



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

May 12, 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 3 – NRC INTEGRATED  
INSPECTION REPORT 05000286/2008002**

Dear Mr. Pollock:

On March 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 3. The enclosed integrated inspection report documents the inspection results, which were discussed on April 10, 2008, with you and other members of your staff.

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

This report documents three NRC-identified findings, and one self-revealing finding of very low safety significance (Green). Three of these findings were also determined to be violations of NRC requirements. In addition, this report documents one NRC-identified Severity Level IV violation dispositioned under traditional enforcement guidelines. However, because of their very low safety significance, and because they were entered into your corrective action program, the NRC is treating these violations 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, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Senior Resident Inspector at Indian Point Nuclear Generating Unit 3.

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 of the Publicly Available

J. Pollock

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Sincerely,

**/RA by Donald E. Jackson For/**

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

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

Enclosure: Inspection Report No. 05000286/2008002  
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. Donohue, 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

cc w/encl:

M. Mariotte, Nuclear Information & Resources Service  
F. Zalcman, Pace Law School, Energy Project  
L. Puglisi, Supervisor, Town of Cortlandt  
Congressman John Hall  
Congresswoman Nita Lowey  
Senator Hillary Rodham Clinton  
Senator Charles Schumer  
G. Shapiro, Senator Clinton's Staff  
J. Riccio, Greenpeace  
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)

cc w/encl:

M. Mariotte, Nuclear Information & Resources Service  
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 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)

Distribution:

S. Collins, RA  
 M. Dapas, DRA  
 S. Williams, RI OEDO  
 M. Kowal, NRR  
 R. Nelson, NRR  
 J. Boska, PM, NRR  
 J. Hughey, NRR  
 E. Cobey, DRP

D. Jackson, DRP  
 B. Bickett, DRP  
 P. Cataldo, Senior Resident Inspector -  
 Indian Point 3  
 A. Koonce, Resident Inspector - Indian  
 Point 3  
 Region I Docket Room (with concurrences)  
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Region I

Docket No.: 50-286

License No.: DPR-64

Report No.: 05000286/2008002

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 3

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

Dates: January 1, 2008 through March 31, 2008

Inspectors: P. Cataldo, Senior Resident Inspector, Indian Point 3  
A. Koonce, Resident Inspector, Indian Point 3  
S. Barr, Senior Emergency Preparedness Specialist, Region I

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

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## SUMMARY OF FINDINGS

IR 05000286/2008-002; 01/01/2008 – 03/31/2008; Indian Point Nuclear Generating Unit 3; Maintenance Risk Assessment and Emergent Work Control; Operability Evaluations; Post Maintenance Testing; Surveillance Testing.

This report covered a three-month period of inspection by resident and region based inspectors. Four findings of very low significance were identified. Three of these findings were also determined to be non-cited violations. In addition, a Severity Level IV violation was identified and dispositioned under traditional enforcement guidelines as a non-cited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 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: Initiating Events**

- Green. The inspectors identified a Green non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (CFR) Part 50.65(a)(4), because Entergy did not assess and manage the increase in risk from maintenance activities prior to performing work on the Unit 3 plant computer static inverter that required the Anticipated Transient Without Scram (ATWS) Mitigating Safety Actuating Circuitry (AMSAC) to be bypassed. When questioned by the inspectors, operations personnel included AMSAC unavailability in the risk calculation and observed an increase in the calculated risk. Entergy entered the issue into their corrective action program for evaluation.

The inspectors determined that this finding was more than minor because Entergy failed to include an unavailable, risk-significant system (AMSAC) in the plant on-line risk assessment during maintenance on the Unit 3 plant computer static inverter. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," the inspectors determined that this finding was of very low safety significance because the difference between the correctly calculated core damage frequency (CDF) and Entergy's original calculation was less than  $1E^{-6}$ . The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy did not appropriately plan work activities by incorporating appropriate risk insights for affected plant equipment. (H.3(a)) (Section 1R13)

- Green. A self-revealing, Green, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified, because maintenance technicians improperly performed a surveillance test and caused the loss of 480 volt safety bus 5A and the automatic start and loading of the 33 emergency diesel generator. Entergy communicated the human error attributes that contributed to the event to plant personnel and entered this issue into the corrective action program.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Initiating Events cornerstone,

and impacted its objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, that the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, in that maintenance technicians did not follow procedures as written. Moreover, the underlying contributor to the event was that the technicians did not utilize self-check and peer-check skills that would have prevented the event, and proceeded in the face of unexpected circumstances. (H.4(a)) (Section 1R22)

### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a Green finding, of very low safety significance, because Entergy inappropriately exited Technical Specification (TS) 3.3.4, "Remote Shutdown." Specifically, on February 25, 2008, Entergy inappropriately determined that the 32 and 33 pressurizer backup heater groups could satisfy the remote shutdown safety function for the 31 pressurizer backup heater group and exited Technical Specification 3.3.4. The inspectors determined that this action was contrary to the Unit 3 Technical Specification Bases, Updated Final Safety Analysis Report (UFSAR), and procedure EN-OP-104, "Operability Determination." Following discussion between the inspectors and Entergy management, operators re-entered Technical Specification 3.3.4 until the repairs of the 31 pressurizer backup heater group were completed. Entergy entered this issue into their corrective action program, and submitted a Licensee Event Report to the NRC. This finding did not involve a violation of regulatory requirements because Entergy did not exceed the 30-day allowed outage time for the 31 pressurizer backup heater group.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Configuration Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically, Entergy inappropriately restored operability of the pressurizer heater remote shutdown function. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," because although it did represent a loss of operability of the component, it did not represent a loss of safety function, and the component was not lost for greater than its Technical Specification allowed outage time. The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy did not make safety-significant or risk-significant decisions using a systematic process when faced with uncertainty and unexpected plant conditions to ensure that safety was maintained. (H.1(a)) (Section 1R15)

- Green. A self-revealing, Green, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified because Entergy failed to ensure proper design control when modifying the jacket cooling water pressure switches in the Unit 3 emergency diesel generators. Specifically, in 2004 and 2005, Entergy replaced the existing Unit 3 emergency diesel generator jacket cooling water pressure switches but failed to ensure the new pressure switches had the proper material and classifications required for their application. The new pressure switches experienced failures on the 31

emergency diesel generator in August 2006, on the 32 emergency diesel generator in October 2007, and on the 33 emergency diesel generator in March 2008. Entergy entered this issue into their corrective action program for resolution, and is currently re-evaluating the appropriateness of the original modification, which may include pressure switch installations with different design capabilities.

This finding was more than minor because it impacted the Mitigating Systems cornerstone attribute of Equipment Performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Entergy failed to ensure the availability of the emergency diesel generators following shutdown by installing pressure switches that do not meet the original emergency diesel generator design criteria. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," because the design deficiency did not affect the operability of the emergency diesel generators. (Section 1R19)

- Severity Level IV. The inspectors identified a Severity Level IV, non-cited violation of 10 CFR 50.72(b)(3)(v) because Entergy did not report the loss of the 31 backup pressurizer heater group. Entergy submitted a licensee event report and entered the issue into their corrective action program. This finding was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission. The failure to report was entered into Entergy's corrective action program as CR-IP3-2008-00879, and Entergy is currently drafting a licensee event report regarding this event. Since this violation has been characterized as a Severity Level IV violation, and has been entered into Entergy's corrective action program, it is being treated as a non-cited violation in accordance with Section VI of the NRC Enforcement Policy.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, in that Entergy did not make risk significant decisions using a systematic process. Specifically, the Unit 3 current licensing and design bases contained the necessary information to reach an appropriate decision regarding compliance with applicable regulations. (H.1.(a)) (Section 1R15)

B. Licensee-Identified Violations

None.

## REPORT DETAILS

Summary Of Plant Status

Indian Point Nuclear Generating Unit 3 operated at full power throughout the inspection period.

**1. REACTOR SAFETY****Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**1R01 Adverse Weather Protection (71111.01 – 1 sample)a. Inspection Scope

The inspectors performed a detailed review of Entergy's procedures to address impending cold weather conditions due to a forecasted storm on January 18, 2008. The inspectors evaluated Entergy's preparation and readiness for cold weather conditions, evaluated applicable compensatory measures, conducted walkdowns of plant equipment, and verified that cold weather deficiencies from previous years have been addressed. In addition, the inspectors reviewed the status of deficiencies identified during the current seasonal preparations, and verified that adverse conditions were being adequately addressed to ensure that the impending storm would not have significant impact on plant operation and safety. The documents reviewed during this inspection are listed in the Attachment. This review of cold weather preparations represented one inspection sample.

b. Findings

No findings of significance were identified.

1R04 Equipment AlignmentPartial System Walk downs (71111.04Q – 3 samples)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, and following return to service after maintenance. The inspectors referenced the system procedures, the Updated Final Safety Analysis Report (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 and work orders to ensure that Entergy had identified and properly addressed equipment deficiencies that could potentially impair the capability of the available train, as required by Title 10 of the Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action." The documents reviewed during this inspection are listed in the Attachment. The inspectors performed partial walk downs of the following systems, which represented three inspection samples:

- 31 and 32 emergency diesel generators (EDGs) electrical line up and support systems while the 33 emergency diesel generator was out-of-service on March 9 and 10, 2008;
- 32 auxiliary boiler feed pump following maintenance on March 5, 2008; and
- 31 containment spray pump following functional testing on March 12, 2008.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Protection Tours (71111.05Q – 4 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 also 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 four inspection samples for fire protection tours, and was conducted in the following areas:

- Fire Zone 18;
- Fire Zone 20;
- Fire Zone 35A; and
- Fire Zone 67A.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11Q – 1 sample)

a. Inspection Scope

The inspectors observed a licensed operator requalification evaluation during an emergency planning training drill initiated from the Unit 3 simulator on February 6, 2008. The inspectors assessed the scope and breadth of the training, which included both discussions and reviews of emergency procedures utilized by Unit 3 control room operators to respond to, and mitigate the effects of, various security and reactor-related events at the site. The inspectors reviewed the lesson plan, and verified that appropriate aspects of the topics provided during the training were appropriate for the circumstances. In addition, the inspector reviewed training evaluations of the crew to verify that deficiencies identified during the training were identified and dispositioned.

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." Documents reviewed during this inspection are listed in the Attachment. This review represented one inspection sample for licensed operator requalification training.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12 – 2 samples)

a. Inspection Scope

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

- Proper Maintenance Rule scoping in accordance with 10 CFR 50.65;
- Characterization of reliability issues;
- System and component unavailability;
- 10 CFR 50.65(a)(1) and (a)(2) classifications;
- Identifying and addressing common cause failures;
- Trending of system performance parameters;
- 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 the maintenance program against the requirements of 10 CFR 50.65. The documents reviewed during this inspection are listed in the Attachment. The following systems were reviewed and represented two inspection samples:

- Instrument Air System; and
- Intake Structure Trash Racks.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)

a. Inspection Scope

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

- Planned “Yellow” risk for emergency boration valve maintenance conducted on January 18, 2008;
- Planned “Yellow” risk on February 27, 2008, during quarterly calibrations of power range nuclear instrumentation channels N43 and N44;
- Planned “Green” risk while AMSAC was bypassed during plant computer maintenance on March 6, 2008;
- Planned “Yellow” risk on March 17, 2008, during reactor protection system logic testing; and
- Emergent risk increase from “Green” to “Yellow” due to safety bus 6A testing, conducted on March 28, 2008.

b. Findings

Introduction: The inspectors identified a Green, non-cited violation (NCV) of 10 CFR 50.65(a)(4), because Entergy did not adequately assess and manage the risk associated with the unavailability of the Anticipated Transient Without Scram (ATWS) Mitigating Safety Actuating Circuitry (AMSAC) during planned maintenance on the plant computer static inverter.

Description: On March 6, 2008, Entergy authorized and performed maintenance on the Unit 3 plant computer static inverter which required AMSAC to be bypassed to prevent actuation of various safety systems and functions. The inspectors identified that the online risk assessment did not include planned maintenance on AMSAC, as required by 10 CFR 50.65(a)(4), which is a performance deficiency. Operators subsequently updated the online risk assessment to include AMSAC which resulted in a measurable increase in the core damage frequency (CDF). The increase in CDF was not large enough to require entrance into the higher risk category.

Analysis: The inspectors determined that Entergy’s failure to completely and accurately assess and manage the increase in plant risk resulting from planned maintenance activities, as required by 10 CFR 50.65(a)(4), was a performance deficiency. This performance deficiency was within Entergy’s ability to foresee and prevent. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC’s regulatory function, and the finding was not the result of any willful violation of NRC requirements or Entergy’s procedures.

The inspectors determined that this finding was more than minor because Entergy failed to include an unavailable, risk-significant system (AMSAC) in the plant on-line risk assessment during maintenance on the Unit 3 plant computer static inverter. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix K, “Maintenance Risk Assessment and Risk Management Significance Determination Process,” the inspectors determined that this finding was of very low safety significance because the difference between the correctly calculated core damage frequency (CDF) and Entergy’s original calculation was less than  $1E^{-6}$ .

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy did not appropriately plan work activities by incorporating appropriate risk insights for affected plant equipment. (H.3(A))

**Enforcement:** 10 CFR 50.65 (a)(4) states, in part that licensees shall assess and manage the increase in risk that may result from the proposed maintenance activities before performing those activities. Contrary to the above, on March 6, 2008, Entergy performed maintenance on the Unit 3 plant computer static inverter without assessing the increase in risk associated with the unavailability of AMSAC. After the inspectors questioned Entergy as to why AMSAC was not included in the on-line risk assessment, operations personnel updated the on-line risk calculation and documented the issue in the corrective action program as CR-IP3-2008-00666. Because this issue is of very low safety significance and is entered into Entergy's corrective action program, this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy: **(NCV 05000286/2008002-01, Failure to Include AMSAC In Online Risk Assessment)**

1R15 Operability Evaluations (71111.15 – 6 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 and licensing basis documents. The documents reviewed are listed in the Attachment. The following operability evaluations were reviewed and represented six inspection samples:

- CR-IP3-2008-00504, 31 pressurizer backup heater group transformer failure;
- CR-IP3-2008-00605, safety injection system following relief valve leakage;
- CR-IP3-2008-00596, steam jet air ejector diversion containment isolation valve limit switch failures;
- CR-IP3-2008-00252, 31 safety injection pump breaker failure to close on demand;
- CR-IP3-2008-04963, 480 volt safety bus 6A undervoltage relay failure; and
- CR-IP3-2008-00740, emergency diesel generator snubber valve material failures and associated 10 CFR 21 Notification.

b. Findings

- .1 Introduction: The inspectors identified a Green finding when Entergy inappropriately exited Technical Specification 3.3.4, "Remote Shutdown."

Description: On February 19, 2008, Unit 3 operators identified that the breaker for the 31 pressurizer backup heater group had tripped open for unknown reasons. Operations personnel correctly identified that only the 31 pressurizer backup heater group met the requirements for function 2.b, "Pressurizer Heaters" and entered TS 3.3.4 action A.1 which would require a plant shutdown if not restored within 30 days. On February 20, 2008, Entergy identified extensive degradation of the in-line transformer for the 31 pressurizer backup heater group.

On February 25, 2008, following discussions with personnel from the licensing and engineering departments, operations management personnel concluded that the remaining pressurizer backup heater groups (groups 32 & 33) were operable and could support the pressurizer heater remote shutdown function of Technical Specification 3.3.4 based on the breakers for both heater groups having local push buttons. As a result, operations personnel inappropriately exited Technical Specification 3.3.4, which was considered a performance deficiency. The inspectors noted that the 32 and 33 heater groups did not meet the requirements to support the remote shutdown function described in the Unit 3 UFSAR. UFSAR section 7.7.3, states in part, that for pressurizer heater control during remote shutdown, "stop and start buttons with selector switch and position lamp locally to the charging pumps for one 555 kW backup heater group are provided." The 31 pressurizer backup heater group is the only group of pressurizer heaters that meets the capacity and local control requirements. In addition, the Entergy test procedure implementing the requirements of surveillance requirement 3.3.4.2 specifically describes the local operation of the 31 pressurizer backup heater group.

Following discussions between NRC and Entergy management, Unit 3 operators re-entered the 30 day action statement of Technical Specification 3.3.4, on March 5, 2008, with a start date retroactive to the original failure date of February 19, 2008. Entergy continued repairs, returned the 31 pressurizer backup heater group to service on March 14, 2008, and exited Technical Specification 3.3.4.

Analysis: The inspectors determined that Entergy's failure to consider guidance contained in administrative procedure EN-OP-104, "Operability Determination", as well as Technical Specification Bases and UFSAR section 7.7.3, and prematurely exiting Technical Specification 3.3.4. was a performance deficiency. This performance deficiency was within Entergy's ability to foresee and prevent. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures.

This finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Configuration Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically, Entergy inappropriately restored availability of the pressurizer heater remote shutdown function. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," because although it did represent a loss of operability of the component, it did not represent a loss of safety function, and the component was not lost for greater than its Technical Specification allowed outage time.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance because Entergy did not make a safety-significant or risk-significant decision using a systematic process when faced with uncertainty and unexpected plant conditions to ensure safety was maintained. (H.1(a))

Enforcement: No violation of regulatory requirements occurred. Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as **(FIN 05000286/2008002-002, Inappropriate Exiting of TS 3.3.4, "Remote Shutdown.")**

- .2 Introduction: The inspectors identified a Severity Level IV, non-cited violation, dispositioned under traditional enforcement, because Entergy did not report the loss of the 31 backup pressurizer heater group in accordance with 10 CFR 50.72(b)(3)(v) on February 19, 2008.

Description: As described in Section 1R15.1, the 31 backup pressurizer heater group was declared inoperable on February 19, 2008. Entergy appropriately entered Technical Specification 3.3.4 because the 31 pressurizer heaters were required for the remote shutdown function as described in the UFSAR. Entergy determined the issue was not reportable because pressurizer operability was maintained via the remaining 32 and 33 backup heater groups. The inspectors noted that the initial reportability review in CR-IP3-2008-00504 correctly identified the 31 pressurizer heaters as the only backup heater group credited for the Technical Specification 3.3.4 remote shutdown function. However, the inspectors found that Entergy incorrectly determined the issue was not reportable in accordance with their procedures resulting in a performance deficiency.

On February 25, 2008, Entergy inappropriately exited the action statement for Technical Specification 3.3.4. The inspectors subsequently determined that action was not supported by the current licensing and design bases. On March 5, 2008, following discussions between inspectors and Entergy management, Technical Specification 3.3.4 action statement A.1 was re-entered after Entergy agreed that the original decision to exit Technical Specification 3.3.4 was not supported by appropriate bases. Specifically, Entergy concluded that the remaining backup heater groups (32 and 33) were available and operable to meet the safety function. This position, however, was not supported by the Unit 3 current licensing and design bases, in that the #32 and #33 heater groups were: (1) not analyzed to support the remote shutdown function, (2) inconsistent with the remote shutdown function and plant design attribute discussions in the UFSAR, (3) not supported by instrumentation and control design features in the form of transfer switches for control capability in remote locations outside the control room, and (4) not tested on a periodic basis to meet Technical Specification surveillance requirements identified in Surveillance Requirement 3.3.4.2. The inspectors noted that Entergy did not revisit the reportability aspects of the original failure.

Analysis: The inspectors determined that the failure to make the required 10 CFR 50.72 notification was a performance deficiency. The inspectors determined that this performance deficiency involved the failure of Entergy to formally notify the NRC regarding the 31 pressurizer backup heater group failure as required by 10 CFR 50.72(b)(3)(v). This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission.

The inspectors noted that the Enforcement Policy, Supplement I, Reactor Operations, example D.4, would treat a failure to report an LER as a Severity Level IV violation. Therefore, this finding would be appropriately dispositioned as a Severity Level IV violation, in that the reporting failure is very similar to the cited example of a failure to report an LER per 10 CFR 50.73.

Enforcement: 10 CFR 50.72(b)(3)(v), requires in part, that any event or condition that at the time of discovery, could have prevented fulfillment of a safety function, e.g., the

ability to shutdown the reactor and maintain it in a safe shutdown condition, is reportable. Contrary to the above, Entergy failed to report the February 19, 2008 failure of the 31 pressurizer backup group due to a failed transformer. The inspectors determined that because this issue was of very low safety significance, was not repetitive or willful, and it was entered into the corrective action program as CR-IP3-2008-00879, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000286/2008002-03, Failure to Report Under 10 CFR 50.72(b)(2)(v), the Loss of Pressurizer Heaters)**

1R18 Plant Modifications (71111.18 – 1 sample)

Residual Heat Removal (RHR) System Vent Valve Installation

a. Inspection Scope

The inspectors reviewed the design documentation associated with the installation of vent valve AC-1985 in the RHR system suction piping, that was installed due to gas entrainment issues. The inspectors reviewed the adequacy of the design that involved a number of attributes to verify conformance to the as-built design and licensing bases, including the Technical Specification, UFSAR, and associated calculations, procedures, and drawings. These attributes included: material compatibility of the vent valve installation; applicable piping design codes to ensure RCS integrity; engineering design change program requirements; and welding design criteria and program requirements.

During implementation of the modification, the inspectors verified that appropriate configuration controls were utilized, which included: infrequently performed testing controls to appropriately interface the various activities; and the use of a mockup of the installation to validate assumptions, drilling processes and to minimize radiation dose.

Following implementation, the inspectors verified that post-modification testing criterion were adequate and that acceptable results were obtained. Additionally, the inspectors verified that applicable operating procedures (e.g., venting procedures) and flow diagrams were appropriately revised to reflect the installation of the vent valve.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 – 4 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, tests demonstrated operational readiness and were consistent with design basis documentation; test instrumentation had current calibrations, and appropriate range and accuracy for the application; and tests were performed as written, and that applicable prerequisites were 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 following post-maintenance activities were reviewed and represented four inspection samples:

- Power range channel N-42 post-work test conducted on January 14, 2008, following course gain potentiometer replacement;
- 32 iso-phase fan post-work test conducted on March 14, 2008, following motor replacement;
- 33 emergency diesel generator jacket water pressure switch post-work test conducted on March 10, 2008, following maintenance and inspection; and
- 3-PT-Q132, "Emergency Boration Flow Path Valve CH-MOV-333," Revision 2, conducted on January 18, 2008, following maintenance and inspection on the emergency boration valve to address known valve leak-by issues.

b. Findings

Introduction: A self-revealing, Green, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified due to repeat failures of emergency diesel generator jacket water cooling pressure switches.

Description: On March 10, 2008, during the performance of a monthly surveillance test of the 33 emergency diesel generator, a control power fuse failed following the normal shutdown of the emergency diesel generator. Trouble-shooting identified that internal contacts in a jacket water cooling pressure switch failed to open and resulted in the failure of the associated control power fuse. In addition, a second pressure switch failed to operate preventing the pre-lube pump from starting as expected following the shutdown of the emergency diesel generator. These failures were similar to previous failures that occurred on the 31 emergency diesel generator in August 2006, and on the 32 emergency diesel generator in October 2007. The inspectors noted that the jacket cooling water pressure switches were modified in 2004 on the 31 emergency diesel generator and in 2005 on the 32 and 33 emergency diesel generators. The original 0-100 psi pressure switches were replaced with 3-30 psi pressure switches with a smaller set point drift tolerance to improve the switch's set-point repeatability during testing. The inspectors reviewed the design control attributes of the pressure switch modifications that occurred in 2004 and 2005 and identified various design control deficiencies including the use of incorrect component material and non-seismically qualified pressure switches inconsistent with the design requirements which were determined to be a performance deficiency.

Analysis: The inspectors determined that Entergy's failure to maintain appropriate design control of emergency diesel generator jacket cooling water pressure switches constitutes a performance deficiency. Specifically, Entergy did not ensure that the new pressure switches complied with the original design as required in 10 CFR 50, Appendix B, Criterion III, "Design Control." This performance deficiency was within Entergy's ability to foresee and prevent. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures.

This finding was more than minor because it impacted the Mitigating Systems cornerstone attribute of Equipment Performance and affected the cornerstone objective

of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Entergy failed to ensure the availability of the emergency diesel generators following shutdown by installing pressure switches that do not meet the original emergency diesel generator design criteria. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC-0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," because the design deficiency did not affect the operability of the emergency diesel generators.

**Enforcement:** 10 CFR 50, Appendix B, Criterion III, "Design Control" states, in part, that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components. Contrary to the above, during the period from 2004 through 2005, Entergy did not ensure that jacket cooling water pressure switches installed in the emergency diesel generators met the seismic qualification and material specification appropriate for their application. Entergy entered the issue into the corrective action program in CR-IP3-2008-00698 to determine appropriate action including extent of condition review and replacement of the pressure switches. Because this issue is of very low safety significance and is entered into Entergy's corrective action program, this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy: **(NCV 05000286/2008002-04, Failure to Maintain EDG Jacket Cooling Water Pressure Switch Design Control)**

1R22 Surveillance Testing (71111.22 – 7 samples)

a. Inspection Scope

The inspectors witnessed performance of surveillance tests and/or reviewed test data of selected risk-significant structures, systems, and components, to assess whether they satisfied Technical Specification, UFSAR, Technical Requirements Manual, and Entergy procedure requirements. The inspectors verified that: test acceptance criteria were clear; tests demonstrated operational readiness, and were consistent with design basis documentation; test instrumentation had accurate calibrations, and appropriate range and accuracy for the application; tests were performed as written; and applicable prerequisites were satisfied. Following the test, the inspectors verified that the equipment was capable of performing the required safety functions. The documents reviewed during this inspection are listed in the Attachment. The following surveillance tests were reviewed and represented seven inspection samples, one of which was an In-service Inspection activity:

- 3-PT-M13A1, "Reactor Protection Logic Channel Functional Test," Rev. 7;
- 3-PT-OL146, "AMSAC System Automatic Software reload Logic and Functional Test," Rev. 2;
- 3-PT-Q87C, "Channel Functional Test of Reactor Coolant Temperature Channel 431," Rev. 27;
- 3-PT-SA045, "Main Turbine Stop and Control Vales Exercise Test," Rev. 4;
- 3-PT-OL27H, " Bus 6A 480 Volt Undervoltage Relays Inspection and Calibration," Rev. 1
- 3-PT-Q120C, "33 ABFP (Motor Driven) Surveillance and IST," Rev. 9; and

- 3-PT-M62B, "480V Undervoltage/Degraded Grid Protection System Bus 5A Functional," Rev. 2.

b. Findings

Introduction: A self-revealing, Green, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was identified when maintenance technicians performed steps in error and out of sequence during a surveillance test, which resulted in the loss of 480 volt safety bus 5A.

Description: On March 25, 2008, during surveillance testing associated with the undervoltage/degraded grid protection system for 480 volt safety bus 5A, maintenance technicians were checking the calibration status of two agastat timing relays. Following successful testing of the first relay, failure to self-check and peer-check resulted in the technicians re-testing the first relay while following the instructions provided for the second relay. Upon recognition that the expected testing results were not being achieved, the technicians discovered that they had been testing the wrong relay.

Subsequently, the technicians re-calibrated the first switch through re-performance of various steps that had previously been successfully accomplished. However, in an attempt to safely exit the specific section of the procedure, the technicians failed to identify that their efforts to recover from the human performance errors introduced a faulted condition into the circuit. As a result, 480 volt safety bus 5A loads were de-energized as they were stripped off the bus, as designed, and 480 volt safety bus 5A was subsequently re-powered by the 33 emergency diesel generator, which had appropriately auto-started due to the event. This failure to follow the surveillance test procedure as written is a performance deficiency.

Analysis: The inspectors determined that the failure to follow the surveillance test as written as required by 10 CFR 50, Appendix B, Criterion V, constituted a performance deficiency. This performance deficiency was within Entergy's ability to foresee and prevent. Traditional enforcement does not apply since there were no actual safety consequences or potential for impacting the NRC's regulatory function, and the finding was not the result of any willful violation of NRC requirements or Entergy's procedures.

The inspectors determined that the finding was more than minor because it was associated with the Human Performance attribute of the Initiating Events cornerstone, and impacted its objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. This finding was determined to be of very low safety significance, using Phase 1 guidance contained in IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, that the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. Additionally, the inspectors noted that the issue was entered into the corrective action program for resolution under CR-IP3-2008-00818, distributed a site-wide communication that highlighted the human performance issues that led to this event, and initiated an apparent cause evaluation.

The inspectors determined that this finding had a cross-cutting aspect in the area of Human Performance, in that maintenance technicians did not follow procedures as written. Moreover, the underlying contributor to the event was that the technicians did

not utilize self-check and peer-check skills that would have prevented the event, and proceeded in the face of unexpected circumstances. (H.4(a))

**Enforcement:** 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires in part, that activities affecting quality shall be prescribed by documented instructions and procedures of a type appropriate for the circumstances, and shall be accomplished in accordance with these instructions and procedures. Contrary to the above, on March 25, 2008, technicians did not appropriately follow specific steps of a testing procedure and caused the loss of 480 volt safety bus 5A and the automatic start and loading of the 33 emergency diesel generator. Because this violation was of very low safety significance and it was entered into the corrective action program as CR-IP3-2008-818, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000286/2008002-05, Failure to Follow Procedures Results in Loss of Safety Bus 5A.)**

### **Cornerstone: Emergency Preparedness**

#### 1EP2 Alert and Notification System (ANS) Evaluation

##### a. Inspection Scope (71114.02 - 1 sample)

The inspectors conducted a review of the Indian Point Energy Center siren systems, both of the current system and the planned new system. In accordance with the Reactor Oversight Process Deviation Memorandum approved by the Executive Director for Operations on December 19, 2007, the inspectors monitored Entergy's efforts to design, install, and test a replacement alert and notification system throughout the inspection period. Throughout this quarter, inspectors monitored Entergy's efforts to complete the design of the new Alert and Notification System, in compliance with Federal Emergency Management Agency requirements, and to complete the installation of the system in accordance with the design. The inspectors also inspected the status of, and corrective actions for, the current ANS to assure that Entergy was appropriately maintaining that system. Inspectors were on-site on February 27, 2008, to observe and verify the performance of the current ANS during the annually-conducted full-volume test. The documents reviewed during this inspection are listed in the Attachment. This inspection activity represents one inspection sample.

##### b. Findings

No findings of significance were identified.

#### 1EP6 Drill Evaluation (71114.06 - 1 sample)

##### a. Inspection Scope

The inspectors evaluated an emergency preparedness drill conducted on February 6, 2008. The inspectors observed the drill from initiation in the plant-reference simulator for Unit 3, through termination in the emergency operations facility (EOF). The inspectors observed the operating crew in the simulator respond to various, simulated initiating events that ultimately resulted in the activation of the emergency response organization, following the classification of an Unusual Event, and the inspectors verified the adequacy and accuracy of that declaration. Additionally, the inspectors observed that

escalating conditions warranted a subsequent Alert declaration, and verified the adequacy and accuracy of that declaration in the EOF. While other declarations were made, the inspectors verified that these two classifications were appropriately credited as opportunities toward NRC performance indicator data. The inspectors also observed that a security aspect was introduced into the drill with activation of applicable actions in response to this event. 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. Also, the inspectors reviewed the summary performance report for the drill to verify appropriate attributes of drill performance including deficiencies were captured. This evaluation constituted one inspection sample.

b. Findings

No findings of significance were identified.

**4. Other Activities (OA)**

4OA1 Performance Indicator Verification

Resident Inspector Baseline Inspection (71151 – 3 samples)

a. Inspection Scope

The inspectors reviewed performance indicator data for the cornerstone 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.

Initiating Events Cornerstone

- Unplanned scrams per 7000 critical hours: January 2007 – December 2007;
- Unplanned power changes per 7000 critical hours: January 2007 – December 2007; and
- Unplanned scrams with loss of normal heat removal: January 2007 – December 2007.

The inspectors reviewed data and plant records from the above noted periods. The records included performance indicator data summary reports, licensee event reports, operator narrative logs, the 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

### .1 Routine Problem Identification and Resolution (PI&R) 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 procedures, 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, the adequacy of the cause analysis, extent of condition reviews, operability determinations, and the 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 Problem Identification and Resolution Annual Sample: February 2007 Notification of Unusual Event – Corrective Action Follow-up (71152 – 1 sample)

#### a. Inspection Scope

The inspectors reviewed Entergy's actions following the unexpected entry into the Emergency Plan Emergency Action Level (EAL) of Notification of Unusual Event that occurred on February 5, 2007, due primarily to debris clogging of intake structure trash racks and concurrent low river/intake bay water level. This review included an assessment of the implementation and adequacy of corrective actions to prevent recurrence for this significant condition adverse to quality, which were detailed in the root cause analysis report and associated condition report. The inspectors identified this issue for focused review because of a near-miss event that occurred in December 2007, e.g., an unusually low river water level and trash rack debris caused similar conditions to the February Notification of Unusual Event, in that intake structure bay level was five inches from the Emergency Action Level entry criteria for an Notification of Unusual Event. The inspectors also reviewed the adequacy and effectiveness of interim corrective actions to monitor river/intake bay water level to ensure Emergency Action Level entry criteria would be monitored and known before exceeding thresholds that could challenge plant operation and become more significant.

#### b. Findings and Observations

No findings of significance were identified.

The inspectors determined that Entergy's corrective actions have been generally effective in the prevention of unexpected entries into NRC Emergency Action Levels. These corrective actions include:

- Prediction of river water level at low tidal conditions, using generally acceptable and credible information sources;
- Measurement of intake structure level during low tidal conditions to ensure Emergency Action Level criteria are not entered unknowingly, and to ensure proactive measures are implemented to address decreasing intake structure bay level;
- Planned installation in June 2008 (approximate), of a remote, intake level instrumentation modification that would ensure control room operators can monitor intake structure water level in real-time;
- Increased periodicity of trash rack inspection and cleaning from once every two years, to every six months; and
- An abnormal operating procedure was created to provide procedural guidance to address low river/intake bay water level.

The inspectors reviewed a number of occasions when river/intake bay water level were measured by operators at predetermined times that coincided with expected low tide conditions for the Hudson River in the vicinity of the plant. The inspectors identified that in these cases, the abnormal operating procedure entry criteria had already been reached at the time the intake structure bay level measurement was obtained. In addition, the inspectors noted that following the near-miss event in December 2007, Entergy staff had determined that a National Oceanic and Atmospheric Administration website utilized for tide prediction, among different sources that are utilized between the Units, was not the preferred information source because the information provided is not consistent with the tidal conditions in the vicinity of the plant. However, following a March abnormal operating procedure entry to address low intake bay level, Entergy personnel identified that the cause of the AOP entry due to low intake bay level was that river water level was approximately two feet less than predicted from the National Oceanic and Atmospheric Administration tide-based river water level website.

The inspector also noted that no corrective actions were planned because the modification to install level instrumentation was on-track and scheduled for installation. The inspectors determined that this position may not ensure timely and consistent information is provided to operators to ensure appropriate actions are taken due to lowering intake bay levels, as evidenced by the multiple sources of tidal information utilized at both Units 2 and 3, which have varying levels of accuracy that may impact decision-making.

4OA3 Event Followup (71153 – 1 sample)Steam Generator Blowdown Isolation Valve Closure of AMSAC Signala. Inspection Scope

The inspectors observed the response of control room personnel respond to an automatic isolation of the Steam Generator Blowdown System on January 17, 2008, due to an isolation signal from AMSAC. The inspectors observed Entergy's response to verify that plant equipment responded as expected, and to ensure that operating procedures were being appropriately implemented. The inspectors discussed the event and corrective actions with plant management to confirm that Entergy had taken appropriate corrective actions in response to the event. Entergy's corrective actions for this event is to minimize the use of alligator clips where practical, and to include the use of banana clips in I&C training. This event is documented by Entergy as condition report CR-IP3-2008-00178.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including ExitExit Meeting Summary

On April 10, 2008, the inspectors presented the inspection results to you, and other members of your staff, who acknowledged the inspection results. 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
- D. Gagnon, Manager, Security
- R. Walpole, Manager, Licensing
- B. Beckman, Manager, Maintenance
- R. Christman, Manager, Training
- J. Dinelli, Assistant Operations Manager, Unit 3
- V. Cambigianis, Supervisor, Mechanical Design Engineering
- A. Singer, Superintendent, Operations Training
- T. Orlando, Engineering Director
- B. Sullivan, Manager – Emergency Preparedness, Indian Point
- S. Verrochi, Manager System Engineering.

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

Open and Closed

|                     |     |  |
|---------------------|-----|--|
| 05000286/2008002-01 | NCV | Failure to include AMSAC into online risk assessments                          |
| 05000286/2008002-02 | FIN | Inappropriate Exiting of TS 3.3.4, "Remote Shutdown                            |
| 05000286/2008002-03 | NCV | Failure to Report Under 10 CFR 50.72(b)(2)(v), the Loss of Pressurizer Heaters |
| 05000286/2008002-04 | NCV | Failure to Maintain EDG Jacket Cooling Water Pressure Switch Design Control    |
| 05000286/2008002-05 | NCV | Failure to Follow Procedures Results in Loss of Safety Bus 5A                  |

**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

Procedures

- OAP-048, "Seasonal Weather Preparation," Rev. 4
- OAP-008, "Severe Weather," Rev. 4

Condition Reports (CR-IP3-)

- 2007-00229
- 2008-00016

### **Section 1R04: Equipment Alignment**

#### Procedures

3-COL-EL-005, "Diesel Generators," Rev. 32  
3-SOP-EL-001, "Diesel Generator Operation," Rev. 38  
3-COL-MS-1, "Main and Reheat Steam System," Rev. 28  
3-COL-FW-2, "Auxiliary Feedwater System," Rev. 29  
3-PT-Q117A, "31 Containment Spray Pump Functional Test," Rev. 4  
3-PT-Q120B, "32 ABFP (Turbine Driven) Surveillance and IST," Rev. 10

#### Drawings

9321-F-27503, "Flow Diagram Safety Injection System, Sheet 2," Rev. 47

### **Section 1R05: Fire Protection**

#### Procedures

ENN-DC-161, "Transient Combustible Program," Rev. 11  
SMM-DC-901, "IPEC Fire Protection Program," Rev. 2  
Pre-Fire Plans 18, 20, 35A, and 67A

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

#### Training Procedures

IP-SMM-TQ-114, Attachment 10.9, "Simulator Examination Summary Sheet," Revision 6, Crew-3E, dated 2/6/08.  
OAP-033, Attachment 5, "Simulator Performance Improvement Plan," Crew 3E, dated 2/11/08

### **Section 1R12: Maintenance Effectiveness**

#### Other Documents

IP3-RPT-IA-01891, Maintenance Rule Basis Document, "Instrument Air and Instrument Air Closed Cooling Systems," Rev. 0

#### Condition Reports (CR-IP3-)

|            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|
| 2008-00065 | 2008-00748 | 2007-03474 | 2007-02351 | 2007-00054 | 2007-00053 |
| 2007-04271 | 2007-02010 | 2007-01844 | 2007-01714 | 2007-00089 | 2006-03752 |

#### Maintenance Rule Monitoring Documents

IPEC Maintenance Rule Basis Document for 22 kVAC Electrical System (22KV) and Main Generator (GEN)(MTG), Rev. 0

#### Miscellaneous

3-CY-2625, "General Plant Systems Specifications and Frequencies," Rev. 6

#### Procedures

EN-DC-143, "System Health Reports," Rev. 6  
EN-DC-159, "System Monitoring Program," Rev. 1  
EN-DC-167, "Classification of Structures, Systems, and Components," Rev. 0  
EN-DC-203, "Maintenance Rule Program," Rev. 0  
EN-DC-204, "Maintenance Scope and Basis," Rev. 0

EN-DC-205, "Maintenance Rule Monitoring," Rev. 0  
EN-DC-206, "Maintenance Rule (a)(1) Process," Rev. 0

System Health Reports & Trending

Unit 3 IA System, 2006-2007 System Health Report  
Unit 3 Main Turbine Generator, 2006-2007 System Health Report

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

Procedures

3-PT-M62C, "480V Undervoltage/Degraded Grid Protection System Bus 6A Functional," Rev. 4  
IP-SMM-WM-101, "On-Line Risk Assessment," Rev. 2  
Work Week Managers Operator's Risk Report, Work Weeks 0809, 0810, 0812, and 0813  
3-PT-M13A1, "Reactor Protection Logic Channel Functional Test (Reactor Power Greater Than 35% - P8)," Rev. 7

Condition Reports (CR-IP3-)

2008-00666 2008-00818

**Section 1R15: Operability Evaluations**

Procedures

EN-LI-101, "50.59 Review Program," Rev. 3  
EN-OP-104, "Operability Determinations," Rev. 2  
3-PT-R177, "Pressurizer Heaters Output and Backup Heater Group 31 Local Operation Test," Rev. 3  
3-AOP-SSD-1, "Control Room Inaccessibility Safe Shutdown Control," Rev. 6  
Indian Point Unit 3 Updated Final Safety Analysis Report, Rev. 2

Condition Reports (CR-IP3-)

2008-00504 2008-00656 2008-00596 2008-00605 2008-00740

Other Documents

Event Notification No. 44059: 10 CFR 21 Notification for improper heat treatment of emergency diesel generator snubber valves made from AISI E52100 material.

**Section 1R18: Plant Modifications**

Procedures

EN-OP-116, "Infrequently Performed Test or Evolutions," Revision 000 – As applied to AC-732 Hot Tap (Unit 3)  
3-PT-M108, "RHR/SI System Venting," Rev. 8

Other Documents

Modification No. EC-4078, and associated documents  
ODMI, "RHR Gas Void Downstream of Valve AC-732," Rev. 0  
Drawing 9321-F-27503, "Flow Diagram Safety Injection System Sheet No. 2," Rev. 46 & 47  
Drawing 9321-F-27513, "Flow Diagram Auxiliary Coolant System in PAB & FSB Sheet No.1," Rev. 30

Work Orders

00131377

Condition Reports (CR-IP3-)

2008-00287 2007-04214 2007-02724 2007-03893 2007-03865

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

Procedures

3-SOP-NI-001, "Excore Nuclear Instrumentation System Operation," Rev. 21  
EN-MA-101, "Conduct of Maintenance," Rev. 5

Other Documents

IP-SR-0016, "Indian Point 2 & 3 Seismic Rugged Determination," Rev. 2  
Procurement Engineering Technical Evaluation No. 04-001491, Rev. 0  
ER # IP3-02-24796, "Replacement Jacket Water Pressure Switches for EDG 31, 32, and 33,"  
Rev. 0  
Lower-Tier Apparent Cause Evaluation for CR-IP3-2007-04588  
Action Plan for resolution of CH-MOV-333 leakage for CR-IP3-2007-04588, Rev. 1

Work Orders

00142294 00138006 00132921

Condition Reports (CR-IP3-)

2008-00164 2008-00695 2008-00696 2008-00698 2008-00717 2008-00204  
2008-00200 2007-04588 2007-02357

**Section 1R22: Surveillance Activities**

Procedures

3-PT-M13A1, "Reactor Protection Logic Channel Functional Test," Rev. 7  
3-PT-OL146, "AMSAC System Automatic Software reload Logic and Functional Test," Rev. 2  
3-PT-Q87C, "Channel Functional Test of Reactor Coolant Temperature Channel 431," Rev. 27  
3-PT-SA045, "Main Turbine Stop and Control Vales Exercise Test," Rev. 4  
3-PT-OL27H, "Bus 6A 480 Volt Undervoltage Relays Inspection and Calibration," Rev. 1  
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### LIST OF ACRONYMS

|       |                                       |
|-------|---------------------------------------|
| ABFP  | Auxiliary Boiler Feedwater Pump       |
| AFW   | Auxiliary Feedwater                   |
| ANS   | Alert and Notification System         |
| AR    | Assignment Request                    |
| CAP   | Corrective Action Program             |
| CFR   | Code of Federal Regulations           |
| CR    | Condition Report                      |
| DC    | Direct Current                        |
| DEP   | Drill and Exercise Performance        |
| EAL   | Emergency Action Level                |
| EDG   | Emergency Diesel Generator            |
| EDO   | Executive Director of Operations      |
| EP    | Emergency Preparedness                |
| ERO   | Emergency Response Organization       |
| °F    | Fahrenheit                            |
| FSAR  | Final Safety Analysis Report          |
| JPM   | job performance measures              |
| IMC   | Inspection Manual Chapter             |
| IPEC  | Indian Point Energy Center            |
| IP2   | Indian Point Unit 2                   |
| IP3   | Indian Point Unit 3                   |
| MR    | Maintenance Rule                      |
| NCV   | Non-Cited Violation                   |
| NEI   | Nuclear Energy Institute              |
| NRC   | Nuclear Regulatory Commission         |
| OA    | Other Activities                      |
| PI    | Performance Indicator                 |
| PI&R  | Problem Identification and Resolution |
| RHR   | Residual Heat Removal                 |
| SDP   | Significance Determination Process    |
| SI    | Safety Injection                      |
| SSCs  | Structures, Systems, and Components   |
| SW    | Service Water                         |
| UFSAR | Updated Final Safety Analysis Report  |