



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

November 6, 2008

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

**SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 – NRC INTEGRATED  
INSPECTION REPORT 05000247/2008004**

Dear Mr. Pollock:

On September 30, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 2. The enclosed integrated inspection report documents the inspection results, which were discussed on October 17, 2008, with yourself and 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 three findings of very low safety significance (Green). All three of these findings were also determined to be violations of NRC requirements. However, because of their very low safety significance, and because the findings were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a written 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, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at Indian Point Nuclear Generating Station Unit 2.

In accordance with Title 10 of the Code of Federal Regulations Part 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 the 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/**

Mel Gray, Chief  
Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000247/2008004  
w/ Attachment: Supplemental Information

cc w/encl:

Senior Vice President, Entergy Nuclear Operations  
Vice President, Operations, Entergy Nuclear Operations  
Vice President, Oversight, Entergy Nuclear Operations  
Senior Manager, Nuclear Safety and Licensing, Entergy Nuclear Operations  
Senior Vice President and COO, Entergy Nuclear Operations  
Assistant General Counsel, Entergy Nuclear Operations  
Manager, Licensing, Entergy Nuclear Operations  
P. Tonko, President and CEO, New York State Energy Research and Development Authority  
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law  
A. Donahue, Mayor, Village of Buchanan  
J. G. Testa, Mayor, City of Peekskill  
R. Albanese, Four County Coordinator  
S. Lousteau, Treasury Department, Entergy Services, Inc.  
Chairman, Standing Committee on Energy, NYS Assembly  
Chairman, Standing Committee on Environmental Conservation, NYS Assembly  
Chairman, Committee on Corporations, Authorities, and Commissions  
M. Slobodien, Director, Emergency Planning  
P. Eddy, NYS Department of Public Service  
Assemblywoman Sandra Galef, NYS Assembly  
T. Seckerson, County Clerk, Westchester County Board of Legislators  
A. Spano, Westchester County Executive  
R. Bondi, Putnam County Executive  
C. Vanderhoef, Rockland County Executive  
E. A. Diana, Orange County Executive  
T. Judson, Central NY Citizens Awareness Network  
M. Elie, Citizens Awareness Network  
D. Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists  
Public Citizen's Critical Mass Energy Project  
M. Mariotte, Nuclear Information & Resources Service  
F. Zalzman, Pace Law School, Energy Project  
L. Puglisi, Supervisor, Town of Cortlandt  
Congressman John Hall  
Congresswoman Nita Lowey  
Senator Hillary Rodham Clinton  
Senator Charles Schumer

G. Shapiro, Senator Clinton's Staff  
J. Riccio, Greenpeace  
P. Musegaas, Riverkeeper, Inc.  
M. Kaplowitz, Chairman of County Environment & Health Committee  
A. Reynolds, Environmental Advocates  
D. Katz, Executive Director, Citizens Awareness Network  
K. Coplan, Pace Environmental Litigation Clinic  
M. Jacobs, IPSEC  
W. Little, Associate Attorney, NYSDEC  
M. J. Greene, Clearwater, Inc.  
R. Christman, Manager Training and Development  
J. Spath, New York State Energy Research, SLO Designee  
A. J. Kremer, New York Affordable Reliable Electricity Alliance (NY AREA)

ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Mel Gray, Chief  
Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000247/2008004  
w/ Attachment: Supplemental Information

Distribution w/encl:

|                               |                   |                                       |                                      |
|-------------------------------|-------------------|---------------------------------------|--------------------------------------|
| S. Collins, RA                | R. Nelson, NRR    | J. Hughey, NRR                        | B. Bickett, DRP                      |
| M. Dapas, DRA                 | M. Kowal, NRR     | M. Gray, DRP                          | G. Malone, DRP, SRI - Indian Point 2 |
| S. Williams, RI OEDO          | J. Boska, PM, NRR | A. Rosebrook, DRP                     | C. Hott, RI - Indian Point 2         |
| ROPreport Resources (All IRs) |                   | Region I Docket Room (w/concurrences) |                                      |

**SUNSI Review Complete: AAR (Reviewer's Initial)**

**ML083110566**

DOC. NAME: G:\DRP\BRANCH2\A - Indian Point 2\Inspection Reports\IP2 IR2008-004\IP2\_2008004 rev 3.doc

After declaring this document "An Official Agency Record" it **will** be released to the Public

To Receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure

"E" = Copy with attachment/enclosure "N" = No copy

|        |                 |             |          |
|--------|-----------------|-------------|----------|
| Office | RI/DRP          | RI/DRP      | RI/DRP   |
| Name   | GMalone/AAR for | ARosebrook/ | MGray/   |
| Date   | 11/04/08        | 11/05/08    | 11/06/08 |

OFFICIAL AGENCY RECORD

U.S. Nuclear Regulatory Commission

Region I

Docket No.: 50-247

License No.: DPR-26

Report No.: 05000247/2008004

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 2

Location: 450 Broadway, GSB  
Buchanan, NY 10511-0249

Dates: July 1, 2008 through September 30, 2008

Inspectors: G. Malone, Senior Resident Inspector, Indian Point 2  
C. Hott, Resident Inspector, Indian Point 2  
P. Cataldo, Senior Resident Inspector, Indian Point 3  
A. Koonce, Resident Inspector, Indian Point 3  
K. Young, Senior Reactor Inspector  
J. Noggle, Senior Health Physicist  
J. Commiskey, Health Physicist  
T. Nicholson, Senior Technical Advisor, Research  
S. Barr, Senior Emergency Preparedness Specialist

Approved By: Mel Gray, Chief  
Projects Branch 2  
Division of Reactor Projects

## TABLE OF CONTENTS

|  |     |
|--|-----|
| SUMMARY OF FINDINGS .....  | 3   |
| REPORT DETAILS.....  | 5   |
| REACTOR SAFETY .....   | 5   |
| 1R04 Equipment Alignment.....                                    | 5   |
| 1R05 Fire Protection .....                                       | 7   |
| 1R06 Flood Protection Measures .....                             | 8   |
| 1R11 Licensed Operator Requalification Program.....              | 9   |
| 1R12 Maintenance Effectiveness .....                             | 9   |
| 1R13 Maintenance Risk Assessments and Emergent Work Control..... | 10  |
| 1R15 Operability Evaluations .....                               | 10  |
| 1R18 Plant Modifications.....                                    | 13  |
| 1R19 Post-Maintenance Testing .....                              | 15  |
| 1R22 Surveillance Testing.....                                   | 16  |
| 1EP2 Alert and Notification System (ANS) Evaluation .....        | 17  |
| 1EP6 Drill Evaluation.....                                       | 17  |
| RADIATION SAFETY .....   | 18  |
| 2OS1 Access Control to Radiologically Significant Areas.....     | 18  |
| 2OS2 ALARA Planning and Controls .....                           | 20  |
| 2PS3 Radiological Environmental Monitoring Program (REMP) .....  | 20  |
| OTHER ACTIVITIES [OA] .....                                      | 22  |
| 4OA1 Performance Indicator Verification .....                    | 22  |
| 4OA2 Identification and Resolution of Problems .....             | 23  |
| 4OA3 Event Follow-up .....                                       | 25  |
| 4OA5 Other Activities.....                                       | 26  |
| 4OA6 Meetings .....  | 28  |
| ATTACHMENT: SUPPLEMENTAL INFORMATION .....                       | A-1 |
| KEY POINTS OF CONTACT.....                                       | A-1 |
| LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED .....                | A-1 |
| LIST OF DOCUMENTS REVIEWED.....                                  | A-1 |
| LIST OF ACRONYMS .....   | A-8 |

## SUMMARY OF FINDINGS

IR 05000247/2008-004; 07/01/2008 – 09/30/2008; Indian Point Unit 2; Equipment Alignment; Operability Evaluations; Plant Modifications.

This report covered a three-month period of inspection by resident and region based inspectors. Three findings of very low significance (Green), all of which were determined to be non-cited violations (NCV) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." Findings for which the significance determination process (SDP) does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

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

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a Green NCV of Technical Specification 5.4.1, "Administrative Controls - Procedures," because Entergy did not implement the Auxiliary Feedwater (AFW) operating procedures required by Regulatory Guide 1.33 Appendix A. Specifically, the inspectors identified an AFW drain valve that was not in the required position and an AFW isolation valve that was in the correct position but was not locked as required. Entergy evaluated the as-found configuration of the valves and determined that the AFW system operability was not impacted. Entergy also performed system alignment verifications of AFW and other safety-related systems as part of an extent-of-condition review.

The inspectors determined the finding was more than minor because it was associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. This finding was similar to the more-than-minor example 3.c found in IMC 0612 Appendix E in that more than one valve was unlocked or out of its required position. The inspectors determined the significance of the finding using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that this finding was of very low safety significance because the finding did not result in a loss of safety function and did not screen as potentially risk-significant due to external events initiating events. Specifically, the inspectors determined that the as-found configuration of the identified components did not adversely impact system operability. The finding had a cross-cutting aspect in the area of human performance because operators did not use adequate self and peer checking techniques when shutting an open drain valve or when attaching a locking device to an isolation valve. (H.4(a)) (Section 1R04)

- Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1, "Procedures," when Entergy did not implement on-line leak repair procedures to repair a steam leak on valve MS-2A. Specifically, Entergy performed multiple leak sealant injections on valve MS-2A without engineering controls described in station on-line leak repair procedures. Corrective actions planned included reviewing this issue with the planning and component engineering departments and determining if training on the on-line leak sealing procedures is warranted.

The finding was more than minor because, if left uncorrected, inadequate control of leak-sealant injections would become a more significant safety concern. The inspectors determined the significance of the finding using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The finding was determined to be of very low safety significance (Green) because it did not represent a loss of system safety function. Specifically, Entergy's operability evaluation concluded that the sealant that was injected extruded back out of the leak path and likely did not reach the valve's seat or hinge. The finding had a cross cutting aspect related to work control in the area of Human Performance. Entergy personnel did not appropriately plan work activities to conduct online leak repairs on a safety related component. Specifically, Entergy did not identify necessary engineering procedures to adequately perform leak seal repairs on MS-2A during the planning process. These procedures provide necessary limitations, contingencies, and abort criteria. (H.3.(a)) (Section 1R18)

- Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1, "Procedures," because Entergy did not implement portions of an engineering change package for an alarm setpoint change following modification to the city water tank minimum required water volume calculation. As a result, city water tank level dropped below the minimum water level required by the Technical Requirements Manual. Corrective actions included updating plant procedures and training of personnel.

The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the Cornerstone's objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the significance of the finding using a phase 1 analysis described in Inspection Manual Chapter 0609 Appendix F, "Fire Protection Significance Determination Process." The finding was determined to be of very low safety significance (Green) because the degradation rating was determined to be low. The finding had a cross-cutting aspect related to formally defining the authority and roles for decisions affecting nuclear safety in the area of Human Performance in that Entergy management did not ensure that roles and responsibilities were communicated clearly to a member of the engineering change team responsible for implementing Operations procedure changes. As a result, the proper procedure changes were not made to plant procedures and logs which ultimately led to unmitigated low levels in the city water tank. (H.1(a)) (Section 1R15)

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

Indian Point Nuclear Generating Station (Indian Point) Unit 2 operated at or near full power throughout the inspection period.

### 1. REACTOR SAFETY

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

#### 1R04 Equipment Alignment (71111.04Q - 3 samples)

##### .1 Partial System Walkdowns

##### a. Inspection Scope

The inspectors performed 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 to verify that the alignment of the available train supported its required safety functions. The inspectors also reviewed applicable condition reports (CR) and work orders to ensure that Entergy had identified and properly addressed equipment discrepancies that could potentially impair the capability of the available train, as required by Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action." The documents reviewed during these inspections are listed in the Attachment.

The inspectors performed a partial walkdown on the following systems, which represented three inspection samples:

- 22 auxiliary boiler feed pump (AFW) during 21 AFW pump maintenance;
- 21 instrument air during 22 instrument air dryer maintenance; and
- 23 emergency diesel generator during 96951 feeder outage.

##### b. Findings

Introduction: The inspectors identified a Green NCV of Technical Specification 5.4.1, "Administrative Controls - Procedures," because Entergy did not adequately implement procedures used to control system alignments. Specifically, the inspectors identified two valves that were not positioned as required by plant procedures.

Description: On August 8, 2008, inspectors identified that a drain valve on the steam exhaust line for the 22 Auxiliary Boiler Feedwater Pump (ABFP) was closed when it was required to be in the throttled position. Entergy determined that the valve was fully closed and that the required position was throttled open per the component operating lineup (COL) procedure COL-18.1, "Main and Reheat Steam." Entergy repositioned the drain valve and noted that approximately 1.5 gallons of condensate drained through the throttled open valve. Entergy evaluated the potential impact of the 1.5 gallons of condensate in the exhaust line of the 22 ABFP and determined through review of vendor testing documents that the 22 ABFP would not be adversely impacted because the

trapped condensate would be passed through the exhaust piping when the pump was started.

On August 25, 2008, inspectors identified an isolation valve on the 22 ABFP supply line to the 24 steam generator that was not locked open as required by procedure COL-21.3, "Steam Generator Water Level and Auxiliary Boiler Feedwater." The valve was in the open position but it was not locked.

Entergy determined that the most likely cause of the mispositioned drain valve identified on August 8, 2008 was due to an operator shutting the drain valve when they noticed steam coming from the affected drain during the most recent operational test of 22 ABFP on June 6, 2008. Entergy determined that an operator recognized steam from the drain valve as an unexpected condition and took action to shut the drain valve outside of any procedural guidance. The inspectors determined that this operator action constituted proceeding in the face of an unexpected condition without self-checking the decision to shut the drain valve against an approved procedure.

For the unlocked AFW isolation valve identified on August 25, 2008, Entergy determined through interviews that operators did not utilize proper self-checking when relocking the valve following the last operation of the valve during a routine surveillance on June 6, 2008.

Entergy entered both configuration control issues into the corrective action program and performed an extent-of-condition review which included full system alignment verifications of several systems including AFW and 100 percent verification of locked valves. Entergy's review identified several additional examples of valves and breakers that were in the required position but were not locked as required. Entergy locked the components as required and entered each of these additional issues into the corrective action program. Entergy did not identify any additional valves or breakers out of their required position.

The inspectors determined that not maintaining configuration control of the AFW system valves identified on August 8, 2008 and on August 25, 2008 were two examples of the same performance deficiency. The performance deficiencies were within Entergy's ability to foresee and correct in both cases because the AFW system alignment procedures contained the correct position for the valves.

Analysis: The inspectors determined the finding was more than minor because it was associated with the configuration control attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the buildup of condensate in the exhaust line of the 22 ABFP impacted the reliability of the pump during startup. In addition, because the inspectors identified more than one configuration control issue in the AFW system, the inspectors determined that Entergy was not adequately maintaining configuration control for the system, which also impacted its reliability. This finding was similar to the more-than-minor example 3.c found in IMC 0612 Appendix E in that more than one valve was unlocked or out of its required position. The inspectors determined the significance of the finding using Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that this finding was of very low safety significance because the finding did not result in a loss of safety function and did not screen as potentially risk-significant due to external events initiating events. Specifically,

the inspectors determined that the as-found configuration of the identified components did not adversely impact AFW system operability.

The finding had a cross-cutting aspect in the area of human performance because operators did not use adequate self and peer checking techniques when shutting an open AFW drain valve and when attaching a locking device to an AFW isolation valve. (H.4(a))

**Enforcement:** Technical Specification 5.4.1., "Administrative Controls - Procedures," requires that written procedures shall be established, implemented, and maintained covering the applicable requirements and recommendations of Regulatory Guide (RG) 1.33, Revision 2, Appendix A. Appendix A requires operational procedures for the AFW system. COL 18.1, "Main and Reheat Steam," required 22 ABFP steam drain valve MS-114 to be throttled open. COL 21.3, "Steam Generator Water Level and Auxiliary Boiler Feedwater," required 22 ABFP isolation valve FCV-405D to be locked open. Contrary to the above, on August 8, 2008, and again on August 25, 2008, Entergy did not implement the requirements of COL-18.1 and COL-21.3, respectively, for the AFW system. Entergy entered these issues in the corrective action program, as CR-IP2-2008-03737 and CR-IP2-2008-03966, evaluated the as-found configuration of the valves, and determined that the AFW system operability was not impacted. Entergy also performed system alignment verifications of AFW and other safety-related systems as part of an extent-of-condition review. Because the violation was of very low safety significance and was entered into the corrective action program, this violation is being treated as a non-cited violation per Section VI.A of the NRC Enforcement Policy. **(NCV 05000247/2008004-01, Auxiliary Feedwater System Configuration Control Deficiencies)**

.2 Full System Walkdown (71111.04S- 1 Sample)

a. Inspection Scope

The inspectors performed a complete system walkdown of accessible portions of the safety injection system to identify any discrepancies between the existing equipment lineup and the required lineup. The inspectors reviewed operating procedures, surveillance tests, piping and instrumentation drawings, equipment lineup check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors reviewed a sample of CRs and work orders (WOs) written to address deficiencies associated with the system to ensure they were appropriately evaluated and resolved. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Quarterly Tours by Resident Inspector (71111.05Q - 6 samples)

a. Inspection Scope

The inspectors conducted tours of several fire areas to assess the material condition and operational status of fire protection features. The inspectors verified, consistent with the applicable administrative procedures, that: combustibles and ignition sources were

adequately controlled; passive fire barriers, manual fire-fighting equipment, and suppression and detection equipment were appropriately maintained; and compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with Entergy's fire protection program. The inspectors evaluated the fire protection program against the requirements of License Condition 2.K. The documents reviewed during this inspection are listed in the Attachment. This inspection represented six inspection samples for fire protection tours, and was conducted in the following areas:

- Zone 1A, Mechanical penetration area;
- Zone 9, Safety injection pump room;
- Zone 11, Cable spreading room;
- Zone 14, 480 volt vital switchgear room;
- Zone 90A, Spent fuel pool equipment area; and
- Zones 5-7, Charging pump rooms.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observations (71111.05A - 1 sample)

The inspectors completed one annual fire drill observation inspection sample. The inspectors observed an unannounced fire drill conducted in the Appendix R/Alternate Safe Shutdown Diesel Generator area. The inspectors observed the drill to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that Entergy staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and implemented appropriate corrective actions. Specific attributes evaluated were: proper wearing of turnout gear and self-contained breathing apparatus; proper use and layout of fire hoses; employment of appropriate fire fighting techniques; sufficient fire fighting equipment brought to the scene; effectiveness of fire brigade leader communications, command, and control; search for victims and propagation of the fire into other plant areas; smoke removal operations; utilization of preplanned strategies; adherence to the pre-planned drill scenario; and drill objectives.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)

a. Inspection Scope

The inspectors completed one internal flood protection sample. The inspectors reviewed selected risk-important plant design features and Entergy procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors focused on mitigation strategies and equipment for the 15' elevation of the primary auxiliary building, including the 21 and 22 residual heat removal pump areas. The inspectors reviewed flood analysis and design documents, including the updated final safety analysis report (UFSAR), engineering calculations, and abnormal operating procedures. The inspectors observed the condition of wall penetrations, watertight

doors, flood alarm switches, and drains to assess their readiness to contain flow from an internal flood in accordance with the design basis.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program

.1 Quarterly Review (71111.11Q – 1 sample)

a. Inspection Scope

On August 18, 2008, the inspectors observed licensed operator simulator training to verify that operator performance was adequate, and the 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 control room supervisor. The inspectors also reviewed simulator fidelity with respect to the actual plant. Licensed operator training was evaluated against the requirements of 10 CFR Part 55, "Operator Licenses." The documents reviewed during this inspection are listed in the Attachment. This observation of operator simulator training represented one inspection 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 that involved structures, systems, and components (SSCs) to assess the effectiveness of maintenance activities. The 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 also reviewed system health reports, maintenance backlogs, and Maintenance Rule basis documents. The inspectors evaluated maintenance effectiveness and monitoring activities against the requirements of 10 CFR 50.65.

The documents reviewed during this inspection are listed in the Attachment. The following Maintenance Rule samples were reviewed and represented two inspection samples:

- Containment spray system;
- Reactor protection system and; and
- Service Water Intake Structure.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed scheduled and emergent maintenance activities to verify that the appropriate risk assessments were performed prior to removing equipment from service for maintenance or repair. 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. Documents reviewed during this inspection are listed in the Attachment. The following activities represented six inspection samples:

- 23 emergency diesel generator outage;
- Pressurizer level transmitter troubleshooting;
- Planned yellow risk during safety bus testing;
- Increased risk due to severe weather during emergency diesel maintenance;
- 138 kV offsite power supply feeder 96951 outage; and
- Emergent repairs to 26 service water pump.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 5 samples)

a. Inspection Scope

The inspectors reviewed operability evaluations to assess the acceptability of the evaluations, the use and control of compensatory measures when applicable, and compliance with Technical Specifications. The inspectors' reviews included verification that operability determinations were performed in accordance with procedure ENN-OP-104, "Operability Determinations." The inspectors assessed the technical adequacy of the evaluations to ensure consistency with the Technical Specifications, UFSAR, and associated design basis documents (DBDs). The documents reviewed are listed in the Attachment. The following operability evaluations were reviewed and represented five inspection samples:

- Operability of emergency diesel generators based on unit 3 operational experience identifying procedural adherence issues during testing;
- Steam leak on main steam non-return check valve, MS-2B, repair sleeve;

- City water tank level below required minimum;
- Pressurizer level transmitters LT-462 and LT-3101 leak in condensing line; and
- Service water strainer blowdown piping pin-hole leaks.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of Technical Specification 5.4.1, "Administrative Controls - Procedures," because Entergy did not implement portions of an engineering change package following modification to the city water tank minimum required volume. As a result, city water tank level dropped below the minimum water level required by Technical Requirements Manual requirement 3.7.E.

Description. On July 26, July 31, and August 3, 2008, auxiliary operators noted that the city water tank level was 19.5 feet, 21.4 feet and 22 feet, respectively, during their daily rounds. The operators wrote condition reports to describe their observations because level was not in the normally observed band of 25 to 35 feet. The control room operators concluded that the water level was adequate based on reviewing the Technical Requirements Manual basis document and associated engineering documents for the city water tank which stated that the minimum level required was 17.4 feet. The city water tank provides an alternate source of water to support functions including fire fighting, auxiliary feed water, component cooling water cooling, and cooling for the Appendix R diesel generator.

The inspectors reviewed the UFSAR, operator logs, the Technical Requirements Manual bases, design documentation and calculations to verify what the minimum level required should be. The inspectors found conflicting information in that the documents above stated different levels of 16, 17.4, and 22 feet. The inspectors questioned Entergy to clarify the basis for tank water level. Entergy reviewed and provided to the inspectors Engineering Change (EC) 05000033794 that indicated the required level was 22.5 feet. EC 05000033794 incorporated the new Appendix R diesel generator into the plant's design and required a dedicated volume of water in the city water tank. The EC also identified that a volume of the tank was unusable and another volume was required to compensate for instrument error. With these factors considered, the new minimum tank level was determined to be 22.5 feet. The EC also required that the control room alarm for city water tank level be changed to 22.5 feet. Although the alarm setpoint was changed appropriately, a long-standing electrical ground in the alarm wiring rendered the alarm unreliable since 2005. Entergy created a work order to identify and repair the faulted electrical wiring.

Entergy wrote condition report IP2-2008-03559 to review the design basis minimum water level prescribed in EC 05000033794 and update applicable logs, procedures, and alarms. As an interim measure, Entergy management directed operators to control the minimum level at or above 22.5 feet. Entergy's review of the issue determined that control room alarm response procedures and operator logs were not updated with the correct minimum required level due to inadequate implementation of the EC package by an Operation's staff member assigned to the EC team. The implementation issues were due to a miscommunication of roles and responsibilities from Entergy management to the Operations staff member. Entergy's corrective actions included updating alarm response procedures and operator logs with the new minimum level requirement, training Operations staff on closing out engineering modification packages, and improving EC implementation procedures.

The inspectors identified a performance deficiency in that Entergy did not implement portions of procedure EN-DC-115 that required that modifications be transcribed into plant procedures, processes, and systems. Specifically, EC 05000033794 identified that the minimum city water tank level should be changed to 22.5 feet and associated procedures, logs, and alarms should reflect this new minimum level. However, Entergy did not transcribe the new minimum level to plant procedures or logs. As a result, Entergy was not aware that city water tank level dropped below the minimum required level on July 26, July 31, and August 3, 2008.

Analysis. The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the Cornerstone's objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because Entergy did not transcribe calculations from an engineering change package to procedures and logs, Entergy operators allowed city water tank level to drop below that required to meet the requirements of TRM 3.7.E that maintain the capability to support safety related functions. The inspectors determined the significance of the finding using a phase 1 analysis described in Inspection Manual Chapter 0609 Appendix F, "Fire Protection Significance Determination Process." The finding category was defined as "post-fire safe shutdown" because the basis for the city water tank minimum level is to support safety-related functions following an Appendix R fire event. The deficiency was assigned a low degradation rating because an additional source of firefighting water was available in a dedicated tank (300,000 gallons). The deficiency resulted in city water tank lowering to a level of 19.5 feet resulting in an available volume of approximately 542,000 gallons of water, or a shortage of 113,000 gallons. The inspectors determined that there was adequate water available on site to perform the fire-fighting function described in the post-fire safe-shutdown analysis to mitigate the temporary loss of 113,000 gallons. The finding was determined to be of very low safety significance (Green) because the degradation rating was determined to be low.

The finding had a cross-cutting aspect associated with formally defining the authority and roles for decisions affecting nuclear safety in the area of Human Performance in that Entergy management did not ensure that roles and responsibilities were communicated clearly to a member of the engineering change team responsible for implementing Operations procedure changes. As a result, the proper procedure changes were not made to plant procedures and logs which ultimately led to unmitigated low levels in the city water tank. (H.1.(a))

Enforcement. Technical Specification 5.4.1 states, in part, that written procedures shall be established, implemented, and maintained covering the applicable requirements and recommendations of Sections 5.2 and 5.3 of ANSI N18.7-1976 and Appendix A of Regulatory Guide 1.33, Revision 2. Regulatory Guide 1.33, Revision 2 requires the licensee to create procedures for the control of modification work. Contrary to the above, Entergy did not implement portions of procedure EN-DC-115 when applicable portions of Engineering Change package EC 05000033794 were completed on April 24, 2008 in that new minimum city water tank level requirements were not transcribed into station procedures. As a result, on July 26, July 31, and August 3, 2008 city water tank level dropped below the required level of 22.5 feet. Because this violation was of very low safety significance and it was entered into Entergy's corrective action program (CR-IP2-2008-03559), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 05000247/2008004-02, City Water Tank Below Required Level due to Inadequate Design Change Implementation.**

1R18 Plant Modifications (71111.18).1 Temporary Modifications (1 sample)a. Inspection Scope

The inspectors reviewed a temporary plant modification package for an online leak-repair of MS-2A, the 21 steam generator non-return check valve. The inspectors verified the design bases, licensing bases, and performance capability of the system was not degraded by the temporary modification. The inspectors verified that Entergy utilized established procedures governing the use of temporary sealants while the plant was operating. In addition, the inspectors interviewed plant staff, and reviewed issues that had been entered into the corrective action program to determine whether Entergy had been effective in identifying and resolving problems associated with temporary modifications. The documents reviewed are listed in the Attachment.

b. Findings

Introduction. The inspectors identified a non-cited violation of Technical Specification 5.4.1, "Administrative Controls - Procedures", when Entergy did not implement station procedures to repair a steam leak on valve MS-2A. The inspectors determined the issue was of very low safety significance (Green).

Description. Entergy created work order 160011 to repair a small steam leak on the main steam non-return check valve, MS-2A, associated with the 21 steam generator that was discovered on July 25, 2008. The work order directed a vendor to perform a temporary leak repair to MS-2A, which was described as a safety-related, seismic category 1, ASME code class 2 component.

Entergy injected sealant into the grease fitting on July 29, 2008, but was unsuccessful in stopping the leak. The sealant was ejected out through the fitting following each of four injections.

The NRC observed that the workers were not using appropriate engineering procedures to perform the online leak repair but instead were using only a vendor implementing procedure and verbal guidance from engineers. Specifically, the workers did not use procedure 0-LKR-401-GEN, "Temporary On-Line Leak Repairs, or engineering standard EN-ME-S-001-Multi, "Leak Repair Evaluations." Procedure 0-LKR-401-GEN provides for a systematic evaluation of the leak repair including calculations to determine the maximum amount of sealant to be injected to minimize the chance of the sealant negatively impacting safety functions of structures, systems, or components. Procedure 0-LKR-401-GEN also specifies that limits on the number of injections be specified and evaluations of failed injections be performed. Engineering standard EN-ME-S-001-Multi requires engineering to perform a technical evaluation of the leak repair to ensure that safety related equipment is not negatively impacted from chemical effects, over-stressing of components, or mechanical interference from the sealing compound. Specifically, the procedure states that injection of sealant into the hinge pin area of a check valve should be evaluated to determine if the ability of the check valve to be closed could be affected. Entergy did not allow on-line leak sealing to be performed on a steam leak that currently exists on the packing gland area of MS-2B (main steam non-return check valve

associated with the 22 steam generator) because of the potential that the valve may not be able to perform its safety function due to increased friction on the valve hinge pin.

When questioned by the inspectors, the job supervisors stated that they were not required to use the above procedures because they designated the work as a temporary housekeeping repair (or patch), which is defined in procedure EN-ME-S-001-Multi as “an externally applied sealant (not injected into a pipe or component), cover, catch containment and other similar non-system intrusive, and easily reversible leak mitigating device installed on non-quality related, non-Section XI components.” The inspectors concluded that the work did not qualify as a housekeeping repair because the repair required an injection of sealant material internal to a safety-related, ASME class-2 (section XI) component.

Following NRC questions, Entergy stopped work on MS-2A and entered the issue into their corrective action program as CR-IP2-2008-03614. Entergy determined that the valve was operable following four injections because the workers witnessed that the sealant was pushed back out of the fitting by steam pressure.

Entergy performed an evaluation and determined that the apparent cause of the problem was insufficient document use practices. The component engineers were not familiar with the procedures and did not perform their own self-checking of the procedures. Also Entergy's planning process did not adequately characterize the work to be performed in that the leak-sealing work required the use of specific engineering procedures to prevent damage to the valve or other systems. The inadequate work planning resulted in the incorrect characterization of the work as a “housekeeping repair” as well as necessary procedures not being referenced in the work order. Entergy's corrective actions include reviewing this issue and its condition report with the planning and component engineering departments and determining if training on the on-line leak sealing procedures is necessary.

The inspectors identified a performance deficiency in that Entergy injected leak-sealant into MS-2A without using the required procedures. Specifically, Entergy did not use procedures 0-LKR-401-GEN and EN-ME-S-001-Multi to evaluate and perform the on-line leak repair. It was reasonable for Entergy to foresee and correct this issue because Entergy's work control process directs the use of the above procedures; furthermore, an Operational Decision Making Instruction that justified operation of a steam leak on a MS-2B packing gland identified operating experience describing the potential to render these valves inoperable with leak injection compounds due to an increased friction load on the valve's hinge.

Analysis. The finding was more than minor because, if left uncorrected, inadequate control of leak-sealant injections would become a more significant safety concern. The inspectors determined the significance of the finding using Inspection Manual Chapter 0609.04, “Phase 1 – Initial Screening and Characterization of Findings.” The finding was determined to be of very low safety significance (Green) because it did not represent a loss of system safety function. Specifically, Entergy's operability evaluation concluded that the sealant that was injected extruded back out of the leak path and likely did not reach the valve's seat or hinge.

The finding had a cross cutting aspect related to work control in the area of Human Performance. Entergy personnel did not appropriately plan work activities to conduct online leak repairs on a safety related component. Specifically, Entergy did not identify

necessary engineering procedures to adequately perform leak seal repairs on MS-2A during the planning process. These procedures provide necessary limitations, contingencies, and abort criteria. (H.3.(a))

Enforcement. Technical Specification 5.4.1 states, in part, that written procedures shall be established, implemented, and maintained covering the applicable requirements and recommendations of Sections 5.2 and 5.3 of ANSI N18.7-1976 and Appendix A of Regulatory Guide 1.33, Revision 2. Regulatory Guide 1.33, Revision 2 states that “maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.” Contrary to the above, on July 29, 2008, Entergy performed online leak repairs on the 21 main steam line non-return check valve, MS-2A, without using procedures 0-LKR-401-GEN and EN-ME-S-001-Multi to evaluate and perform the on-line leak repair. Entergy observed that the sealant was pushed out of the valve following application and determined that the valve was operable. Because this violation was of very low safety significance and it was entered into Entergy’s corrective action program (CR-IP2-2008-03614), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 05000247/2008004-03, On-line Leak Repairs Made Without Use of Proper Procedures.**

.2 Permanent Modifications (1 Sample)

a. Inspection Scope

The inspectors reviewed permanent modification documents associated with the replacement of a Foxboro bistable with an NUS bistable for the reactor protection system. The inspectors verified that Entergy utilized established procedures governing permanent modifications and equivalency determinations. The inspectors also verified that the NUS bistable: was compatible with the installation; maintained the same functional properties as the replaced Foxboro bistable; was appropriately qualified; and would respond appropriately under accident conditions. The inspectors reviewed applicable regulatory requirements and industry standards and reviewed the permanent modification against the requirements of 10 CFR 50.59. In addition, the inspectors reviewed post maintenance testing, interviewed plant staff, and reviewed issues that had been entered into the corrective action program to determine whether Entergy had been effective in identifying and resolving problems associated with permanent modifications. The documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 5 samples)

a. Inspection Scope

The inspectors reviewed post-maintenance test procedures and associated testing activities for selected risk-significant mitigating systems, and assessed 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, the test demonstrated operational readiness and were consistent with design basis

documentation; test instrumentation had current calibrations, and appropriate range and accuracy for the application; and the tests were performed as written, with applicable prerequisites satisfied. Upon completion of the tests, 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 activities were reviewed and represented five inspection samples:

- Testing following replacement of reactor coolant system loop 1 pressure monitor PM-402;
- 23 emergency diesel generator testing following maintenance;
- 22 auxiliary boiler feedpump testing following pump coupling maintenance;
- Testing following service water strainer replacement; and
- 22 charging pump testing following pump alignment.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 3 Routine Surveillance samples, 1 In Service testing sample, and 1 RCS Leakage sample)

a. Inspection Scope

The inspectors observed performance of portions of surveillance tests and/or reviewed test data for selected risk-significant SSCs to assess whether they 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; test instrumentation had accurate calibration, and appropriate range and accuracy for the application; and tests were performed as written, with applicable prerequisites satisfied. Following the tests, the inspectors verified that the equipment was capable of performing the required safety functions. The inspectors evaluated the surveillance tests against the requirements in Technical Specifications. The documents reviewed during this inspection are listed in the Attachment. The following surveillance tests were reviewed and represented five inspection samples:

- 2-PT-Q027A, "21 Auxiliary Feed Pump," Rev. 16;
- 2-PT-W010, "Weekly Battery Surveillance Requirements," Rev. 4;
- 2-PT-Q026B, "22 Service Water Pump," Rev. 16;
- 2-PT-2Y008B, "22 EDG Mechanical Overspeed Trip," Rev. 4; and
- 0-SOP-LEAKRATE-001, "RCS Leakrate Surveillance, Evaluation and Leak Identification," Rev. 0.

b. Findings

No findings of significance were identified.

## Cornerstone: Emergency Preparedness (EP)

### 1EP2 Alert and Notification System (ANS) Evaluation (711114.02 - 1 sample)

#### a. Inspection Scope

Region-based specialist inspectors continued to conduct inspections of the previous Indian Point alert and notification system (ANS) and also of the new siren system. The new IPEC ANS was placed in service on August 27, 2008. Inspection activities were conducted onsite for both systems throughout the quarter between July 1 and September 30, 2008. This inspection was conducted in accordance with the baseline inspection program deviation authorized by the NRC Executive Director for Operations (EDO) in a memorandum dated October 31, 2005, and renewed by the EDO in a memorandum dated December 19, 2007.

The inspectors conducted the following onsite inspection activities during this quarter:

- Verified that Entergy had satisfied, prior to placing the new ANS in service, their commitments described in the August 22, 2008, NRC Confirmatory Action Letter, including: having a tone alert radio (TAR) program in place; and having all required TARs deployed in the 0-5 mile emergency planning zone;
- Observed a pre-operational full volume sounding of the new ANS on August 14, 2008; and
- Observed on September 27, 2008, a full volume sounding of the new ANS to demonstrate partial satisfaction of system reliability requirements stipulated in Section II.C.5 of the NRC Confirmatory Order dated January 31, 2006.

The inspectors also inspected, prior to August 27, the status of, and corrective actions for, the previous ANS to assure that Entergy was appropriately maintaining that system until the new system was operational.

#### b. Findings

No findings of significance were identified.

### 1EP6 Drill Evaluation (711114.06 - 1 sample)

#### a. Inspection Scope

The inspectors evaluated an emergency preparedness drill conducted on August 8, 2008. The inspectors observed the drill from initiation in the plant-reference simulator for Unit 2, through termination in the emergency operations facility (EOF). The inspectors observed the operating crew in the simulator respond to simulated initiating events that resulted in the activation of the emergency response organization (ERO). The inspectors verified the adequacy and accuracy of event classifications and declarations made by the operating crew and the ERO. In addition, the inspectors observed the controller's critique following termination of the drill, and verified that significant performance deficiencies were appropriately identified and addressed within the critique and the corrective action program. This evaluation constituted one inspection sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety (OS)**

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 14 samples)

a. Inspection Scope

During August 4-8, 2008, the inspectors conducted the following activities to verify that the 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, site technical specifications, and Entergy's procedures.

- (1) There were no occupational exposure cornerstone performance indicator incidents during the current assessment period.
- (2) The inspectors walked down accessible exposure significant work areas of the plant (Units 1, 2, and 3) and reviewed Entergy controls and surveys to determine if the surveys, postings, and barricades were acceptable and in accordance with regulatory requirements.
- (3) The inspectors walked down accessible exposure significant work areas of the plant and conducted independent surveys to determine whether prescribed radiation work permit and procedural controls were in place and whether the surveys and postings were complete and accurate.
- (4) During 2008, there were no internal dose assessments >10 mrem committed effective dose equivalent and therefore, no assessment of internal exposure calculations was performed.
- (5) Entergy's physical and programmatic controls for highly activated materials stored underwater in the Unit 2 and Unit 3 spent fuel pools were reviewed and evaluated through observation and a review of the applicable access control procedure.
- (6) A review of Entergy radiation protection program self-assessments and audits during 2008 was conducted to determine if identified problems were entered into the corrective action program for resolution.
- (7) Ten condition reports associated with the radiation protection access control and ALARA areas between April 2008 and August 2008, were reviewed and discussed with Entergy staff to determine if the follow-up activities were being conducted in an effective and timely manner commensurate with their safety significance.

- (8) Based on the condition reports reviewed, repetitive deficiencies were screened to determine if Entergy's self-assessment activities were identifying and addressing these deficiencies.
- (9) There were no Occupational Exposure Performance Indicator incidents reported during the current assessment period to evaluate utilizing the significance determination process.
- (10) Changes to the high radiation area and very high radiation area procedures since the last inspection in this area were reviewed and management of these changes were discussed with the Radiation Protection Manager.
- (11) Controls associated with potential changing plant conditions to anticipate timely posting and controls of radiation hazards was discussed with a radiation protection supervisor.
- (12) All accessible locked high radiation area entrances in the plant (Units 1, 2, and 3) were verified to be locked through challenging the locks or doors. All locked and very high radiation area keys were inventoried and controls reviewed.
- (13) Several radiological condition reports (see Section 4OA2) were reviewed to determine if the issues were caused by radiation worker errors and also to determine if there were any trends or patterns and if Entergy's corrective actions were adequately addressing these trends.
- (14) Several radiological condition reports (see Section 4OA2) were reviewed to determine if the issues were caused by radiation protection technician errors and also to determine if there were any trends or patterns and if Entergy's corrective actions were adequately addressing these trends.

The inspectors reviewed ten corrective action condition reports associated with the radiation protection program that were initiated between April 2008 and August 2008. The inspectors verified that problems identified by these condition reports were properly characterized in Entergy'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 findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 2 samples)a. Inspection Scope

During August 4-8, 2008, the inspectors 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.

- (1) There were no declared pregnant workers during 2008. Therefore Entergy performance in this area was not observed.
- (2) Radiation protection related condition reports initiated between April 2008 and August 2008, were reviewed for repetitive deficiencies in ALARA to determine if Entergy's self-assessment activities were identifying and addressing these deficiencies.

The inspectors reviewed ten corrective action condition reports associated with the radiation protection program that were initiated between April 2008 and August 2008. The inspectors verified that problems identified by these condition reports were properly characterized in Entergy'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 findings of significance were identified.

**Cornerstone: Public Radiation Safety (PS)**2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03 - 10 Samples)a. Inspection Scope

- (1) The inspectors reviewed the current Annual Radiological Environmental Operating Report, and Entergy assessment results, to verify that the REMP was implemented as required by TS's and the 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, inter-laboratory comparison program, and analysis of data. The inspectors also reviewed the ODCM to identify environmental monitoring stations. In addition, the inspector reviewed the following: Entergy self-assessments and audits, event reports, inter-laboratory comparison program results, the Final Safety Analysis Report 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 inspectors walked down five air particulate and iodine sampling stations; both plant inlet and discharge river water sampling stations; two broad-leaf vegetation sampling locations; the Campfield and Croton drinking water reservoir sample locations; and eight thermoluminescent dosimeter (TLD) monitoring

locations and determined that they were located as described in the ODCM and that any applicable equipment material condition was acceptable.

- (3) The inspectors observed the collection and preparation of a variety of environmental samples (listed above) and verified that environmental sampling was representative of the release pathways as specified in the ODCM and that sampling techniques were in accordance with procedures.
- (4) Based on direct observation and review of records, the inspectors verified that the primary and backup meteorological tower instruments were operable, calibrated, and maintained in accordance with guidance contained in the FSAR, NRC Safety Guide 23, and Entergy procedures. The inspectors verified that the meteorological data readout and recording instruments in the control room and at the tower were operable.
- (5) The inspectors 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 inspectors conducted a review of Entergy's assessment of any positive sample results.
- (6) The inspectors 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 inspectors 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 inspectors reviewed the calibration and maintenance records for air samplers. The inspectors reviewed the following: the results of Entergy's inter-laboratory comparison program to verify the adequacy of environmental sample analyses performed by Entergy, Entergy's quality control evaluation of the inter-laboratory 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 QA audit results of the program to determine whether Entergy met the TS/ODCM requirements. The inspectors verified that the appropriate detection sensitivities with respect to TS/ODCM are utilized for counting samples and reviewed the results of the quality control program including the inter-laboratory comparison program to verify the adequacy of the program.
- (8) The inspectors observed the radioactive material survey and release locations and inspected the methods used for control, survey, and release to include observing the performance of personnel surveying and releasing material for unrestricted use and verifying that the work is performed in accordance with plant procedures.
- (9) The inspectors verified that the radiation monitoring instrumentation used for the release of material from the radiological controlled area (RCA), was appropriate for the radiation types present and was calibrated with appropriate radiation sources, and alarmed when tested with applicable a low activity radioactive source. The inspectors reviewed Entergy's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in

Circular 81-07 and Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material.

- (10) The inspectors 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 (see Section 4AO2).

The inspectors reviewed 9 corrective action condition reports associated with the radioactive liquid and gaseous radioactive effluent control program and the radiological environmental monitoring program that were initiated between June 2006 and August 2008. The inspectors verified that problems identified by these condition reports were properly characterized in Entergy'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 findings of significance were identified.

**4. OTHER ACTIVITIES [OA]**

4OA1 Performance Indicator Verification (71151 - 3 samples)

a. Inspection Scope

The inspectors reviewed performance indicator data for the cornerstones listed below and used Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, to verify individual performance indicator accuracy and completeness. The documents reviewed during this inspection are listed in the Attachment.

Mitigating Systems Cornerstone

- Mitigating Systems Performance Index – High Pressure Injection System (July 2007 to June 2008)
- Mitigating Systems Performance Index – Residual Heat Removal System (July 2007 to June 2008)

Barrier Integrity Cornerstone

- Reactor Coolant System Leakage (July 2007 to June 2008)

The inspectors reviewed data and plant records from the above noted periods. The records included performance indicator data summary reports, Entergy event reports, operator narrative logs, corrective action program, and Maintenance Rule records. The

inspectors verified the accuracy of the number of critical hours reported, and interviewed the system engineers and operators responsible for data collection and evaluation.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152 - 2 samples)

.1 Routine Problem Identification & Resolution Program Review

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and to identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into Entergy's corrective action program. The review was accomplished by accessing Entergy's computerized database for condition reports, and attending condition report screening meetings.

In accordance with the baseline inspection modules, the inspectors selected corrective action program items across the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for further follow-up and review. The inspectors assessed Entergy's threshold for problem identification, adequacy of the causal analysis, extent of condition reviews, and operability determinations, and timeliness of the associated corrective actions. The condition reports reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified

.2 Annual Sample: Review of Hemyc Fire Barrier Wrap Issues (1 Sample)

a. Inspection Scope

The inspectors selected condition report (CR) CR-IP2-2005-01338 as a problem identification and resolution (PI&R) sample for a detailed follow-up review. CR-IP2-2005-01338 documented failures of Hemyc fire barrier wrap as described in information notice (IN) 2005-07, "Results of Hemyc Electrical Raceway Fire Barrier Full Scale Fire Testing," and how the failures applied to the Hemyc fire barrier wrap installed at Indian Point Nuclear Generating Unit Number 2 for 10 CFR 50, Appendix R, purposes. The IN described failures of Hemyc one hour rated fire barrier wrap to provide the required one hour performance (per 10 CFR 50, Appendix R) when tested in accordance with the requirements of Generic Letter (GL) 86-10, Supplement 1. Additionally, the CR tracked corrective actions to enhance Indian Point Generating Unit 2's conduit/tubing supports for structures, systems, and components (SSCs) that were protected in a less conservative manor than the NRC tested support configurations.

The inspectors assessed Entergy's problem identification threshold, cause analyses, extent of condition reviews, operability determinations, and the prioritization and

timeliness of corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with these issues and whether the planned or completed corrective actions were appropriate. Additionally, the inspectors reviewed modification packages, engineering evaluations, safety evaluation reports (SERs), fire tests and performed plant walkdowns of areas Hemyc fire barrier wrap was installed. The inspectors interviewed cognizant plant personnel regarding the identified issues. Specific documents reviewed are listed in the attachment to this report.

b. Findings and Observations

No findings of significance were identified.

Based on review of the NRC's IN test data, Entergy determined that the fire resistance rating of the Hemyc fire barrier wrap installed at Indian Point Generating Unit 2 was indeterminate. Entergy implemented compensatory measures which consisted of verification of operability of fire detection systems and the posting of a one hour roving fire watch in the plant areas where Hemyc was installed [component cooling water (CCW) pump area, auxiliary feedwater (AFW) pump room, and piping penetration area]. Additionally, Entergy's response to Generic Letter (GL) 2006-03, "Potentially Nonconforming Hemyc and MT Fire Barrier Configurations," June 8, 2006, also identified Indian Point Generating Unit 2's use of Hemyc and that the configurations installed were inoperable. The compensatory measures were maintained pending final resolution of identified Hemyc issues. Entergy's corrective actions included performing an engineering evaluation to confirm the minimum thirty minute rating as allowed by a notice of exemption dated October 16, 1984, for Indian Point Generating Unit 2 installed Hemyc configurations. Corrective actions also included modifications to add additional fire wrap to conduit/tubing supports for installed Hemyc fire barrier wrap to enhance its ability to provide thirty minute fire resistance.

The inspectors determined that Entergy properly implemented their corrective action process regarding the initial discovery of the Hemyc issues. The CR, modification packages and engineering evaluations were complete and included operability determinations, extent of condition reviews, corrective actions and planned corrective actions. Additionally, the CR, modification packages, and engineering evaluations were thorough. Corrective actions appeared appropriate to provide adequate (30 minute) fire resistance for the revised Hemyc configurations and the engineering evaluations of the protected SSCs justified operability of the systems. The inspectors noted that corrective actions included performing an engineering evaluation of the installed Hemyc configurations at Indian Point Generating Unit 2 with respect to NRC test data, installation of modifications to the installed Hemyc configurations, maintaining the enhanced configurations in the surveillance program, and revising maintenance procedures to contact fire protection engineers prior to removing or repairing Hemyc fire barrier wrap at the site.

.3 PI&R Annual Sample: Review of Corrective Actions for Service Water Bay Silt Buildup (1 sample)

a. Inspection Scope

On September 16, 2007 and October 14, 2007, Entergy personnel noted declining service water header pressures and reduced service water flow to containment fan

cooler units below the Technical Specification (TS) required values. Initially, Entergy determined that the cause of reduced header pressures and subsequent low flows were a result of pump degradation. However, after observing the same degrading indications with different service water pump operating combinations, Entergy determined that silt-build-up in the service water bay was having an adverse impact on the inlet conditions of the operating pumps and that the silt levels were as high as 6 feet in places surrounding the pump suction. Entergy performed a major de-silting of accessible areas of the service water bays in December of 2007. The de-silting effort was completed during the Spring 2008 refueling outage.

The inspectors reviewed condition reports, completed and planned work orders, and action plans to monitor and remove silt build-up in the service water bays. In addition, the inspectors performed interviews and walkdowns of the service water bay and selected portions of the service water system. The documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified.

The inspectors reviewed Entergy's action plan, "Site Intake Infrastructure and Material Condition Management," and determined that Entergy's actions to address silt in the service water bay and plans to prevent build-up of silt in the future were adequate. Specifically, Entergy established a recurring preventive maintenance task to de-silt the IP2 service water bay on a six year periodicity. Entergy determined that prior to the 2007 de-silting, the service water bay had not been de-silted since 1993. Entergy also established a two-year frequency for performing detailed silt-mapping of the service water bays to ensure the six-year de-silting periodicity remains appropriate. In addition, Entergy changed the periodicity of performing trash rack inspections from once every four years to once every six months; performed and established new preventive maintenance tasks for traveling screens; and installed service water bay level instrumentation for remote monitoring.

The inspectors noted that although Entergy established a six year periodicity for de-silting the service water bays, Entergy did not establish a limit on silt level in the service water bay that would prompt immediate or early de-silting. In addition, Entergy did not evaluate potential silt levels above which the service water system operability would be challenged. Entergy entered the inspector's observations into their corrective action program and is evaluating their performance criteria.

4OA3 Event Follow-up (71152 - 2 samples)

- .1 (Closed) LER 05000247/2008-003-00, Manual Reactor Trip Due to Decreasing Steam Generator Levels Caused by a Main Turbine Runback Due to a Failed Runback Circuit Bistable with a Control Switch Mis-positioned to Armed

On April 21, 2008, Unit 2 control room operators initiated a manual reactor trip in response to lowering steam generator water levels following a main turbine runback. The runback was initiated due to the combination of a failed bistable, a component in the main turbine runback circuit, and the runback arming switch in the control room that was prematurely manipulated. The inspectors reviewed the LER to verify its accuracy based on the NRCs assessment of the event, and a review of Entergy's evaluation of the event

contained in the root cause report and associated corrective actions contained in CR-IP2-2008-02334. The personnel performance aspects that contributed to this event were previously evaluated and dispositioned as a non-cited violation in NRC inspection report 50-247/2008-003. No additional findings of significance or violation of NRC requirements were identified. This LER is closed.

- .2 (Closed) LER 05000003,247,286/2008-001-00, Attempted Introduction of Contraband into the Plant Protected Area Due to Personnel Error

On May 27, 2008, during a routine search of employee packages immediately prior to entry into the protected area, IPEC Security identified an item of contraband (hand gun). The individual was denied protected area access and held for questioning. Entergy entered this issue for evaluation into the corrective action program as CR-IP2-2008-02808, and evaluated the need for additional communications regarding the existing prohibition of handguns within the protected area. The LER was reviewed by the inspectors and no findings of significance or violation of NRC requirements were identified. This LER is closed.

#### 40A5 Other Activities

- .1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with Entergy security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings of significance were identified.

- .2 Review of Indian Point Independent Safety Evaluation (ISE) Report

On September 10<sup>th</sup>, the NRC completed a detailed review of the final ISE report issued July 31, 2008. The NRC's review did not identify any immediate safety concerns or violations of regulatory requirements discussed in the report which were not previously identified by the NRC. The NRC plans to inspect a sample of risk significant corrective actions that Entergy implements in response to the recommendations and observations of the ISE Report.

- .3 Ground-Water Contamination Investigation

a. Inspection Scope

The inspectors reviewed plans, procedures, remediation and long term monitoring activities affecting the contaminated ground water condition at Indian Point, relative to NRC regulatory requirements, as authorized by the NRC Executive Director for

Operations in a Reactor Oversight Process deviation memorandum dated December 19, 2007 (ADAMS Accession number ML073480290). Entergy's performance, relative to development and implementation of its long term monitoring plan, was examined throughout this quarterly inspection report period. The inspection included onsite inspections, independent split sample analyses of selected monitoring well samples, frequent review of licensee performance, progress and achievements, and periodic communications with federal, state, and local government stakeholders.

An onsite review of the long term monitoring plan was conducted on August 6-7, 2008, by an NRC team including: Messrs. James Noggle, Region I, Tom Nicholson, NRC's Office of Nuclear Regulatory Research, John Commiskey, Region I, and John Williams, U.S. Geological Survey's New York Science Center in Troy, NY. In addition, Messrs. Larry Rosenmann and Timothy Rice of New York State Department of Environmental Conservation (NYS DEC) monitored and observed the inspection activity.

b. Findings and Observations

No findings of significance were identified.

On August 6-7, 2008, Region I conducted a team inspection of the Indian Point ground-water long-term monitoring plan, including implementation and process. The inspectors confirmed that Entergy is continuing activities to enhance long term monitoring to meet the following objectives; (1) early and timely detection of abnormal releases to the onsite ground water, primarily from the Unit 2 and 3 spent fuel pools (SFP) and related subsurface systems; and (2) confirmation of the efficacy of Entergy's chosen remediation approach, Monitored Natural Attenuation (MNA) for the existing onsite contamination plumes of tritium (H-3), strontium-90 (Sr-90), and nickel-63 (Ni-63). The current long term monitoring plan is adequate. Notwithstanding, Entergy is pursuing additional improvements and refinements to further enhance the plan.

- (1) Entergy has initiated actions to further improve linkages to other program elements to adjust the groundwater monitoring frequency based on potential changes in radioactive source concentrations and initiating events (e.g., the Fuel Integrity Program, Unit 2 SFP chemistry analysis, and the storm drain monitoring program). In addition, Entergy is also pursuing cross ties to onsite construction/excavation activities to evaluate any possible effects on existing ground-water flow gradients and the creation of inadvertent pathways for potential abnormal releases.
- (2) Entergy intends to enhance the existing site hydrogeologic characterization to provide additional documentation of the existing Unit 3 site area ground-water monitoring technical basis consist with the industry's voluntary ground-water protection initiative.
- (3) Entergy has initiated actions to improve the LaFarge No. 2 monitoring well as an offsite ground-water sampling location within the radiological environmental monitoring program (REMP), and to evaluate its monitoring data as an indicator of offsite ground-water migration.
- (4) Entergy is planning to establish a ground-water plume baseline after terminating the original source of the Unit 1 plume. Drainage of the Unit 1 SFP system is in progress and expected to be completed by the end of 2008. Based on this plume

baseline, Entergy plans to establish action levels or triggers to initiate further evaluations and if necessary, contingency actions for stakeholder notification and possible interdiction. These analyses would provide the technical bases for defining the long term ground-water monitoring plan criteria to monitor existing plume changes and detect new leaks into the ground water above current levels.

- (5) Entergy has continued to evaluate ground-water flow conditions adjacent to the Unit 2 SFP. They have initiated additional tracer testing in the vicinity of Unit 2 to better understand the ground-water flow characteristics in this area.
- (6) Entergy will evaluate the need for continued transducer measurements of ground-water levels in a limited number of monitoring wells to continue confirmation existing hydrogeologic site characterization, dated January 8, 2008.
- (7) After draining the Unit 1 SFP system, Entergy will evaluate the Unit 1 footer drain sampling data to enhance the detection capability of leaks from the Unit 2 SFP and other adjacent structures.

Entergy is tracking the planned improvement action items, described above, in condition report no. IP3-LO-2008-000157. The NRC staff will continue split sampling of selected ground-water monitoring wells, observe Unit 1 SFP drain down activities and continue to follow Entergy's performance in this area.

#### 4OA6 Meetings

##### Exit Meeting Summary

On October 17, 2008, the inspectors presented the inspection results to Joe Pollock, 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**Entergy Personnel

J. Pollock, Site Vice President  
 A. Vitale, General Manager, Plant Operations  
 P. Conroy, Director of Nuclear Safety Assurance  
 B. Christman, Manager of Training and Development  
 B. Sullivan, Emergency Planning Manager  
 S. Verrochi, System Engineering Manager  
 R. Walpole, Licensing Manager

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**Opened and Closed

|                     |     |  |
|---------------------|-----|--|
| 05000247/2008004-01 | NCV | Auxiliary Feedwater System Configuration Control Deficiencies (Section 1R04)                       |
| 05000247/2008004-02 | NCV | City Water Tank Below Required Level Due to Inadequate Design Change Implementation (Section 1R15) |
| 05000247/2008004-03 | NCV | On-line Leak Repairs Made Without Use of Proper Procedures (Section 1R18)                          |

Closed

|                             |     |  |
|-----------------------------|-----|--|
| 05000247/2008003-00         | LER | Manual Reactor Trip Due to Decreasing Steam Generator Levels Caused by a Main Turbine Runback Due to a Failed Runback Circuit Bistable with a Control Switch Mispositioned to Armed (Section 4OA3) |
| 05000003,247,286/2008001-00 | LER | Attempted Introduction of Contraband into the Plant Protected Area Due to Personnel Error (Section 4OA3)   |

**LIST OF DOCUMENTS REVIEWED****Common to all Sections**

Indian Point Unit 2 Control Room Narrative Logs  
 Indian Point Unit 2 Standing Orders

**Section 1R04: Equipment Alignment**Procedure

2-COL-29.2, Rev. 28, Instrument Air System  
 2-COL-18.1, "Main and Reheat Steam," Rev. 21  
 2-COL-21.3, "Steam Generator Water Level and Auxiliary Boiler Feedwater," Rev. 30  
 2-PT-M103, "Auxiliary Feedwater System Monthly Alignment Verification," Rev. 2  
 2-PT-W1, "Emergency Diesel Generator," Rev. 20  
 2-COL-27.3.1, "Diesel Generators," Rev. 25  
 2-COL-10.1.1, "Safety Injection System," Rev. 32

Condition Report

|                |                |                |                |
|----------------|----------------|----------------|----------------|
| IP2-2008-03747 | IP2-2008-03737 | IP2-2008-03966 | IP2-2008-04029 |
| IP2-2008-04036 | IP2-2008-04037 | IP2-2008-04038 | IP2-2008-04042 |

Drawings

9321-F-2735, "Flow Diagram Safety Injection System," Rev. 139  
 9321-F-27353, "Flow Diagram Safety Injection System Sheet No. 1," Rev. 40

**Section 1R05: Fire Protection**Procedures

ENN-DC-189, Rev. 0, Fire Drills  
 SAO-703, Rev. 25, Fire Protection Impairment Criteria and Surveillance  
 2-PT-SA020, Rev. 0, Swing Fire Doors  
 EN-DC-161, Rev. 2, Control of Combustibles

Condition Reports

IP2-2008-03830

Miscellaneous

Indian Point Nuclear Generating Station, Unit 2, Fire Protection Program Plan, Rev. 9  
 Indian Point Pre-Fire Plans Unit 2 – Nuclear  
 Indian Point Pre-Fire Plans Unit 2 - Conventional  
 Indian Point Pre-Fire Plans – Outbuildings  
 Drill Scenario for class B fire in unit 2 appendix R EDG, dated 8/22/2008.  
 IP2-RPT-03-00015, "IP2 Fire Hazards Analysis," Rev. 3

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

2-AOP-Flood, Rev. 05, Flooding

Condition Reports

|                |                |                |                |
|----------------|----------------|----------------|----------------|
| IP2-2007-01337 | IP2-2007-01625 | IP2-2008-03869 | IP2-2008-03895 |
|----------------|----------------|----------------|----------------|

Work Order

5167291-01 51550074-01 51549824-01 51555142-01

Miscellaneous

Individual Plant Examination of External Events for Indian Point Unit 2

**Section 1R11: Licensed Operator Regualification Program**Procedures

OAP-033, "Conduct of Operations Simulator Training, Evaluations, and Debriefs," Rev. 4  
 OAP-032, "Operations Training Program," Rev. 9  
 IP-SMM-TQ-114, "Continuing Training and Regualification Examinations for Licensed Personnel," Rev. 7  
 2-AOP-SG-1, "Steam Generator Tube Leak," Rev. 10  
 2-AOP-INST-1, "Instrument/Controller Failures," Rev. 5  
 2-E-0, "Reactor Trip or Safety Injection," Rev. 0  
 2-E-3, "Steam Generator Tube Rupture," Rev. 0  
 2-ECA-3.3, "SGTR Without Pressurizer Pressure Control," Rev. 0

Miscellaneous

Lesson Plan LRQ-SES-37, "Feed Regulating Valve Fails Closed, SGTR w/o Pressure Control"  
 Rev. 3

**Section 1R12: Maintenance Effectiveness**Procedures

EN-DC-203, "Maintenance Rule Program," Rev. 0  
 EN-DC-205, "Maintenance Rule Monitoring," Rev. 0  
 EN-DC-324, "Preventive Maintenance Process," Rev. 3  
 EN-LI-102, "Corrective Action Process," Rev. 10  
 MCC-P-001-A, "Westinghouse, Type W-480 Volt Motor Control Center Major Maintenance,"  
 Rev. 9  
 0-PCE-AD-01, "Drift Monitoring Program," Rev. 0

Work Orders

|              |              |          |          |
|--------------|--------------|----------|----------|
| IP2-02-48426 | IP2-06-23805 | 51319272 | 51556588 |
| 00149453     | 00149454     | 51656444 | 00118325 |

Condition Reports

|                |                |                 |                |
|----------------|----------------|-----------------|----------------|
| IP2-2008-04162 | IP2-2008-02433 | IP2- 2008-03796 | IP2-2008-03244 |
| IP2-2008-03142 | IP2-2002-10808 | IP2-2008-03911  | IP2-2008-04010 |
| IP2-2008-03491 | IP2-2008-03911 |                 |                |

Drawings

IP2-S-000213-02, "Containment Spray 21 Discharge Stop Valve MOV-866A," Rev. 0  
 IP2-S-000156-02, "Containment Spray 21 Discharge Stop Valve MOV-866B," Rev. 0

Miscellaneous

"IP2 Maintenance Rule Basis Document Containment Spray System," Rev. 3  
 "Unit 2 Containment Spray System Health Report," 2008 1st Quarter  
 Maintenance rule quarterly report 1<sup>st</sup> quarter 2008  
 PT-5Y-1, "Containment Spray Nozzle Test," Rev. 1, completed 11/18/02  
 IP-CALC-04-01086, "Overpower Delta T/Overtemp Delta T Loop Accuracy," Rev. 0  
 2-PT-Q52, "Overtemperature Delta T and Overtemp Delta T Bistables," Rev. 32, tests  
 completed 5/11/07, 10/25/07, 2/12/08, 4/25/08, and 8/13/08  
 IP2-SW DBD - Service Water Design Basis Document  
 Service Water System Health Report, 2Q 2008  
 Maintenance Rule Basis Document – Service Water  
 Completed Service Water Structure MR Inspections

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

Procedures

EN-WM-101, "On-Line Work Management Process," Rev. 1  
EN-MA-125, "Troubleshooting Control of Maintenance Activities," Rev. 3

Drawings

71307-D Service Water Pump Shaft

**Section 1R15: Operability Evaluations**

Procedures

EN-MA-121, Rev. 1, Fluid Leak Management Program  
2-OSP-1.5, Rev. 3, Support Procedure – Pumping Up Reference Leg for LT-462 and LT-3101  
EN-OP-104, "Operability Determinations," Rev. 2  
EN-LI-102, "Corrective Action Process," Rev. 8

Condition Reports

IP2-2008-03559      IP2-2008-03616      IP2-2008-03527      IP2-2008-03878  
IP2-2008-02396      IP2-2008-00803

Work Order

00153648

Drawings

193183-27, 192505-18, 192506-40, Indian Point Unit No. 1 Piping Flow Diagram City Water  
Sheets 1,2, and 3  
9321-F-2019-114, Flow Diagram Boiler Feedwater

Miscellaneous

EC 5000033794, Rev. 1, IP2 Station Blackout and Appendix R Diesel Generator Set

**Section 1R18: Plant Modifications**

Procedures

0-LKR-401-GEN, Rev. 2, Temporary On-Line Leak Repairs  
IP-SMM-AD-102, "IPEC Procedure Review and Approval Form," Rev. 5  
EN-LI-100, "Process Applicability Determination," Rev. 4

Condition Reports

IP2-2008-03614      IP2-2008-03518      IP2-2008-02485

Work Orders

00160011

Drawings

A207557-3, IP2 Steam Isolation Check Valve MS-2A  
ISI-2017, Flow Diagram Main Steam

Miscellaneous

EN-ME-S-001-MULTI, Rev. 2, Leak Repair Evaluations  
ODMI (CR-IP2-2008-02485), MS-2B has a minor steam leak on the stuffing box, dated 5/30/08

0-IC-SI-69, "DAM502 Dual Alarm Module Replacement," Rev. 5, completed 8/4/08  
Foxboro Equipment Application Data Sheet Foxboro Model 63S-FR-OD-A

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

Procedures

2-PT-Q034, Rev 24, 22 Auxiliary Feed Pump  
2-PT-Q027A, Rev 16, 21 Auxiliary Feed Pump  
2-PT-Q033B, "22 Charging Pump," Rev. 14

Condition Reports

IP2-2008-03711

Work Orders

00151224    51642381    51568288    51227285    51662273    00123765

**Section 1R22: Surveillance Testing**

Procedures

2-PT-Q026B, Rev 16, 22 Service Water Pump  
2-PT-W010, Rev 4, Weekly Battery Surveillance Requirement  
0-SOP-LEAKRATE-001, "RCS Leakrate Surveillance, Evaluation, Leak Identification," Rev. 0

Condition Reports

IP2-2008-03793    IP2-2008-04002    IP2-2008-0

Work Orders

51677082    51662812

**Section 1EP6: Drill Evaluation**

Procedures

IP-EP-220, "Technical Support Center," Rev. 4  
IP-EP-250, "Emergency Operations Facility," Rev. 11  
IP-EP-410, "Protective Action Recommendations," Rev. 4

Condition Reports

IP2-2008-03772    IP2-2008-03773

Miscellaneous

Entergy Indian Point No. 2 Nuclear Power Plant Training Drill 2008, dated 8/8/08  
Indian Point Energy Center Radiological Emergency Data EAL & PAR Drill Notification forms  
dated 8/8/08  
Indian Point Wind Sector Map, dated 4/18/97

**Section 2OS1: Access Control to Radiologically Significant Areas**

Procedures

EN-RP-101, Rev. 2, Access Control for Radiologically Controlled Areas  
EN-RP-105, Rev. 2, Radiation Work Permits  
EN-RP-141, Rev. 2, Job Coverage

Condition Reports:

|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| CR-IP2-2008-1835 | CR-IP2-2008-2163 | CR-IP2-2008-1834 | CR-IP3-2008-1753 |
| CR-IP3-2008-1464 | CR-IP2-2008-1823 | CR-IP3-2008-0911 | CR-IP2-2008-2580 |
| CR-IP2-2008-3512 | CR-IP2-2008-3321 |                  |                  |

Miscellaneous

IP3LO-2008-00065, Snap Shot Self-Assessment of Indian Point Unit 2 Contamination Control during IP2 Refuel Outage 18

IP3LO-2008-00068, Snap Shot Self-Assessment of Radiation Protection Standing Orders and night Orders

IP3LO-2008-00067, Snap Shot Self-Assessment of Radiation Protection Radioactive Material Control

IP3LO-2007-0010, Snap Shot Self-Assessment of Radiation Protection Department Annual Self-Assessment Report, July 2007 – June 2008

**Section 2PS3: Radiological Environmental Monitoring Program (REMP)**Condition Reports:

|                  |                  |                  |
|------------------|------------------|------------------|
| CR-IP2-2008-2523 | CR-IP2-2008-3506 | CR-IP2-2008-3064 |
| CR-IP2-2008-3061 | CR-IP2-2008-3156 | CR-IP3-2008-1675 |
| CR-IP2-2008-2348 | CR-IP2-2007-3382 | CR-IP3-2008-0911 |

Miscellaneous

Annual Radiological Effluent Release Reports - 2006 and 2007

Annual Radiological Environmental Operating Reports - 2006 and 2007

Offsite Dose Calculation Manual, Rev. 1

Quality Assurance Department Audit QA-6-2007-IP-1, Environmental/Effluents Audit

**Section 4OA1: Performance Indicator Verification**Procedures

EN-EP-201, "Performance Indicators," Rev. 6

EN-LI-114, "Performance Indicator Process," Rev. 2

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 5

**Section 4OA2: Identification and Resolution of Problems**Calculations

PGI-00433, Combustible Loading Calculation, Rev. 0

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

Procedures

EN-LI-102, "Corrective Action Process," Rev. 12

EN-LI-100, "Process Applicability Determination," Rev. 4

2-PI-A009, "Station Battery Inspection," Rev. 3

0-TWS-401-CWS, "Traveling Water Screen Preventive Maintenance Inspection," Rev. 3

0-STR-401-SWS, "Service Water Pump Strainers Inspection/Overhaul," Rev. 2

0-FIR-006-FIR, Installation/Repair Hemyc Wrap for Tray(s) and Conduit/Air Drops, Rev. 0

2-AOP-SSD-1, Control Room Inaccessibility Safe Shutdown Control, Rev. 12

Drawings

A209561, Steam Generator/Pressurizer Level and Pressure Instrumentation Arrangement outside Containment, Rev. 5  
 B208776, Conduit Supports For Class "1E" Systems, Rev. 9  
 B229702, Installation of Fire Protective Wrap for Safe Shutdown, Rev. 4  
 308762, IA/N2 Supply to Pressurizer & Steam Generator Instrument Flow Diagram, Rev. 4

Condition Reports

|                |                |                |                |
|----------------|----------------|----------------|----------------|
| IP2-2008-03858 | IP2-2007-01669 | IP3-2007-00453 | IP2-2007-04447 |
| IP2-2005-01338 | IP2-2008-02658 | IP2-2008-03700 | IP3-2008-01933 |

Work Orders

|              |          |          |          |
|--------------|----------|----------|----------|
| IP3-07-21061 | 51308183 | 51644698 | 51561872 |
| 51553415     | 50058315 | 50068742 | 51674573 |

Miscellaneous

2-PI-Q001, Fire Separation Barriers, Rev. 9, Completed 05/15/08  
 14790-123263, Hemyc (1-Hour) Electrical Raceway Fire Barrier Systems Performance Testing, Conduit and Junction Box Raceways, 04/11/2005  
 14790-123264, Hemyc (1-Hour) Electrical Raceway Fire Barrier Systems Performance Testing, Cable Tray, Cable Air Drop and Junction Box Raceways, 04/18/2005  
 ER 06-2-050, IP2-Installation of Hemyc Insulation Wrap to Appendix R Conduit/Tubing Supports, Rev. 0  
 Exemption, Technical Exemption from The Requirements of 10CFR50, Appendix R, For Indian Point Nuclear Generating Plant, Unit No. 2, 10/16/84  
 Letter dated 06/08/2006, Response to GL 2006-03, Potential Nonconforming Hemyc and MT Fire Barrier Configurations  
 Letter dated 11/28/2007, Actions Taken in Response to GL 2006-03, Potentially Nonconforming Hemyc and MT Fire Barrier Configurations  
 Letter dated 12/13/2007, NRC Receipt of Indian Point Nuclear Generating Unit Nos. 2 and 3 Response to Generic Letter 2006-03, Potentially Nonconforming Hemyc and MT Fire Barrier Configurations  
 Memorandum dated 04/10/2008, Closeout Activities of Generic Letter 2006-03, "Potentially Nonconforming Hemyc and MT Fire Barrier Configuration"  
 ISYS-APL-08-001, "Site Intake Infrastructure and Material Condition Management," Rev. 0, dated 3/1/08

**Section 40A3: Event Followup**

Procedures

2-POP-2.1, "Operation at Greater Than 45% Power," Rev. 54  
 2-POP-1.3, Plant Startup From Zero to 45% Power," Rev. 78  
 EN-OP-115, "Conduct of Operations," Rev. 6  
 OAP-019, "Component Verification and System Status Control," Rev. 4  
 2-COL-21.1.1, "Main Feedwater Discharge," Rev.16  
 EN-OP-102, "Protective and Caution Tagging," Rev. 9  
 EN-LI-118, "Root Cause Analysis Process," Rev. 7

Condition Reports

CR-IP2-2008-03573

**LIST OF ACRONYMS**

|         |   |
|---------|---|
| ADAMS   | Agency-wide Document and Management System    |
| AFW     | Auxiliary Feedwater                           |
| ALARA   | As Low As is Reasonably Achievable            |
| ASME    | American Society of Mechanical Engineers      |
| CCW     | Component Cooling Water                       |
| CFR     | Code of Federal Regulations                   |
| CR      | Condition Report                              |
| DEC     | Department of Environmental Conservation      |
| EDO     | Executive Director of Operations              |
| ENTERGY | Entergy Nuclear Northeast                     |
| EP      | Emergency Preparedness                        |
| FSAR    | Final Safety Analysis Report                  |
| GL      | Generic Letter                                |
| IMC     | Inspection Manual Chapter                     |
| IN      | Information Notice                            |
| IP      | Inspection Procedure                          |
| IPEC    | Indian Point Energy Center                    |
| IR      | Inspection Report                             |
| MNA     | Monitored Natural Attenuation                 |
| MW      | Monitoring Well                               |
| NCV     | Non-Cited Violation                           |
| NDE     | Non-Destructive Examination                   |
| NRC     | Nuclear Regulatory Commission                 |
| NRR     | Nuclear Reactor Regulation                    |
| ODCM    | Offsite Dose Calculation Manual               |
| PARS    | Publicly Available Records System             |
| PI      | Performance Indicator                         |
| PI&R    | Problem Identification and Resolution         |
| QA      | Quality Assurance                             |
| RCA     | Radiological Controlled Area                  |
| REMP    | Radiological Environmental Monitoring Program |
| RP      | Radiation Protection                          |
| SDP     | Significance Determination Process            |
| SER     | Safety Evaluation Report                      |
| SFP     | Spent Fuel Pool                               |
| SG      | Steam Generator                               |
| SSC     | Structures, Systems, and Components           |
| TLD     | Thermo Luminescent Dosimeter                  |
| TS      | Technical Specification                       |
| UFSAR   | Updated Final Safety Evaluation Report        |
| URI     | Unresolved Item                               |
| WO      | Work Order                                    |