

July 24, 2006

Mr. Fred R. Dacimo  
Site Vice President  
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Indian Point Energy Center  
295 Broadway, Suite 1  
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Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 3 - NRC INTEGRATED  
INSPECTION REPORT 05000286/2006003

Dear Mr. Dacimo:

On June 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 June 28, 2006, 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.

This report documents one finding of very low safety significance (Green). The finding was determined to be a violation of NRC requirements. However, because of the very low safety significance, and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Senior Resident Inspector at Indian Point Unit 3.

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

Mr. F. Dacimo

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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. 05000286/2006003  
w/Attachment: Supplemental Information

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**U.S. NUCLEAR REGULATORY COMMISSION**

REGION I

Docket No.: 50-286

License No.: DPR-64

Report No.: 05000286/2006003

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 3

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

Dates: April 1, 2006 through June 30, 2006

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## SUMMARY OF FINDINGS

IR 05000286/2006-003; 04/01/2006 - 06/30/2006, Indian Point Nuclear Generating Unit 3; Maintenance Risk Assessments and Emergent Work Control.

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

### A. NRC Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Green. The inspectors identified a non-cited violation of Title 10 of the Code of Federal Regulations (CFR), Part 50.65(a)(4) for failure to perform a risk assessment of emergent maintenance conducted on nuclear power range channel N42 on April 6, 2006. In response to this finding, Entergy performed a risk assessment and entered the deficiency into their corrective action program. Corrective actions completed included a review of the risk assessment process and promulgation of lessons learned by the work week manager. Ongoing corrective actions include a review of risk assessment practices by the Operations department and issuance of a new condition report to evaluate ongoing risk assessment deficiencies.

The inspectors determined that this finding is more than minor because it is similar to Example 7.e in Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that, the licensee's risk assessment failed to consider maintenance activities that could increase the likelihood of initiating events. The inspectors assessed the finding using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, "Assessment of Risk Deficit," and determined the finding to be of very low safety significance because the incremental core damage probability deficit was less than  $1 \times 10^{-6}$ . The inspectors also determined that the finding had a cross-cutting aspect in the area of human performance because, during work planning for emergent maintenance on nuclear power range channel N42, the licensee did not appropriately incorporate risk insights in accordance with 10 CFR Part 50.65(a)(4) and the Site Management Manual IP-SMM-WM-101, "Online Risk Assessment." (Section 1R13)

### B. Licensee-Identified Violations

None.



## REPORT DETAILS

### Summary of Plant Status

Unit 3 operated 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

The inspectors reviewed Entergy's administrative controls and implementation of a maintenance program to prepare for **seasonal warm weather conditions**. The inspectors **also reviewed work orders, condition reports and operating procedures associated with warm weather conditions**. The documents reviewed during the inspection are listed in the Attachment. This inspection satisfied one inspection sample for the onset of **adverse weather**.

###### b. Findings

No findings of significance were identified.

##### 1R04 Equipment Alignment

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

###### a. Inspection Scope

The inspectors performed system walkdowns during periods of system train unavailability in order to verify that the alignment of the available train was proper to support the availability of safety functions, and to ensure that Entergy had identified and properly addressed equipment discrepancies that could potentially impair the functional capability of the available train. **The documents reviewed during the inspection are listed in the Attachment**. The following system walkdowns were counted as four samples:

- 31 emergency diesel generator (EDG) system following maintenance activities;
- 31 and 33 EDGs with the 32 EDG out of service for quarterly maintenance and testing;
- Safety injection (SI) system during maintenance activities on 33 SI pump; and
- Service water system alignment to verify proper alignment of essential service water.

b. Findings

No findings of significance were identified.

2. Complete Walkdown (71111.04S - 1 sample)

a. Inspection Scope

The inspectors conducted one complete walkdown of the motor-driven and turbine-driven auxiliary feedwater (AFW) systems to verify the functional capability of the system. The inspectors used the license procedures and other documents listed below to verify proper system alignment:

- Drawings 9321-F-20193, "Flow Diagram Boiler Feedwater," and 9321-F-20183, "Flow Diagram Condensate & Boiler Feed Pump Suction;"
- Operations check off list procedure 3-COL-FW-2, "Auxiliary Feedwater System;" and
- Standard operating procedure 3-SOP-FW-004, "Auxiliary Feedwater System Operation."

The inspectors also verified motor-driven and turbine-driven auxiliary feedwater systems electrical power requirements, operator workarounds, labeling, hangers and support installation, and associated support systems status. Operating pumps were examined to ensure that any noticeable vibration was not excessive, pump leakoff was not excessive, bearings were not hot to the touch, and that the pumps were properly ventilated. The walkdowns also included evaluation of system piping and supports against the following considerations:

- Piping and pipe supports did not show evidence of water hammer;
- Pump and motor oil reservoir levels appeared normal;
- Snubbers did not appear to be leaking hydraulic fluid;
- Hangers were functional; and
- Component foundations were not degraded.

A review of outstanding maintenance work orders was performed to verify that the deficiencies did not significantly affect the motor-driven and turbine-driven auxiliary feedwater systems function. In addition, the inspectors reviewed the condition report (CR) database to verify that motor-driven and turbine-driven auxiliary feedwater systems equipment alignment problems were being identified and appropriately resolved. The complete system walkdown was counted as one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q - 9 samples).1 Fire Protection - Toursa. Inspection Scope

The inspectors toured areas that were identified as important to plant safety and risk significance. The inspectors consulted the Indian Point 3 Individual Plant Examination for External Events (IPEEE), Section 4.0, "Internal Fires Analysis," and the top risk-significant fire zones in Table 4.6-2, "Summary of Core Damage Frequency Contributions from Fire Zones." The objective of this inspection was to determine if Entergy had adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, and had adequately established compensatory measures for degraded fire protection equipment.

The inspectors evaluated conditions related to: (1) control of transient combustibles and ignition sources; (2) the material condition, operational status, and operational lineup of fire protection systems, equipment, and features; (3) the fire barriers used to prevent fire damage or fire propagation; and (4) compensatory measures for out-of-service, degraded, or inoperable fire protection equipment in order to determine if they were implemented in accordance with Entergy's fire plan. The documents reviewed during the inspection are listed in the Attachment. The following areas constitute nine samples:

- C Fire Zones 10, 36A, 101A, 102A;
- C Fire Zone 23;
- C Fire Zones 94A, 95A, 96A, 97A, 98A;
- C Fire Zones 11, 12, 13;
- C Fire Zones 7A, 74A, 60A, 73A;
- C Fire Zones 21, 37A, 38A, 40A;
- C Diesel Fire Pump Repair;
- C Fire Zones 37A; and
- C Fire Zone 131.

b. Findings

No findings of significance were identified.

.2 Fire Protection - Drill Observation (71111.05A - 1 sample)d. Inspection Scope

The inspectors observed an unannounced fire brigade drill. The drill was conducted in accordance with the Entergy's preplanned drill scenario and simulated an explosion and subsequent electrical fire in the 480 volt switchgear room. The drill was a routine training exercise for current fire brigade members. The inspectors evaluated the readiness of the fire brigade to suppress and contain the fire, and evaluated the following aspects of the drill:

- Donning of protective clothing/turnout gear by fire brigade members;
- Proper use of self-contained breathing apparatus equipment (SCBA);
- Capability and use of fire hose lines to reach all necessary fire hazard locations;
- Control of fire brigade members' entrance into the fire area;
- Adequacy of the fire fighting equipment brought to the scene by the fire brigade;
- Clarity and effectiveness of the fire brigade leader's fire fighting directions;
- Efficiency and effectiveness of radio communications with the plant operators and between fire brigade members;
- Adequacy of fire brigade members' search for fire victims;
- Effectiveness of simulating smoke removal operations;
- Use of the fire fighting pre-plan strategies;
- Adequacy of fire brigade members' search for propagation of the fire into other plant areas;
- Adherence to the licensee's pre-planned drill scenario; and
- Adequacy of the drill objectives and acceptance criteria.

The inspectors also reviewed the results of the post-drill critique and evaluated it for thoroughness and degree of critical self-assessment. The documents reviewed during the inspection are listed in the Attachment. The inspection of the unannounced fire brigade drill represents one inspection sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)

q. Inspection Scope

The inspector reviewed Entergy's internal flood analysis, flood mitigation procedures and design features of the primary auxiliary building **flood zone 15** to verify whether they were consistent with the design requirements of Unit 3. The inspector walked down several internal plant areas that contained equipment important to safety. The inspector evaluated the condition and adequacy of mitigation equipment to assess whether flood protection design features were adequate.

The inspector reviewed a sample of Entergy's preventive maintenance and surveillance procedures on flood mitigation equipment. In addition, the inspector reviewed the Corrective Action Program (CAP) to verify whether previous flood related issues had been appropriately evaluated and resolved. **The documents reviewed during the inspection are listed in the Attachment.** This review was **one** sample of internal flood protection.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A - 1 sample)

a. Inspection Scope

The inspectors performed an inspection of the Unit 3 EDG lube oil coolers. The inspector verified that Entergy used the periodic maintenance method outlined in Electric Power Research Institute (EPRI) document NP-7552, "Heat Exchanger Performance Monitoring Guidelines." The inspector reviewed the results of the last inspections and eddy current tests for each of the lube oil coolers. The documents reviewed during the inspection are listed in the Attachment. The inspection of Unit 3 EDG lube oil coolers represents inspection sample.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

During the simulator portion of the June 14, 2006, emergency planning exercise, the inspectors evaluated the team's performance for: (1) clarity and formality of communications; (2) correct use and implementation of emergency operating procedures (EOP) and abnormal operating procedures; (3) operators' ability to properly interpret and verify alarms; (4) operator's ability to classify events in a timely fashion; and (5) operators' ability to take timely actions in a safe direction based on transient conditions. In addition, the inspectors evaluated the control room supervisor's ability to exercise effective oversight and control of the crew's actions during the exercise.

On June 15, 2006, the inspectors observed simulator training for licensed operators who participated in a series of scenarios conducted in accordance with lesson plan I3SG-LOR-AOP020, "AOP [abnormal operating procedure]-138kV[kilovolt]-1 and AOP 13.8kV-1 Simulator," to determine if the scenarios contained (1) clear event descriptions with realistic initial conditions; (2) clear start and end points; (3) clear descriptions of visible plant symptoms for the crew to recognize; and (4) clear expectations of operator actions in response to abnormal conditions. **The documents reviewed during the inspection are listed in the Attachment.** The review of the licensed operator requalification activities represents one inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 4 samples)a. Inspection Scope

The inspectors evaluated four samples listed below to assess the effectiveness of Entergy's work practices and corrective actions for selected systems, structures, and components (SSC). The inspectors reviewed the performance history of those SSCs and assessed extent of condition determinations performed by Entergy personnel for those issues with potential common cause or generic implications to evaluate the adequacy of corrective actions. The inspectors reviewed problem identification and resolution actions for these issues identified by Entergy personnel to evaluate whether they had appropriately monitored, evaluated, and dispositioned the issues in accordance with Entergy's procedures and the requirements of 10 CFR Part 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspectors reviewed selected SSC classification, performance criteria and goals, and Entergy's corrective actions that were taken or planned, to verify whether the actions were reasonable and appropriate. **The documents reviewed during the inspection are listed in the Attachment.** The following four systems were evaluated and treated as four inspection samples:

- 32 central control room air conditioning system;
- 31 emergency diesel generator;
- Weld channel containment penetration and pressurization system; and
- Pressurizer power operated relief valve PCV-456 and PCV-455C nitrogen supply subsystem.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control (71111.13 - 5 samples)a. Inspection Scope

The inspector observed selected portions of emergent and planned maintenance work activities to assess Entergy's risk management in accordance with 10 CFR Part 50.65(a)(4). The inspector verified that Entergy took the necessary steps to plan and control emergent work activities, to minimize the probability of initiating events, and to maintain the functional capability of mitigating systems. The inspector observed and/or discussed risk management with maintenance and operations personnel. **The documents reviewed during the inspection are listed in the Attachment.** The following three emergent activities and two planned activities were observed and treated as five inspection samples:

- Work Order (WO) IP3-05-13915, "Safety Injection Valve Quarterly Testing;"
- WO IP3-05-19400, "Nuclear Power Range Channel 42 Axial Offset Calibration;"
- WO IP3-06-14196, "31/33 EDG Testing;"
- WO IP3-06-00244, "BFD-FCV-427 Steam Leak;" and

- WO IP3-05-15971, "Inspection of Diesel Fire Pump Engine."

b. Findings

Introduction: The inspectors identified a Green non-cited violation of 10 CFR Part 50.65(a)(4) for Entergy's failure to perform a risk assessment for emergent maintenance conducted on nuclear power range channel N42.

Description: On April 6, 2006, 3-PC-Q109B, "Nuclear Power Range Channel N42 Axial Offset Calibration," was performed as an emergent work activity. The calibration is risk significant due to increased potential for a reactor trip. The inspectors identified that the shift manager did not perform a risk assessment that included the nuclear instrument calibration with other risk significant maintenance when it was performed on April 6, 2006.

10 CFR 50.65(a)(4) requires that licensees assess the risk of maintenance activities prior to conducting work on certain structures, systems, and components. Entergy procedure IP-SMM-WM-101, "On-Line Risk Assessment," requires that the on-line risk assessment process be performed for emergent work affecting risk significant activities. No risk assessment was completed for this work as part of the work planning process; and as a result, no risk management actions were developed.

Analysis: The inspectors determined that Entergy's failure to assess the risk of emergent maintenance activities on nuclear power range channel N42 is a performance deficiency. The inspectors determined that this issue was within Entergy's ability to foresee and prevent, given that procedural guidance directed a risk assessment for this type of work. Traditional enforcement does not apply because there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Entergy procedures. This finding is more than minor because it is similar to Example 7.e in Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that, the licensee's risk assessment failed to consider maintenance activities that could increase the likelihood of initiating events.

The inspectors assessed the finding using Inspection Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, "Assessment of Risk Deficit," and determined the finding to be of very low safety significance (Green). Equipment included in the overall risk assessment due to maintenance or surveillance activities included the 31 boric acid transfer pump and the nuclear power range channel N42 axial offset calibration. The aggregate risk for the equipment removed from service, not including the nuclear instrument calibration, represented a core damage frequency (CDF) of  $1.12 \times 10^{-5}$  per year. The aggregate risk including the nuclear instrument calibration represented a CDF of  $1.66 \times 10^{-5}$  per year. Although the actual aggregate CDF for the maintenance activities was higher than initially calculated, the overall risk remained very low, and required no additional risk management actions. The inspectors determined the incremental core damage probability deficit (ICDPD) from the licensee's CDF; the actual duration of maintenance activities (approximately 1.82 hours); and calculated the ICDPD to be 1.12

$\times 10^{-9}$ . This was determined to be a Green finding having very low safety significance because the calculated risk deficit was not greater than  $1 \times 10^{-6}$ .

The inspectors determined that the finding had a cross-cutting aspect in the area of human performance because, during work planning for emergent maintenance on nuclear power range channel N42, the licensee did not appropriately incorporate risk insights in accordance with 10 CFR Part 50.65(a)(4) and the Site Management Manual IP-SMM-WM-101, "Online Risk Assessment."

Enforcement: 10 CFR Part 50.65(a)(4) requires that before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety. Contrary to the above, the inspectors identified that on April 6, 2006, Entergy failed to perform a risk assessment for emergent maintenance conducted on nuclear power range channel N42. Entergy performed a risk assessment in response to this finding and entered the deficiency into their corrective action program. Because this finding is of very low safety significance and has been entered into the corrective action program (CR-IP3-2006-01093), this violation is being treated as an NCV, consistent with Section VI.A of the Enforcement Policy: NCV 05000286/2006003-01, Failure to Perform an Adequate Risk Assessment when required by 10 CFR Part 50.65(a)(4) for the Nuclear Power Range Channel N42 Axial Offset Calibration.

Corrective actions completed included a review of the risk assessment process and promulgation of lessons learned by the work week manager. Ongoing corrective actions include a review of risk assessment practices by the Operations department and issuance of a new condition report to evaluate ongoing risk assessment deficiencies.

#### 1R15 Operability Evaluations (71111.15 - 5 samples)

##### a. Inspection Scope

The inspectors selected a sample of Entergy's operability evaluations for review on the basis of potential risk significance. The operability evaluations selected as samples are associated with the condition reports listed below. The inspectors assessed the accuracy of the evaluations, the use and control of compensatory measures (if needed), and compliance with the Technical Specifications. The inspectors' review included a verification that the operability evaluations were made as specified by procedure ENN-OP-104, "Operability Determinations." The inspectors reviewed the technical adequacy of the evaluations. References used during these reviews included the Technical Specifications, the Technical Requirements Manual, the Updated Final Safety Analysis Report (UFSAR), and associated design basis documents. **The documents reviewed during the inspection are listed in the Attachment.** The following operability evaluation reviews were considered five inspection samples:



- Condition Report (CR) IP3-2006-01069, "Service Water leak on weld downstream of SWN-34-2;"
- CR IP3-2006-01596, "32 PAB [primary auxiliary building] Exhaust Fan inspection with 31 PAB Exhaust Fan out of service;"
- CR IP3-2006-01194, "Bus 3 Undervoltage for Reactor Protection System Inoperable;"
- CR IP3-2006-01246, "31 SI Pump support evaluation;" and
- CR IP3-2006-01730, "EDG Peak Load Analysis."

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 6 samples)

a. Inspection Scope

The inspectors reviewed post maintenance testing (PMT) procedures and associated testing activities to assess whether: (1) the effect of testing in the plant had been adequately addressed by control room personnel; (2) the testing was adequate for the maintenance performed; (3) the acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing documents; (4) the test instrumentation had current calibrations, range, and accuracy for the application; and (5) the test equipment was removed following testing.

The selected testing activities involved components that were risk significant as identified in the Unit 3 Individual Plant Examination. **The documents reviewed during the inspection are listed in the Attachment.** The following testing activities were evaluated, and constituted six inspection samples:

- WO IP3-06-00247, "FCV [flow control valve] 405A Manual Station in CCR [Central Control Room] Not Functioning Correctly;"
- WO-IP3-05-20245, "32 EDG Following Quarterly Maintenance;"
- WO-IP3-06-00998, "32 FRV [flow regulating valve] Packing Leakage;"
- WO-IP3-06-00800, "AOV [air-operated valve] 791 Retest;"
- WO-IP3-06-16321, "Fire Pump Functional Test;" and
- WO IP3-06-13638, "32 EDG East Side Air Start Motor Reconfiguration."

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 6 samples)a. Inspection Scope

The inspectors observed portions of the surveillance tests listed below and reviewed the test procedures to assess whether: (1) the test preconditioned any of the components; (2) the effect of the testing was adequately addressed in the control room; (3) the scheduling and conduct of the tests were consistent with plant conditions; (4) the acceptance criteria demonstrated system operability consistent with design requirements and the licensing basis; (5) the test equipment range and accuracy were adequate for the application, and the test equipment was properly calibrated; (6) the test was performed in the proper sequence in accordance with the test procedure; and (7) the affected system was properly restored to the correct configuration following the test. **The documents reviewed during the inspection are listed in the Attachment.** The inspection of the following tests represented six inspection samples (one RCS leak detection sample, two in-service test (IST) samples and three surveillance test samples):

- 3PC-R7, Revision 11, "Containment Sump Flow Channel Calibration;"
- 3-PT-Q120A, Revision 10, "31 ABFP (Motor Driven) Surveillance Test and IST;"
- **3-PT-M62A, Revision 1, "480V UV/Degraded Grid Protection System Bus 2A/3A;"**
- 3PT-M13B1, Revision 8, "RPS Logic Channel Functional Test;"
- **3-PT-Q93A, Revision 1, "Reactor Coolant Flow Functional Test - Channel 1;"**  
**and**
- 3-PT-Q016, Revision 19, "EDG and Containment Temperature SW Valves SWN-FCV-1176 & 1176A and SWN-TCV-1104 & 1105."

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - 1 sample)a. Inspection Scope

The inspector reviewed documentation on temporary alteration TA-05-3-080-001, "Installation of Remote Fill Line for 31 RCP Upper Oil Reservoir." The inspectors assessed the temporary modification, any planned compensatory actions, and reviewed drawings to evaluate any potential impact on equipment indications, alarms, or protective functions. The inspection represented one inspection sample.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies  
(71114.05 (OA) - 1 sample)a. Inspection Scope

A region-based specialist 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 on June 6 and 7, 2006, per the Reactor Oversight Process deviation authorized by the NRC Executive Director of Operations in a memorandum signed on October 31, 2005.

In order to assess the continued effectiveness of Entergy's corrective actions, the inspector discussed and reviewed the corrective actions implemented and all condition reports written against the current siren system since the inspector's March 2006 inspection. To assess the effectiveness of the corrective actions and the performance of Entergy's communication systems used in conjunction with the siren system, the inspector observed the performance of the monthly emergency planning communication test conducted on June 7, 2006. This test was conducted, in part, to validate the proper operation of the recently installed Radiological Emergency Communication System and the local four county Executive Hotline. The inspector monitored the test from the Indian Point emergency operations facility and observed the use of the two phone systems to establish contact with the local four county operation centers and warning points, and with the New York State Emergency Management Office (SEMO). On June 28, 2006, the inspectors observed the full siren sounding test from the emergency offsite facility and at siren W-46.

The inspector discussed, with the assigned project manager, the status of the new siren system to understand Entergy's progress toward meeting the milestone dates required by the NRC's Confirmatory Order dated January 31, 2006. The inspector also reviewed and discussed the initial Indian Point Energy Center prompt alert and notification system design report, which Entergy had submitted to SEMO for review. The inspector learned of planned changes to this submittal, such as the intent to add two new transmission towers for siren actuation to supplement the two existing towers. The inspector also visited a site in Putnam County to observe the construction and installation of one of the new siren towers in order to assess the progress of the installation and compliance with the schedule. The inspection represented one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - 1 sample)a. Inspection Scope

The inspectors observed an emergency preparedness drill conducted on June 14, 2006. The inspectors used NRC Inspection Procedure 71114.06, "Drill Evaluation," as guidance and criteria for evaluation of the drill. The inspectors observed the drill and critiques that were conducted from the participating facilities on-site, including the Indian Point Unit 3 plant simulator, and the emergency operations facility. The inspectors focused the reviews on the identification of weaknesses and deficiencies in classification; and notification timeliness, quality, and accountability of essential personnel during the drill. The inspectors observed Entergy's critique and compared the licensee's self-identified issues with the observations from the inspectors' review to ensure that performance issues were properly identified. **The documents reviewed during the inspection are listed in the Attachment.** The observation of the drill represented one sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 8 samples)a. Inspection Scope

From May 1 to May 11, 2006, the inspector conducted the following activities during refueling outage 2R17 and during a subsequent in-office review of an unintended exposure of a worker during core support barrel installation.

(1) The following exposure significant work areas were evaluated to determine if radiological controls (e.g., surveys, postings, and barricades) were acceptable:

- Sump strainer modification;
- Reactor disassembly/reassembly;
- Steam generator primary inspection;
- Scaffolding;
- Valve work;
- Reactor coolant pump work; and
- Core support barrel replacement.

(2) The radiation work permits (RWPs) associated with the above work activities were reviewed with respect to high radiation area controls, including electronic dosimeter alarm setpoints.

- (3) With respect to the work activities listed in (1) above, a walkdown of these work areas was conducted with a radiation survey instrument to determine whether:
- RWPs, procedures, and engineering controls were in place;
  - Entergy's surveys and postings were complete and accurate; and
  - To verify that air samplers were properly located.
- (4) The work activities listed in (1) above were reviewed against the radiological control requirements as specified in the applicable RWP and "as low as reasonably achievable" (ALARA) reviews, as well as verbal instructions provided by radiation protection technicians during radiological briefings to workers.
- (5) With respect to the work activities listed in (1) above, the conduct of necessary system breach surveys and evolving radiological hazards associated with work activities were observed to evaluate the radiation protection job coverage and contamination controls.
- (6) During observations of the work activities listed in (1) above, radiation worker performance was evaluated with respect to radiological work requirements and radiological briefing instructions.
- (7) Corrective action reports related to access controls were reviewed to determine if the follow-up activities were conducted in an effective and timely manner commensurate with safety and risk (see Section 4OA2).
- (8) Licensee documents associated with a May 5, 2006 PI event were reviewed to determine if there were any overexposures or substantial potential for overexposure associated with this incident.

The inspector verified that Entergy was properly implementing physical, engineering, and administrative controls for access to high radiation areas and other radiologically controlled areas, and that workers were adhering to these controls when working in these areas. Implementation of the access control program was reviewed against the criteria contained in 10 CFR 20, Indian Point Unit 3 Technical Specifications, and Entergy's procedures. The inspections constituted eight inspection samples.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 5 samples)

a. Inspection Scope

From May 1 to May 11, 2006, the inspector conducted the following activities to verify that Entergy was properly maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). Implementation of the ALARA program was

reviewed against the criteria contained in 10 CFR 20.1101(b) and Entergy's procedures. The following inspections constituted five inspection samples.

- (1) The plant collective exposure history trend and current three-year rolling average collective exposure data was reviewed.
- (2) The following highest exposure work activities for the Unit 2, Spring 2006 refueling outage were selected for review:
  - Sump strainer modification;
  - Reactor disassembly/reassembly;
  - Steam generator primary inspection;
  - Scaffolding;
  - Valve work;
  - Reactor coolant pump work; and
  - Core support barrel replacement.
- (3) The site procedure associated with maintaining occupational exposures ALARA, 0-RP-RWP-400, "RWP Preparation and ALARA Planning," was reviewed to evaluate the processes used to estimate and track work activity exposures.
- (4) With respect to the highest exposure work activities listed in (2) above, these job sites were observed to evaluate if surveys and ALARA controls were implemented as planned. Radiation worker and radiation protection technician performance was observed during the performance of these work activities to demonstrate the ALARA principles.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Gaseous and Liquid Effluents (71122.01 - 10 samples)

a. Inspection Scope

The inspector reviewed the following documents to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs. The requirements for radioactive effluent controls are specified in the Technical Specifications (TS) and the Offsite Dose Calculation Manual (ODCM). The following inspections constituted ten inspection samples.

- (1) The 2004 and 2005 Radiological Annual Effluent Release Reports were reviewed, including calculated public dose assessments. The inspector evaluated the licensee's analysis of this abnormal release pathway and verified that the licensee had in place a program of sampling and dose assessment for this effluent pathway. Chapter 11 of the Updated Final Safety Analysis Report

(UFSAR) for Units 1 and 2 and Unit 3 were reviewed for those sections that described the gaseous and liquid radioactive waste systems. The latest Quality Assurance Audit (QA Audit QA-06-2005-IP-1, "IPEC Effluent and Environmental Programs," conducted 9/19-12/5/2005) was also reviewed.

- (2) The inspector observed the following plant equipment and work activities to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs:
- Walkdown of the radioactive gaseous and liquid effluent radiation monitoring (RMS) and effluent sampling systems to determine equipment operability and material condition;
  - Observation of effluent sampling and laboratory analysis of those samples;
  - Walkdown to determine the operability and material condition of air cleaning systems; and
  - Control room walk down of effluent RMS displays to verify that the control room and local RMS readouts were in agreement, and to verify the effluent RMS alarm set points.

The inspector assessed the licensee's understanding of the on-site ground water contamination problem that was leading to the abnormal offsite liquid release of tritium and strontium-90 via this pathway. The inspector verified that the licensee had developed a technical basis for the onsite ground water monitoring program, understood the groundwater flow patterns for the site, and had in place acceptable dose calculation methodology for this pathway.

- (3) Selected gaseous and liquid radioactive waste release permits for 2005 and 2006 to date were reviewed with respect to procedural and ODCM requirements. The calculations were independently verified.
- (4) Recent Unit 2 liquid effluent releases through effluent radiation monitor R-54 were reviewed. This monitor was inoperable, and the required program for compensatory sampling and analysis for radioactive effluent releases was verified.
- (5) Changes to the ODCM (Revision 9 for Units 1 and 2, Revision 17 for Unit 3) were reviewed along with the justifications for each change.
- (6) Monthly radioactive effluent dose projections were reviewed for each month of 2005 and 2006 to date with respect to TS and ODCM methodology, and 10 CFR 50, Appendix I public dose requirements. The inspector verified calculations to ensure no regulatory requirements were exceeded.
- (7) The inspector reviewed the most recent air cleaning system filter surveillance results required by Technical Specifications. This included visual inspection, pressure differential, in-leakage tests, laboratory charcoal efficiency test, and air flow capacity test, as required for the following:

- Unit 2 control room ventilation system;
- Unit 3 control room ventilation system; and
- Unit 3 containment fan cooler unit 32.

(8) The inspector reviewed the most recent calibration results for the gaseous and liquid effluent radiation monitors and associated flow rate measurement devices as required by the ODCM for the following:

- Unit 2 liquid radioactive waste (R54);
- Unit 2 plant vent (R43/44);
- Unit 3 liquid radioactive waste (R18);
- Unit 3 plant vent (R14); and
- Unit 3 plant vent, wide range (R27).

The inspector also reviewed the calibrations of the laboratory instrumentation (gamma ray spectrometers and liquid scintillation counting systems) and sample preparation apparatus used for the analysis of effluent samples.

Quality Control data for this instrumentation was reviewed in order to verify that the instrumentation was being operated within acceptable performance parameters.

(9) Implementation of the laboratory quality assurance program for the analysis of effluent samples was reviewed, including the interlaboratory Quality Control program and the interlaboratory Quality Control program. The inspector also reviewed Quality Assurance Audit QA-06-2005-IP-1, conducted from September 19, 2005 to December 5, 2005 of the IPEC effluent and environmental programs.

(10) The inspector reviewed eight condition reports relative to the effluent control programs at Units 1, 2 and 3 from April 2005 to May 2006. **The documents reviewed during the inspection are listed in the Attachment.** (see Section 4OA2).

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03 - 10 samples)

a. Inspection Scope

(1) The inspector reviewed the current Annual Radiological Environmental Operating Report, and Entergy assessment results, to verify that the REMP was implemented as required by TS and ODCM. The review included changes to the ODCM with respect to environmental monitoring commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. The inspector also reviewed the ODCM to identify environmental monitoring stations. In addition, the inspector reviewed:



- Entergy self-assessments and audits;
  - Event reports;
  - Inter-laboratory comparison program results;
  - The updated final safety analysis report (UFSAR) for information regarding the environmental monitoring program and meteorological monitoring instrumentation; and
  - The scope of the audit program to verify that it met the requirements of 10 CFR 20.1101.
- (2) The inspector walked down six air particulate and iodine sampling stations, three ground water sampling locations, and seven thermoluminescent dosimeter (TLD) monitoring locations to determine that they were located as described in the ODCM and to determine the equipment material condition.
- (3) The inspector observed the collection and preparation of a variety of environmental samples to include airborne particulate, iodine, and Hudson River aquatic vegetation samples. Other sample locations and sample aliquot compositing methods were demonstrated to include water inlet and discharge points, and shoreline sediment samples.
- (4) The inspector reviewed meteorological instruments to ensure they were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and Entergy procedures. The inspector reviewed the meteorological data readout and recording instruments reflecting the control room readout and the tower to ensure they were operable and provided the same data values.
- (5) The inspector reviewed each event documented in the Annual Radiological Environmental Monitoring Report which involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause and corrective actions. The inspector conducted a review of Entergy's assessment of any positive sample results.
- (6) The inspector reviewed any significant changes made by Entergy to the ODCM as the result of changes to the land census or sampler station modifications since the last inspection. The inspector also reviewed technical justifications for any changed sampling locations and verified that Entergy performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

- (7) The inspector reviewed the calibration and maintenance records for air samplers. The inspector reviewed:
- The results of Entergy's interlaboratory comparison program to verify the adequacy of environmental sample analyses performed by Entergy;
  - Entergy's quality control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies;
  - Entergy's determination of any bias to the data and the overall effect on the REMP; and
  - Quality Assurance audit results of the program to determine whether Entergy met the TS and ODCM requirements.
- (8) The inspector verified that the appropriate detection sensitivities with respect to TS and ODCM are utilized for counting samples and reviewed the results of the quality control program including the interlaboratory comparison program to verify the adequacy of the program.
- (9) The inspector observed the health physics control point egress point from the radiologically controlled area (RCA) where Entergy monitors potentially contaminated material leaving the RCA. The inspector inspected the methods used for control, survey, and release from these areas including observing the performance of personnel surveying and releasing material for unrestricted use.
- (10) The inspector inspected radiation monitoring instrumentation to ensure it was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspector reviewed Entergy's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in Circular 81-07, "Control of Radioactively Contained Material," Information Notice 85-92, "Surveys of Wasted Before Disposal from Nuclear Reactor Facilities," and HPPOS-221, "Lower Limit of Detection (LLD) for Potentially Contaminated Oil."
- (11) The inspector reviewed Entergy's audits and self-assessments related to the radiological environmental monitoring program since the last inspection to determine if identified problems were entered into the corrective action program as appropriate. Selected corrective action reports were reviewed since the last inspection to determine if identified problems accurately characterized the causes and corrective actions were assigned to each commensurate with their safety significance. Any repetitive deficiencies were also assessed to ensure that Entergy's self-assessment activities were identifying and addressing these deficiencies.
- (12) The inspectors verified several commitments made by Entergy as described in Entergy letter to the NRC dated April 10, 2006. Quarterly tritium and strontium-90 analyses of site perimeter monitoring well samples (MW-38, 48, 51, and 40) had been performed during the second quarter of 2006 and the sampling requirements were incorporated in Radiation Protection Standing Order RPSO-2006-03, "Monitoring Well/REMP Water Sampling."

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151 - 1 sample)

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 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, calculation 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. In addition, the inspectors also interviewed licensee personnel responsible for the PI data collection, evaluation, and distribution. This inspection activity represents the completion of one sample.

Reactor Safety Cornerstone

- Unplanned Transients per 7,000 Critical Hours (January 2004 - December 2005)

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Daily Review

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. Findings

No significant findings were identified.

.2 Semi-annual Trend Review (71152 - 1 sample)

a. Inspection Scope

The inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue. The inspectors included in this review repetitive or closely related issues that may have been documented by Entergy outside of the normal Corrective Action Program (CAP), such as trend reports, performance indicators, major equipment problem lists, maintenance rule assessments and maintenance and CAP backlogs.

The inspectors reviewed Entergy's CAP database during the first and second quarters of 2006 to assess the total number and significance of condition reports written in various subject areas such as equipment or processes and to discern any notable trends in these areas. The inspectors reviewed Entergy's quarterly assessment/trend reports for both CAP and Quality Assurance for the fourth quarter of 2005 and the first quarter of 2006 to ensure they were appropriately evaluating and trending identified conditions. **The documents reviewed during the inspection are listed in the Attachment.**

b. Findings

No significant findings were identified.

.3 PI&R Annual Sample - Selected Issue Follow-up Inspection - Station and Unit Auxiliary Transformer Tap Changer Alarms / 480VAC Bus Undervoltage Alarms (71152 - 1 Sample)

a. Inspection Scope

The inspectors conducted a review of problems associated with transformer tap changer and 480 volt safety bus undervoltage alarms, and the effectiveness of the associated corrective actions. The alarms were noted to occur during offsite power transients and large motor starts. The inspectors interviewed the engineers responsible for the system, reviewed condition reports from 2003 to present which documented the issue and reviewed the associated engineering evaluations and corrective actions. The inspectors evaluated plant response following relay replacements and the addition of a time delay circuit. **The documents reviewed during the inspection are listed in the Attachment.**

b. Findings

No significant findings or observations were identified.

.4 Occupational Radiation Safety Cornerstone (71122.01)

a. Inspection Scope

The inspector reviewed 25 corrective action condition reports that were initiated between July 2005 and May 2006 which were associated with the radiation protection program. The inspector verified that problems identified by these condition reports were properly characterized in the licensee's event reporting system, and that applicable causes and corrective actions were identified commensurate with the safety significance of the radiological occurrences.

b. Findings

No significant findings or observations were identified.

.5 Public Radiation Safety Cornerstone (71122.01)

a. Inspection Scope

The inspector reviewed eight condition reports initiated between April 2005 and May 2006 relative to the radioactive gaseous and liquid effluent control programs. The inspector verified that problems identified by these condition reports were properly characterized in the licensee's event reporting system, and that applicable causes and corrective actions were identified commensurate with the safety significance of the occurrences. **The documents reviewed during the inspection are listed in the Attachment.**

b. Findings

No significant findings or observations were identified.

.6 Public Radiation Safety Cornerstone (71122.03)

a. Inspection Scope

The inspector reviewed the following four corrective action condition reports that were initiated between January 2004 and May 2006, and were associated with the radiological environmental monitoring program:

- CR-IP3-2006-1784, "Control Room Met Tower Wind Speed Reads Inaccurately;"
- LO-JAFLO-2005-0134, "Radiation Protection Self Assessment Tracking Report;"
- CR-IP3-2004-3863, "Meteorological Data Review Showed 122 m to 10 m Delta-T Reading High for Existing Conditions;" and
- CR-IP3-2005-4690, "122 m Temperature Sensor Failed and is Reading Low."

The inspector verified that problems identified by these condition reports were properly characterized in the licensee's event reporting system, and that applicable causes and

corrective actions were identified commensurate with the safety significance of the radiological occurrences.

b. Findings

No significant findings or observations were identified.

4OA5 Other Activities

1. Implementation of Temporary Instruction (TI) 2515/165 - Operational Readiness of Offsite Power and Impact on Plant Risk

a. Inspection Scope

The objective of TI 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," was to gather information to support the assessment of nuclear power plant operational readiness of offsite power systems and impact on plant risk. The inspector evaluated licensee procedures against the specific offsite power, risk assessment, and system grid reliability requirements of TI 2515/165.

The information gathered while completing this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation on April 3, 2006.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

On June 28, 2006, the inspectors presented the inspection results to Mr. Fred Dacimo 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  
P. Rubin, General Manager, Plant Operations  
J. Ventosa, Director, Engineering  
J. Comiotes, Director, Nuclear Safety Assurance  
E. O'Donnell, IP3 Operations Manager  
A. Vitale, Site Operations Manager  
T. Barry, Security Manager  
T. Carson, Manager, Maintenance  
P. Conroy, Manager, Licensing  
F. Inzirillo, Emergency Planning Manager  
M. Miele, Project Manager, Operations Support  
T. Jones, Licensing Supervisor  
L. Lee, Systems Engineering Supervisor  
T. Orlando, Manager, Systems Engineering  
C. Smyers, Shift Manager, Operations  
P. Parker, Superintendent, Maintenance  
M. Imai, Systems Engineer  
S. Wilkie, Fire Protection Engineer  
T. Beasley, Systems Engineer

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

Opened and Closed

05000286/2006003-01 NCV Failure to Perform an Adequate Risk Assessment when required by 10 CFR 50.65(a)(4) for the Nuclear Power Range Channel N42 Axial Offset Calibration.

**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

Procedures:

OD-8, Rev 1: "Guidelines for Severe Weather"

OAP-048, Rev 2: "Seasonal Weather Preparation"

Miscellaneous:

IP3-DBD-324, Rev 2: "Design Basis Document for the Service Water System"

Condition Reports:

IP3-2005-03539      IP3-2006-00619      IP3-2005-03544

Work Orders:

IP3-05-00712      I3-027709969      I3-027709968

**Section 1R04: Equipment Alignment**

Procedures:

3-COL-EL-5, Rev 28: "Diesel Generators"  
 3-PT-M079A, Rev 36: "31 EDG Functional Test"  
 3-PT-M079C, Rev 36: "33 EDG Functional Test"  
 3-COL-RW-2A, Rev 12: "Service Water Header Realignment"  
 3-COL-RW-2, Rev 41: "Service Water System"

Drawings

**New York Power Authority**, 9321-F-20333, Rev 49: "Flow Diagram - Service Water System"  
 New York Power Authority, 9321-F-27223, Rev 41: "Flow Diagram - Service Water System  
 Nuclear Steam Supply Plant"

Condition Reports

IP3-2004-02126	IP3-2005-02402	IP3-2006-00561
IP3-2004-02243	IP3-2005-03432	IP3-2006-00569
IP3-2004-02438	IP3-2005-04080	IP3-2006-01451
IP3-2004-03957	IP3-2005-05500	IP3-2006-01465
IP3-2004-04169	IP3-2005-05800	IP3-2006-01529
IP3-2005-00429	IP3-2006-00392	

**Section 1R05: Fire Protection**

Procedures:

**SMM-DC-901: "IPEC Fire Protection Program Plan"**  
**FP-19, Rev 10: "Fire Door Inspection"**  
**AP-64.1, Rev 2: "Fire Protection/Appendix R Systems and Components Governed by Technical Requirements Manual and Technical Specifications"**  
 ENN-DC-161, Rev 1: "Transient Combustible Program"  
 FP-31, Rev 3: "Fire Door Inspection (Balance of Plant)"  
 IP-SMM-TQ-122, Rev. 0: "Fire Protection Training Program"  
 3-PT-M042B, Rev 3: "Diesel Fire Pump Test"  
 3-ENG-001-FIR, Rev 7: "Diesel Driven Fire Pump Engine Major Preventive Maintenance Inspection"  
 3-Eng-002-FIR, Rev 6: "Diesel Driven Fire Pump Engine Minor Preventive Maintenance Inspection"  
 0-CY-2510, Rev 2: "Closed Cooling Water Chemistry Specifications and Frequencies"  
 0-CY-2515, Rev 0: "Adding Chemicals to Closed Cooling Systems"



Miscellaneous:

MSE 88-03-004: "Use of New Corrosion Inhibitor for Cummins Motors"

NYP&A #1108-100000811: "Cummins Construction/Industrial Diesel Engine Operation and Maintenance Manual"

Condition Reports:

IP3-2003-06107	IP3-2005-03655	IP3-2006-01729	IP3-2003-05938
IP3-2006-01527	IP3-2001-03228		
<b>IP3-2006-00871</b>	<b>IP3-2006-02136</b>	<b>IP3-2006-01384</b>	IP3-2006-01618
IP3-2006-01732	IP3-2006-01798		

Work Orders:

IP3-06-15596	IP3-06-15597	IP3-06-15971
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**Section 1R06: Flood Protection Measures**

Procedures:

3-AOP-FLOODING-1, Rev 2: "Flooding"

3-ARP-22, Rev 21: "Waste Disposal Panel"

Condition Reports:

IP2-2006-02256	IP3-2006-01317
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**Section 1R11: Licensed Operator Requalification Program**

Procedures:

3-AOP-138KV-1: "Loss of Power to 6.9KV Bus 5 and/or Bus 6"

3-AOP-13.8KV-1: "Loss of 13.8KV Power"

Miscellaneous:

**Lesson Plan- I3SG-LOR-AOP020**

**Section 1R12: Maintenance Effectiveness**

Procedures:

3-PT-M079A, Rev 34: "31 EDG Functional Test"

3-IC-PC-I-T-31EDG, Rev 10: "EDG #31 Temperature Instruments Calibration"

3-IC-PC-I-EDG-EL31, Rev 1: "Diesel Generator No. 31 Electrical Instrumentation"

3-IC-PC-I-P-31DF, Rev 14: "Diesel Generator No. 31 Fuel Oil Pressure"

3-IC-PC-I-P-31DJW, Rev 9: "Diesel Generator No. 31 Jacket Water Pressure"

3-IC-PC-I-P-31DLO, Rev 14: "Diesel Generator No. 31 Lube Oil Pressure"

3-IC-PC-I-L-1204S, Rev 5: "Diesel Generator Fuel Oil Storage Tank No. 31 Level"

FAN-008-HVAC, Rev 11: "CCR Air Conditioning System Preventive Maintenance"

ENN-DC-171, Rev 2: "Maintenance Rule Monitoring"

Condition Reports:

IP3-2006-01455	IP3-2006-01450	IP3-2006-01451	IP3-2006-01616
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IP3-2006-01665	IP3-2006-00582	IP3-2006-00439	IP3-2006-00438
IP3-2006-00362	IP3-2006-00327	IP3-2006-00324	IP3-2006-00313
IP3-2006-00231	IP3-2006-00029	IP3-2005-02305	IP3-2004-01125
IP3-2006-01895	IP3-2005-01134	IP3-2005-02264	IP3-2005-02376
IP3-2005-02385	IP3-2005-05611	IP3-2005-05632	IP3-2005-05753

**Work Orders:**

IP3-04-06378	IP3-06-00359	IP3-06-00245	IP3-04-16590
IP3-05-19143	IP3-05-19153	IP3-04-16583	IP3-04-16583
IP3-03-14625	IP3-03-14626	IP3-05-22668	IP3-05-15523
IP3-06-00220	IP3-06-06513	IP3-05-22501	IP3-05-13958
IP3-06-00072	IP3-04-20671	IP3-04-20675	IP3-02-21110
IP3-02-21109	IP3-05-15522	I3-960382100	IP3-04-06378

**Miscellaneous:****IP3-RPT-HVAC-01904: "Auxiliary Feedwater Building HVAC, Electrical Tunnel HVAC, Control Building HVAC and Control Room HVAC Systems"**

ER No. IP3-02-24796: "Replacement Jacket Water Pressure Switches for EDG 31, 32"  
 System Health Report, IP3-Reactor Coolant System for 4<sup>th</sup> Quarter 2005 and 1<sup>st</sup> Quarter 2006  
 IP3-DBD-314, Design Basis Document for the Reactor Coolant System  
 Indian Point Nuclear Generating Station Units 2 and 3 Maintenance Rule Basis Document -  
 Reactor Coolant System (RCS), Rev. 1

**Drawings**

Entergy Dwg. No. 9321-F-27233: "Flow Diagram of Nitrogen to Nuclear Equipment"

**Section 1R13: Maintenance Risk Assessment and Emergent Work Control****Procedures:****IP-SMM-WM-101: "On-Line Risk Assessment"**

3-PC-Q109B: "Nuclear Power Range Channel N 42 Axial Offset Calibration"  
 3-SOP-FW-1, Rev 43: "Main Feedwater System Operation"  
 ENG-002-FIR, Rev 6: "Diesel Driven Fire Pump Engine Minor PM Inspection"  
 3-PT-R084, Rev 16: "Fire Pump Functional Test"  
 3-ENG-001-FIR, Rev 7: "Diesel Driven Fire Pump Engine Major Prev Maint Insp"  
 0-CY-2510, Rev 2: "Closed Cooling Water Chemistry Specifications and Frequencies"  
 0-CY-2515, Rev 0: "Adding Chemicals to Closed Cooling Systems"

**Work Orders:**

IP3-06-15884	IP3-06-16024
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**Condition Reports:**

IP3-2006-01082	IP3-2006-01093	IP3-2006-00245	IP3-2006-01471
IP3-2006-01533	IP3-2006-01527	IP3-2006-01524	IP3-2005-04862
IP3-2003-06155	IP3-2003-06114	IP3-2003-06107	IP3-2006-01574
IP3-2006-01598			

**Miscellaneous:**

IP3-DBD-321, Rev 2: "New York Power Authority, Indian Point 3 Nuclear Power Plant Water Supply and Distribution System, Tab I"

**Section 1R15: Operability Evaluations**

Procedures:

**EN-OP-104: "Operability Determinations"**

**OAP-026, Rev 0: "Determination of Operability"**

ENN-CS-S-008, Rev 0: "Pipe Wall Thinning Structural Evaluation"

3-SOP-V-001, Rev 14: "PAB Heating and Ventilation System Operation"

IP3-DBD-315, Rev 1: "Indian Point 3 Primary Auxiliary Building Heating and Ventilation System"

Fan-006-VSS, Rev 6: "Inspection of PAB/VC Purge Exhaust Fan and Filter Replacement"

Calculations:

**IP-CALC-06-00113, Rev 0: "Pipe Leak Evaluation for Line 407 Downstream SWN-34-2"**

Drawings:

**Entergy Nuclear Northeast, 9321-F-27223, Rev 41: "Flow Diagram Service Water System"**

Condition Reports:

IP3-2006-01069      IP3-2006-01995      IP3-2006-00679

Work Orders:

IP3-06-14877      IP3-06-14878      IP3-06-14879      IP3-06-14880  
IP3-06-14885      IP3-06-16254      IP3-05-13617

**Miscellaneous:**

**Maintenance Rule Basis Document for system E32-0090, E32-0092 & E32-0099: "Fuel Storage Building HVAC, Primary Auxiliary Building HVAC and Containment Purge and Supply Systems"**

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

Procedures:

**3-PT-Q120B, Rev 10: "32 ABFP (Turbine Driven) Surveillance and IST"**

**OAP-024, Rev 2: "Operations Testing"**

**OAP-030, Rev 0: "Infrequently Performed Tests and Evolutions"**

**3-GNR-004-ELC, Rev 25: "Emergency Diesel General Quarterly Inspection"**

**3-PT-M79B, Rev 36: "32 EDG Functional Test"**

**3-PT-R084, Rev 16: "Fire Pump Functional Test"**

Condition Reports

IP3-2006-01419      IP3-2006-01533      IP3-2006-01574      IP3-2006-01822

Work Orders

IP3-06-00247      IP3-05-20192      IP3-05-20243      IP3-05-20244  
IP3-05-20245      IP3-05-23569      IP3-06-13795      IP3-06-18472

**Section 1R22: Surveillance Testing**Procedures:**3-PT-Q120A, Rev 10: "31 ABFP (Motor Driven) Surveillance and IST"**

3-PT-W019, Rev 5: "Electrical Verification of Offsite Power Sources and AC Distribution"

3-PT-Q93A, Rev 1: "Reactor Coolant Flow Functional Test - Channel 1"

3-PT-Q016, Rev 19: "EDG and Containment Temperature SW Valves SWN-FCV-1176 &amp; 1176A and SWN-TCV-1104 &amp; 1105"

Condition Reports

IP3-2006-00440	IP3-2006-01313	IP3-2002-00012	IP3-2002-01040
IP3-2002-01994	IP3-2002-03667	IP3-2003-00924	IP3-2003-03199
IP3-2004-01389	IP3-2004-01905	IP3-2004-03123	IP3-2004-04213
IP3-2005-04479	IP3-2005-05472	IP3-2006-00613	IP3-2006-01531
IP3-2006-01536			

Work Orders:

IP3-06-10649	IP3-03-14933	IP3-06-00790
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**Miscellaneous**

PFM-22A, Rev 7: "Inservice Testing Program #9"

**Section 1R23: Temporary Plant Modifications**Procedures:

ENN-DC-136, Rev 8: "Temporary Alterations"

Condition Reports

IP3-2005-04673	IP3-2006-00988	IP3-2005-02491	IP3-2005-04660
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Work Orders:

IP3-05-10584	IP3-05-22907	IP3-05-22908
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**Section 1EP6: Emergency Plan Drill**Procedures

IP-EP-410, Rev 3: "Protective Action Recommendations"

IP-EP-120, Rev 1: "Emergency Classification"

IP-EP-AD13, Rev 2: "IPEC Emergency Plan Administrative Procedures"

IP-EP-130, Rev 4: "Emergency Notification and Mobilization,"

IP-EP-430, Rev 3: "Site Assembly, Accountability and Relocation of Personnel Offsite"

IP-EP-250, Rev 9: "Emergency Operations Facility" (EOF)

Condition Reports:

IP3-2006-01829

**Section 2:**

Procedures

RWP Preparation and ALARA Planning, O-RP-RWP-400, Rev. 3

Condition Reports

IP3-2005-03609	IP2-2005-04152	IP2-2005-04150	IP2-2005-04105
IP2-2005-04131	IP2-2006-00928	IP2-2005-02913	IP2-2005-04262
IP3-2005-05372	IP3-2005-05457	IP2-2005-04319	IP2-2005-03296
IP3-2005-04011	IP2-2005-05302	IP2-2005-03915	IP3-2006-00432
IP2-2006-01028	IP2-2006-02005	IP2-2006-01243	IP2-2006-01241
IP3-2005-04010	IP2-2006-00444	IP3-2005-03944	IP2-2006-01896
IP2-2006-02233	IP2-2006-00193	IP2-2006-03322	IP2-2006-01957
IP3-2005-02758	IP2-2006-01995	IP3-2005-03268	IP2-2006-03278
IP3-2006-00008			

**Section 4OA4:**

Condition Reports:

IP3-2003-00795	IP3-2003-01442	IP3-2003-04495	IP3-2004-02158
IP3-2005-00132	IP3-2005-02688		

**Miscellaneous:**

ER IP3-03-14639

**Section 4OA5**

Procedures:

IP-SMM-WM-101, "On-Line Risk Assessment," Rev. 0  
IP-SMM-OP-104, "Offsite Power Continuous Monitoring and Notification," Rev. 3  
OAD-37, "Guidelines for Performing Risk Assessment," Rev. 14  
ONOP-EL-4, "Loss of Offsite Power (LOOP)," Rev. 12  
ONOP-EL-7, "Loss of a 480V Bus - Above Cold Shutdown," Rev. 6  
3-AOP-480V-1, "Loss of Normal Power to Any Safeguards 480V Bus," Rev. 1

**LIST OF ACRONYMS**

ABFP	auxiliary boiler feedwater pump
ADAMS	Agencywide Documents and Management System
ALARA	as low as reasonably achievable
AFW	auxiliary feedwater
AOP	abnormal operation procedure
CAP	corrective action program
CDF	core damage frequency
CFR	Code of Federal Regulations
CR	condition report
EDG	emergency diesel generator
EOF	Emergency Operations Facility
EOP	emergency operating procedure
EP	emergency preparedness
ICDPD	incremental core damage probability deficit
IP3	Indian Point Nuclear Generating Unit 3
IPEC	Indian Point Energy Center
IPEEE	individual plant examination of external events
LOOP	loss of offsite power
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	offsite does calculation manual
PARS	publicly available records
PI	performance indicator
PMT	post maintenance testing
RCA	radiologically controlled area
REMP	radiation effluent monitoring program
RMA	risk management action
RMS	radiation monitoring system
RP	radiation protection
RWP	radiation work permit
SCBA	self-contained breather apparatus
SDP	significance determination process
SEMO	State Emergency Management Office
SSC	systems, structures, and components
TI	temporary instruction
TLD	thermo luminescent dosimeter
TS	technical specification
USFAR	Updated Final Safety Analysis Report
WO	work order