded to a manual reactor trip that occurred on July 21, 2006, while operating at 100 percent steady state power. Control room operators initiated a manual reactor trip in accordance with directions provided by the operations shift manager as a result of observing arcing under the main turbine generator between metal scaffolding contacting two phases of the main turbine generator iso-phase bus housing. The inspectors discussed the reactor trip with Entergy management as well as operations, maintenance, and engineering personnel to gain an understanding of the event and assess followup actions. The inspectors reviewed operator actions taken in accordance with licensee procedures and reviewed unit and system indications to verify that actions and system responses were as expected. The inspectors discussed the

reactor trip with Entergy's root cause analysis team and assessed the team's actions to gather, review, and assess information leading up to and following the reactor trip. The inspectors also reviewed the initial investigation report and root cause determination to assess the detail of the review and the adequacy of the root cause analysis and proposed corrective actions prior to unit restart. The inspectors also reviewed the initial licensee notification to verify that it met the requirements specified in NUREG-1022, "Event Reporting Guidelines". Inspector observations were compared to the requirements specified in the procedure listed in the Attachment.

b. Findings

No findings of significance were identified.

.3 (Closed) LER 06000286/2006-001-00 Reactor Trip as a Result of a Main Generator Trip Due to Short in the Generator Differential Protection Circuit

An automatic reactor trip that occurred on July 6, 2006, while the unit was operating at 100 percent steady state power. The automatic reactor trip occurred due to a main turbine generator trip as a result of a main generator protection circuit trip caused by a short in the insulation of wiring in the junction box of the main generator output phase 'B' differential protection current transformer. Entergy maintenance personnel repaired the insulation on the wiring, and the unit was returned to full power operation. The LER was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred. The licensee documented the failed equipment in CR-IP3-2006-02071. This LER is closed.

4OA5 Other Activity

Groundwater Contamination Investigation

a. Inspection Scope

Inspection of the groundwater contamination investigation at Indian Point Energy Center was authorized by the NRC Executive Director of Operations in a Reactor Oversight Process (ROP) deviation memorandum approved on October 31, 2005 (ADAMS Accession number ML053010404). Accordingly, oversight of licensee progress has been conducted throughout this inspection period consisting of weekly discussions with the licensee on groundwater investigation status and bi-weekly communications with Federal, State, and local government stakeholders. In addition, NRC continued to split samples of offsite, site boundary and other selected monitoring wells with the licensee in order to verify the licensee's sample results.

b. Results

The NRC's assessment of the licensee's sample data indicated that the licensee continued to report sample results that were consistent with NRC results. The Oak Ridge Institute for Science and Education, Environmental Site Survey and Assessment

Program (ORISE/ESSAP) sample results are available in ADAMS under Accession Number ML062720227. To date, sample results from site boundary wells and off-site environmental groundwater sampling locations have not indicated any detectable plant-related activity.

4OA6 Meetings, including Exit

Exit Meeting Summary

On October 4, 2006, the inspectors presented the inspection results to Mr. Paul Rubin and other Entergy staff members, who acknowledged the inspection results presented. Entergy did not identify any material as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

F. Dacimo, Site Vice President  
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J. Ventosa, Director, Engineering  
J. Comiotes, Director, Nuclear Safety Assurance  
A. Williams, IP3 Operations Manager  
A. Vitale, Site Operations Manager  
T. Barry, Security Manager  
J. Donnelly, Manager, Maintenance  
P. Conroy, Manager, Licensing  
B. Sullivan, Emergency Planning Manager  
T. Jones, Licensing Supervisor  
L. Lee, Systems Engineering Supervisor  
T. Orlando, Manager, Design Engineering  
C. Smyers, Shift Manager, Operations  
P. Parker, Superintendent, Maintenance  
D. Shah, Systems Engineer  
S. Wilkie, Fire Protection Engineer

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed

06000286/2006-001-00	LER	Reactor Trip as a Result of a Main Generator Trip Due to Short in the Generator Differential Protection Circuit (Section 4OA3.3)
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**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

Procedures:

3-SOP-V-001, Rev 14: "PAB Heating and Ventilation System Operation"  
3-SOP-V-003, Rev 9: "Diesel Generator Building Heating and Ventilation System Operation"  
3-COL-V-001, Rev 14: "Heating and Ventilation System for the Turbine Hall, Control Building, ABFP Building, DG Building, Containment, PAB, and FSB"  
OAP-008, Rev. 2: "Severe Weather Preparations"  
ARP-013, Rev 33: "Hi Room Temp Control Bldg EL 33FT"

**Section 1R04: Equipment Alignment**Procedures:

3-COL-FP-1, Rev. 18: "Fire Pump House"  
 3-COL-FP-2, Rev. 10: "Fire Protection System Ring Header"  
 3-COL-FP-3, Rev. 20: "Fire Protection System"  
 3-SOP-EL-005A, Rev 11: "480 Volt Electrical System Operation"  
 3-SOP-FP-001, Rev. 27: "Fire Protection System Operation"  
 3-COL-CVCS-1, Rev. 26: "Chemical and Volume Control System"  
 3-SOP-CVCS-002, Rev. 47: "Charging, Seal Water, and Letdown Control"  
 3-SOP-SI-001, Rev. 38: "Safety Injection System"  
 3-COL-10.1.1, Rev. 37: "Safety Injection System"

Drawings

617F644	480V One Line Diagram
9321-LL-30412	480V Distribution Panel "H2" - Primary Auxiliary Building
9321-F-30043	Single Line Diagram 480V Motor Control Centers
9321-F-40903	Flow Diagram of Plant Fire Protection System, Sheet 1
9321-F-27363	Flow Diagram Chemical and Volume Control System
9321-F-27373	Flow Diagram Chemical and Volume Control System

Condition Reports

IP3-2006-01009	IP3-2006-01283	IP3-2006-01598	IP3-2006-01766
IP3-2006-01858	IP3-2006-02002	IP3-2005-05587	IP3-2005-05836
IP3-2005-05527	IP3-2006-01068	IP3-2005-00345	IP3-2005-00362
IP3-2005-01033	IP3-2005-01374	IP3-2005-01450	IP3-2005-01493
IP3-2005-01556	IP3-2005-01588	IP3-2005-02280	IP3-2005-02985
IP3-2005-03289	IP3-2005-04369	IP3-2005-05294	IP3-2006-01246
IP3-2006-01479	IP3-2006-01486	IP3-2006-01487	IP3-2006-01488
IP3-2006-01859	IP3-2006-02721	IP3-2005-05404	

**Section 1R06: Flood Protection Measures**Procedures

3-AOP-FLOOD-1, Rev. 2: "Flooding"

Condition Reports:

IP3-2005-00345	IP3-2005-00362	IP3-2005-01033	IP3-2005-01374
IP3-2005-01450	IP3-2005-01493	IP3-2005-01556	IP3-2005-01588
IP3-2005-02280	IP3-2005-02985	IP3-2005-03289	IP3-2005-04369
IP3-2005-05294	IP3-2006-01246	IP3-2006-01479	IP3-2006-01486
IP3-2006-01487	IP3-2006-01488	IP3-2006-01859	IP3-2006-02721

**Section 1R11: Licensed Operator Requalification Program**

Procedures:

LRQ-SES-C1, Rev 9, "Simulator Guide"  
 IP-EP-AD13, Rev. 0, "Emergency Action Level Technical Bases"  
 ERT-MEP-01, Rev. 0, "Manager, Emergency Preparedness Topics"

**Section 1R12: Maintenance Effectiveness**

Procedures:

ENN-DC-171, Rev 2: "Maintenance Rule Monitoring"  
 0-LUB-401-GEN, Rev 2: "Lubrication of Plant Equipment"  
 3-SOP-V-001, Rev 14: "PAB Heating and Ventilation System Operation"  
 FP-29, Rev 4: "Appendix 'R' Supplemental Ventilation"  
 3-TOP-206, Rev 0: "Contingency Actions for PAB Ventilation"  
 3-PC-Q109A, Rev 5: "Nuclear Power Range Channel -41 Axial Offset Calibration"  
 E-0, Rev. 47: "Reactor Trip and Safety Injection"  
 3-SOP-SI-001, R38: "Safety Injection System"  
 3-COL-10.1.1, Rev 37: "Safety Injection System"

Calculations:

EGE-556-001, Rev 1: "Thermal Aging Analysis for RHR and SI Pump Motors for Loss of PAB Ventilation"  
 ENG-560, Rev 1: "Air Temperatures in the PAB MCC, CCW Pump and Charging Pump Rooms during a LOCA and Postulated Appendix 'R' Fire"  
 V/C No: 6604.164-F-PAB-060, Rev 1: "Calculation: Temperature Response in PAB"

Condition Reports:

IP3-2006-00669	IP3-2006-00679	IP3-2005-02419	IP3-2005-03837
IP3-2006-01916	IP3-2006-02151	IP3-2006-01599	IP3-2006-01596
IP3-2006-00759	IP3-2006-00862	IP3-2006-00854	IP3-2005-05830
IP3-2006-00044	IP3-2005-05404	IP3-2005-05587	IP3-2005-05836
IP3-2005-05527	IP3-2006-01068	IP3-2005-00345	IP3-2005-00362
IP3-2005-01033	IP3-2005-01374	IP3-2005-01450	IP3-2005-01493
IP3-2005-01556	IP3-2005-01588	IP3-2005-02280	IP3-2005-02985
IP3-2005-03289	IP3-2005-04369	IP3-2005-05294	IP3-2006-01246
IP3-2006-01479	IP3-2006-01486	IP3-2006-01487	IP3-2006-01488
IP3-2006-01859	IP3-2006-02721		

Work Orders:

IP3-05-18084	IP3-04-18129	IP3-05-21158	IP3-05-13617
IP3-05-25527	IP3-05-00136	IP3-05-00201	IP3-06-14736
IP3-06-00654	IP3-05-19458	IP3-05-19395	

Miscellaneous:

IP3-RPT-HVAC-01905, Rev 0: "Maintenance Rule Basis Document Fuel Storage Building HVAC, Primary Auxiliary Building HVAC and Containment Purge and Supply Systems"

IP3-DBD-315, Rev 1: "Primary Auxiliary Building Heating and Ventilation System"  
Safety Injection System Health Report, 2005, 2006

Drawings:

Westinghouse Electric Corporation, 6050D85, Rev 3, Sheet 1  
Westinghouse Electric Corporation, 6050D89, Rev 2, Sheet 2  
9321-F-27353, Flow Diagram Safety Injection System  
9321-F-27503, Flow Diagram Safety Injection System

**Section 1R13: Maintenance Risk Assessment and Emergent Work Control**

Procedures:

IP-SMM-WM-101, Revision 1: "On-Line Risk Assessment"  
IP-SMM-WM-100, Revision 2: "Work Control Process"  
OAD-37, Revision 14: "Guidelines for Performing Risk Assessment"  
OAP-030, Revision 0: "Infrequently Performed Tests and Evolutions"  
3-PC-OL47A, Revision 2: "Gross Failed Fuel Detector Monitor Calibration (R-63A)"  
3-POP-1.3, Revision 50: "Plant Startup from Zero to 45% Power"  
3-PT-Q90, Revision 8: "Condensate Polisher Effluent Flow Instruments Functional Test"  
3-SOP-TG-004, Revision 41: "Turbine Generator Operation"

Work Orders:

IP3-05-21022                      IP3-05-20783                      IP3-05-23556

Condition Reports:

IP3-2006-02158	IP3-2006-02261	IP3-2005-03772	IP3-2005-03799
IP3-2006-00429	IP3-2006-01953	IP3-2006-01955	IP3-2006-02607
IP3-2005-04933	IP3-2005-05115	IP3-2005-05779	IP3-2006-01746
IP3-2006-02678	IP3-2006-02685	IP3-2006-02798	

Drawings:

Con Edison Indian Point Plant 3, Control Scheme 138D812

**Section 1R15: Operability Evaluations**

Procedures:

EN-OP-104, Rev 1: "Operability Determinations"  
OAP-026, Rev 0: "Determination of Operability"  
EN-DC-136, Rev 0: "Temporary Modifications"

Drawings:

Indian Point No. 3 Nuclear Power Plant, Main One Line Diagram, 617F645, Sheet 17  
Indian Point No. 3 Nuclear Power Plant, Logic Diagram Turbine Trip Signals, 5651D72, Rev 10  
Indian Point No. 3 Nuclear Power Plant, Wiring Diagrams Turbine Devices, 9321-F-32103,  
Sheet 18

Condition Reports:

IP3-2006-02580	IP3-2006-02637	IP3-2006-02638	IP3-2006-02071
IP3-2006-02072	IP3-2006-02073	IP3-2006-02074	IP3-2006-02076
IP3-2006-02075	IP3-2006-02079	IP3-2006-02084	IP3-2006-02085
IP3-2006-02080	IP3-2006-02071	IP3-2006-01078	IP3-2006-02080
IP3-2006-02255	IP3-2006-02260	IP3-2003-00160	IP3-2003-00158
IP3-2005-00992	IP3-2006-02581		

Work Orders:

IP3-06-00900	IP3-03-10457	IP3-06-17655
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Miscellaneous:

IP3-DBD-324, Rev 0: "Indian Point Unit No. 3, Emergency Diesel Generator"  
 NYPA Vendor Manual 439-100093077, "Turbine-Generator Equipment Preservation Manual"  
 NYPA WE-030, "32000&16000 AMP, 23KV Isolation Phase Bus"

**Section 1R17: Permanent Plant Modifications**

Procedures:

ENN-DC-112, Rev 7: "Engineering Request and Project Initiation Process"  
 ENN-DC-117, Rev 4: "Post Modification Testing and Special Testing Instructions"  
 EN-DC-136, Rev 0: "Temporary Modifications"

Calculations:

IP-CALC-05-00018, Rev 0: "Pipe Stress & Pipe Support Evaluation for IP3 EDG Air Start System"

Drawings:

Entergy Drawing No. 9321-H-20293, "Flow Diagram, Starting Air to Diesel Generators"

Condition Reports:

IP3-2002-03872	IP3-2003-00165	IP3-2006-02798	IP3-2006-03015
IP3-2006-03000			

Work Orders:

IP3-06-11723	IP3-02-19116	IP3-04-18474	IP3-05-21101
IP3-05-21105	IP3-05-21104	IP3-03-10649	IP3-05-19958
IP3-06-11723			

Miscellaneous:

IP3-DBD-324, Rev 0: "Indian Point Unit No. 3, Emergency Diesel Generator"

**Section 1R19: Post-Maintenance Testing**

Procedures:

OAP-024, Rev 2: "Operations Testing"  
 OAP-030, Rev 0: "Infrequently Performed Tests and Evolutions"

3-PT-M79C, Revision 35: "33 EDG Functional Test"  
3-PT-Q038B, Revision 13: "32 Boric Acid Transfer Pump Functional Test"  
3PT-R103, Revision 12: "Appendix 'R' Diesel Battery Load Test"  
3PT-M66, Revision 21: "Appendix 'R' Diesel Battery Inspection"  
3-PT-V58, Revision 3: "Channel Functional Test of Rod Insertion Limit Computer Stations"  
3-PT-Q116C, Revision 11: "33 Safety Injection Pump Functional Test"

Condition Reports:

IP3-2005-03621	IP3-2006-00599	IP3-2006-02607	IP3-2006-01487
IP3-2006-01488	IP3-2006-02721		

Work Orders:

IP3-05-19464	IP3-06-00281	IP3-06-00152	IP3-06-01067
IP3-06-01062	IP3-05-00402	IP3-05-21104	IP3-04-16194

Drawings:

Indian Point No. 3 Nuclear Power Plant, Interconnection Wiring Diagram, 9321-H-39923, Sheet 43  
Indian Point No. 3 Nuclear Power Plant, Interconnection Wiring Diagram, 9321-H-39923, Sheet 44

**Section 1R22: Surveillance Testing**

Condition Reports

IP3-2005-03986	IP3-2006-02180	IP3-2005-02626	IP3-2005-03095
IP3-2005-05073			

Work Orders:

IP3-05-22072

Miscellaneous

Pre-Job Briefing Sheet, 3-PT-Q117A/B 31/32 Containment Spray Pump Functional Test  
Pre-Job Briefing Sheet, 3-PT-M13A1/M13B1 Rx Protection Logic Channel Functional Tests

**Section 1EP5:**

Condition Reports

IP2-2006-05543	IP3-2006-05452	IP3-2006-02432	IP2-2006-04625
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**Section 4OA1:**

Procedures:

SOP-RCS-005, Rev 18: "Reactor Coolant Leakage Evaluation"  
SOP-RCS-004, Rev 22: "Reactor Coolant Leakage Surveillance"  
EN-LI-114, Revision 1: "Performance Indicator Process"  
NEI 99-02, Rev. 4: "Regulatory Assessment Performance Indicator Guideline"

**Section 40A3**

Procedures:

E-0, Rev. 47: "Reactor Trip and Safety Injection"  
IP-SMM-OP-106, Rev 4: "Post Transient Evaluation" dated July 6, 2006  
IP-SMM-OP-106, Rev 4: "Post Transient Evaluation" dated July 21, 2006  
3PT-R007A, Rev. 13: "31 and 33 Auxiliary Boiler Feedwater Pumps Full Retest";  
3-SOP-FW-004, Rev 25: "Auxiliary Feedwater Operations"

Condition Reports

IP3-2006-02071

Work Orders:

IP3-06-17646

IP3-06-17610

**LIST OF ACRONYMS**

ADAMS	agencywide documents and management system
ALARA	as low as reasonably achievable
CFR	Code of Federal Regulations
EDG	emergency diesel generator
EOF	emergency operation facility
EOP	emergency operating procedure
EP	emergency procedure
ESSAP	Environmental Site Survey and Assessment Program
IP3	Indian Point Nuclear Generating Unit 3
IPEC	Indian Point Energy Center
IST	in-service test
LER	licensee event report
NVC	non-cited violation
NEI	Nuclear Energy Institute
NCR	Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
PARS	publicly available records
PI	performance indicator
PWT	post work test
RCP	reactor coolant pump
ROP	reactor operating process
SDP	significance determination process
SSC	systems, structures, components
TS	technical specifications
USFAR	Updated Final Analysis Report
WANO	World Association of Nuclear Operators
WO	work order