



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

August 7, 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 05000286/2008003

Dear Mr. Pollock:

On June 30, 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 July 10, 2008, with Tony Vitale, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

In accordance with 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 Records System (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. 50-286  
License No. DPR-64

Enclosure: Inspection Report No. 05000286/2008003  
w/ Attachment: Supplemental Information

cc w/encl:  
see next page

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)

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 05000286/2008003

Dear Mr. Pollock:

On June 30, 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 July 10, 2008, with Tony Vitale, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

In accordance with 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 Records System (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

Distribution w/encl:

S. Collins, RA  
 M. Dapas, DRA  
 S. Williams, RI OEDO  
 R. Nelson, NRR  
 M. Kowal, NRR

J. Boska, PM, NRR  
 J. Hughey, NRR  
 M. Gray, DRP  
 B. Bickett, DRP  
 T. Wingfield, DRP

P. Cataldo, SRI - Indian Point-3  
 A. Koonce, RI – Indian Point-3  
 ROPReport resources  
 RGN-I Docket Room (w/concurrences)

**SUNSI Review Complete: BB (Reviewer's Initials) Adams Accession No. ML082210827**

DOCUMENT NAME: T:\DRP\BRANCH2\1a - Indian Point 3\Inspection Reports\IP3 2008-003\IP3 2008-003 Rev 3.doc

After declaring this document "An Official Agency Record" it ~~will~~ **will not** 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	PCataldo/	BBickett/BB*	MGray/				
DATE	07/ /08	07/31/08	08/07/08				

\*see prior concurrence page

OFFICIAL RECORD COPY

U.S. Nuclear Regulatory Commission

Region I

Docket No.: 50-286

License No.: DPR-64

Report No.: 05000286/2008003

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 3

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

Dates: April 1, 2008 through June 30, 2008

Inspectors: P. Cataldo, Senior Resident Inspector, Indian Point 3  
A. Koonce, Resident Inspector, Indian Point 3  
C. Hott, Resident Inspector, Indian Point 2  
T. Walker, Senior Project Engineer, Region I  
E. Gray, Senior Reactor Inspector, Region I  
J. Noggle, Senior Health Physicist, Region I  
R. Cureton, Emergency Preparedness Inspector, Region I  
S. Smith, Reactor Inspector, Region I

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

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	3
REPORT DETAILS.....	4
1. REACTOR SAFETY .....	4
1R01 Adverse Weather Protection.....	4
1R04 Equipment Alignment .....	5
1R05 Fire Protection.....	6
1R06 Flood Protection Measures.....	7
1R07 Heat Sink Performance .....	7
1R11 Licensed Operator Requalification Program .....	8
1R12 Maintenance Effectiveness.....	8
1R13 Maintenance Risk Assessments and Emergent Work Control .....	9
1R15 Operability Evaluations.....	9
1R19 Post-Maintenance Testing.....	10
1R22 Surveillance Testing .....	11
1EP2 Alert and Notification System Evaluation .....	11
1EP6 Drill Evaluation .....	12
2. RADIATION SAFETY .....	12
2OS1 Access Control to Radiologically Significant Areas.....	12
2OS2 ALARA Planning and Controls.....	13
4. OTHER ACTIVITIES (OA) .....	14
4OA1 Performance Indicator Verification.....	14
4OA2 Identification and Resolution of Problems.....	15
4OA5 Other Activities .....	19
4OA6 Meetings, including Exit.....	22
SUPPLEMENTAL INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
LIST OF DOCUMENTS REVIEWED .....	A-1
LIST OF ACRONYMS .....	A-7
TI 2515/172 Documentation Questions for Indian Point Units 2 and 3 .....	B-1

## SUMMARY OF FINDINGS

IR 05000286/2008-003; 04/01/2008 – 06/30/2008; Indian Point Nuclear Generating Unit 3;  
Routine Integrated Inspection Report.

This report covered a three-month period of inspection by resident and region-based inspectors. No findings of significance were identified. 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

No findings of significance were identified.

B. Licensee-Identified Violations

None.

## REPORT DETAILS

Summary of Plant Status

Indian Point Nuclear Generating (Indian Point) Unit 3 operated at or near full power throughout the inspection period.

**1. REACTOR SAFETY****Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**1R01 Adverse Weather Protection (711111.01 – 3 samples).1 Hot Weather Preparationsa. Inspection Scope

The inspectors performed a detailed review of Entergy's adverse weather procedure, operating procedures, Technical Specifications, and corrective action program to verify applicable hot weather preparations have been completed for anticipated adverse hot weather challenges.

The inspectors evaluated Entergy's preparation and readiness for hot weather conditions, evaluated applicable compensatory measures, and conducted plant walkdowns of the auxiliary feedwater and service water systems. 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 hot, summer temperatures would not have significant impact on plant operation and safety. The documents reviewed during this inspection are listed in the Attachment. This inspection represented one inspection sample of risk-significant systems.

b. Findings

No findings of significance were identified.

.2 External Flooding Response on May 12, 2008a. Inspection Scope

The inspectors reviewed Entergy's response to high Hudson River water levels following notification of coastal flood warnings issued on May 12, 2008. The inspectors verified the proper implementation of flood mitigation and compensatory actions contained in Entergy's flood procedure 3-AOP-FLOOD-1, "Flooding," Rev. 3. Additionally, the inspectors evaluated the efficacy of the flood procedure to mitigate the impact of flood waters to ensure credited operator actions were reasonable and appropriate for the circumstance.

b. Findings

No findings of significance were identified.

.3 Annual Review of Off-Site and Alternate AC Power System Readiness

a. Inspection Scope

The inspectors verified the appropriateness of Entergy's procedures that provide for the operation and continued availability of off-site and alternate AC power systems during adverse weather. This review also verified that communication protocols between the Unit 3 control room and the transmission system operator (TSO) contained appropriate information for issues that could impact the offsite power system. Additionally, the inspectors verified that applicable Entergy procedures had appropriate measures to monitor and maintain availability and reliability of the offsite and alternate AC power systems prior to and during adverse weather conditions to address: (1) responses to inadequate post-trip voltages and associated impacts on safety-related loads; (2) implementation of appropriate compensatory measures to address the inability to predict post-trip voltages; (3) risk assessments of maintenance activities that could affect grid reliability; and (4) communications between the control room and TSO due to challenges that could impact the system or its ability to provide adequate power. The following procedures were reviewed during this inspection:

- IP-SMM-OP-104, "Offsite Power Continuous Monitoring and Notification," Rev. 7;
- IP-SMM-WM-101, "On-Line Risk Assessment," Rev. 02; and
- SO-16-4-5, "Indian Point 2&3 and Energy Control Center - Buchanan Substation Voltage Monitoring and Notification Procedure," dated 6/18/07

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial System Walkdown (71111.04Q – 4 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 where applicable, following return to service after maintenance. The inspectors reviewed system procedures, the Updated Final Safety Analysis Report (UFSAR), and system drawings to verify that the alignment of the applicable system or component supported its required safety functions. The inspectors also reviewed applicable condition reports or 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 (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action." The documents reviewed during this inspection are listed in the Attachment.



The inspectors performed partial walkdowns of the following systems or components, which represented four inspection samples:

- 31 component cooling water heat exchanger restoration following maintenance on April 30, 2008;
- 33 service water pump restoration following maintenance on May 19, 2008;
- 31 an 33 emergency diesel generators during fuel oil snubber replacements on May 7, 2008; and
- 33 safety injection pump restoration on May 9, 2008.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

The inspectors performed a complete system walkdown of accessible portions of the 480 Volt AC distribution system to identify any discrepancies between the existing equipment lineup and the required lineup for the current plant conditions. The inspectors reviewed operating procedures, surveillance tests, electrical drawings, equipment lineup check-off lists, and the UFSAR, to determine if the system was aligned to perform its required safety functions. The inspectors reviewed a sample of condition reports that were written to address deficiencies associated with the system, and verified these deficiencies were appropriately evaluated and resolved. The documents reviewed during this inspection are listed in the Attachment. The walkdown of the 480 Volt AC distribution system represented one inspection sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Protection Tours (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 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 six inspection samples and was conducted in the following areas:

- Fire Zone 19, 39A;
- Fire Zone 21, 38A;
- Fire Zone 37A, 40A;
- Fire Zone 23;
- Fire Zone 52A; and
- Fire Zone 57A.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)

a. Inspection Scope

The inspectors reviewed the Unit 3 Individual Plant Examination, the UFSAR, and IP-RPT-06-00071, "Indian Point Unit 3 Probabilistic Safety Assessment (PSA)," Rev. 2, concerning internal flooding events. In particular, the inspectors assessed containment flooding analyses following a fan cooler weir level alarm received in the control room on June 6, 2008. This assessment included actions to address indications of a service water leak on the 32 fan cooler unit (FCU), which included isolation of service water to the fan cooler unit. The inspectors reviewed applicable portions of 3-AOP-FLOOD-1, "Flooding," Rev. 3, to verify operator actions were appropriate given the circumstances, and verified assumptions included in the site's internal flooding analysis. This inspection represented one sample for internal flood protection measures.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07 – 1 sample)

a. Inspection Scope

The inspectors evaluated maintenance activities and reviewed performance data associated with Entergy's inspection and cleaning activities on the 31 emergency diesel generator jacket water heat exchanger conducted on April 22, 2008. The inspectors reviewed applicable design basis information and commitments associated with Entergy's Generic Letter 89-13 program to validate that maintenance activities were adequate to ensure the system could perform its safety function. The inspectors reviewed as-found and as-left results from previous heat exchanger cleanings to ensure the periodicity of maintenance activities were appropriate, and conditions adverse to quality were being identified and corrected.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors observed a licensed operator requalification training evaluation conducted on May 19, 2008, from the Unit 3 plant-reference simulator. The inspectors assessed the scope and breadth of the training, which included the following: (1) discussions with Entergy staff regarding deficiencies in operator performance or training being addressed through the current, requalification cycle of training; (2) assessment of operator implementation of normal and emergency procedures utilized by Unit 3 control room operators to respond to, and mitigate the effects of, various reactor-related events at the site; (3) assessment of technical specification implementation and oversight of crew activities by shift supervision; (4) overall crew performance, especially in the area of critical tasks that have consequences if not performed correctly or timely; and (5) an evaluation of the adequacy of the critique provided by operations management and training evaluators for issues regarding operator performance identified during the training. The inspector reviewed the scope of applicable remediation training to verify that deficiencies identified during the training were appropriately addressed. The inspectors also reviewed simulator fidelity with respect to appropriate correlation with the actual plant control room, to ensure impacts to training effectiveness due to differences in fidelity were either identified or appropriately dispositioned. Licensed operator training was evaluated against the requirements of 10 CFR 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 – 1 sample)

a. Inspection Scope

The inspectors reviewed performance-based problems that involved selected structures, systems, or components (SSCs), to assess the effectiveness of maintenance activities. 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 documents reviewed during this inspection are

listed in the Attachment. The following system was reviewed and represented one inspection sample:

- Emergency diesel generators.

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 planned work scope or schedule was altered to address emergent or unplanned conditions, 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 risk and impact from 36 service water pump piping leakage on April 3, 2008;
- Planned risk during 31 emergency diesel generator maintenance on April 9, 2008;
- Planned risk due to proposed main boiler feedwater pump troubleshooting activities on May 1, 2008;
- Planned risk during repacking of the 31 service water pump on May 21, 2008; and
- Planned risk due to 480 volt degraded grid voltage testing, conducted on June 19, 2008.

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. These 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 UFSAR, and associated design and licensing basis documents. The documents reviewed are listed in the Attachment. The following operability evaluations were reviewed and represented five inspection samples:

- CR-IP3-2008-00740/01377: 10 CFR 21 notification for improper heat treatment of emergency diesel generator (EDG) fuel injection snubbers; evaluation of the impact of Pilgrim Station snubber failures on IPEC EDGs;
- CR-IP3-2008-00873: 36 service water pump flange leak;
- CR-IP3-2008-00564: main steam piping support snubber MS-R-1-3-H deficiencies;
- CR-IP3-2008-00924: 33 EDG blown control power fuses; and
- CR-IP3-2008-01100: safety injection (SI) system and 34 SI accumulator leakage.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 – 8 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; tests were performed as written; and that applicable test 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 eight inspection samples:

- 32 service water pump vacuum breaker replacement on April 2, 2008;
- 31 emergency diesel generator pressure switch replacement on April 11, 2008;
- 33 charging pump packing replacement on April 29, 2008;
- 32 emergency diesel generator fuel injection snubber valve replacements on May 7, 2008;
- 31 service water pump breaker cell switch replacement on May 21, 2008;
- 32 emergency diesel generator room exhaust fan #317 maintenance on June 5, 2008;
- 32 fan cooler unit leak repair on June 8, 2008; and
- 314 vapor containment sump pump float repair on June 25, 2008.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 4 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 test results 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 test 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 four inspection samples:

- 3-PT-Q117B, "32 Containment Spray Pump Functional Test," Rev. 6;
- 3-PT-Q022, "Residual Heat Removal System Valves," Rev. 21;
- 0-SOP-LEAKRATE-001, "RCS Leakrate Surveillance, Evaluation and Leak Identification," Rev. 00; and
- 3-PT-Q116C, "33 Safety Injection Pump Functional Test," Rev. 13.

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness**1EP2 Alert and Notification System Evaluation (71114.02 - 1 sample)a. Inspection Scope

Region-based specialist inspectors continued to conduct inspections of the existing Indian Point alert and notification system (ANS) and also reviewed testing of the new siren system. Inspection activities were conducted onsite throughout the quarter between April 1 and June 30, 2008. This inspection was conducted in accordance with the baseline inspection program deviation authorized by the NRC Executive Director of 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 for the new ANS during this quarter:

- Observed full volume sounding for acoustical testing (April 15, 2008)
- Observed an after-hours full volume sounding (June 23, 2008)

The inspectors also inspected the status of, and corrective actions for the current ANS to assure that Entergy was appropriately maintaining the system, including the quarterly

full-system growl test of the current ANS to demonstrate its functionality. The inspectors reviewed the results from the quarterly test conducted on June 4, 2008.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - 1 sample)

a. Inspection Scope

The inspectors evaluated an emergency classification conducted on May 19, 2008, during a licensed-operator requalification simulator training evaluation. The inspectors observed an operating crew in the simulator respond to various, simulated initiating events that ultimately resulted in the simulated implementation of the emergency plan. In particular, the inspectors verified the adequacy and accuracy of the simulated emergency classification of a Site Area Emergency. While other simulated classifications were made, the inspectors verified that the initial classification was appropriately credited as an opportunity toward NRC performance indicator data. The inspectors observed the management evaluator and training critique following termination of the scenarios, 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 evaluation and verified that appropriate attributes of drill performance including deficiencies were captured. 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 - 7 samples)

a. Inspection Scope

During April 7-11, 2008, the inspectors conducted the following activities to verify that the licensee 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 licensee's procedures.

- (1) Radiation work permits (RWPs) were reviewed that provide access to exposure significant areas of the plant including high radiation areas. Specified electronic personal dosimeter alarm set points were reviewed with respect to current radiological condition applicability and workers were queried to verify their

understanding of plant procedures governing alarm response and knowledge of radiological conditions in their work area.

- (2) There were no radiation work permits for airborne radioactivity areas with the potential for individual worker internal exposures of >50 mrem CEDE.
- (3) During April 7-11, 2008, the following radiologically significant work activities were selected; the radiological work activity job requirements were reviewed; and work activity job performance was reviewed with respect to the radiological work requirements.
  - refueling activities
  - reactor cavity drain down and reactor vessel head reinstallation
  - containment sump modification
  - 24 reactor coolant pump motor replacement activities
  - scaffold and shielding installation/removal activities inside containment
- (4) During observation of the work activities listed in (3) above, the adequacy of surveys, job coverage and contamination controls were reviewed.
- (5) There were no significant dose gradients requiring relocation of dosimetry for the radiologically-significant work activities listed in (3) above.
- (6) During observation of the work activities listed in (3) above, radiation worker performance was evaluated with respect to the specific radiation protection work requirements and their knowledge of the radiological conditions in their work areas.
- (7) During observation of the work activities listed in (3) above, radiation protection technician work performance was evaluated with respect to their knowledge of the radiological conditions, the specific radiation protection work requirements and radiation protection procedures.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 3 samples)

a. Inspection Scope

During April 7-11, 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 for the site was reviewed against the criteria contained in 10 CFR 20.1101(b) and Entergy's procedures.



- (1) The following highest exposure work activities for the spring 2008 Unit 2 refueling outage were selected for review:
- refueling activities;
  - reactor cavity drain down and reactor vessel head reinstallation;
  - containment sump modification;
  - 24 reactor coolant pump motor replacement activities; and
  - scaffold and shielding installation and removal activities inside containment.
- (2) For the work activities listed in (1) above, these job sites were observed to evaluate if surveys and ALARA controls were implemented as planned.
- (3) For the work activities listed in (1) above, radiation worker and radiation protection technician performance was observed during the performance of these work activities to demonstrate the ALARA principles.

b. Findings

No findings of significance were identified.

**4. Other Activities (OA)**

4OA1 Performance Indicator Verification

Resident Inspector Baseline Inspection (71151 – 2 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

- Safety System Functional Failures: April 2007 – March 2008; and
- RCS Activity: April 2007 – March 2008.

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 Annual Sample - Substantive Cross-Cutting Issue - Procedure Adequacy (71152 - 1 sample)

#### a. Inspection Scope

In the 2006 annual assessment for IPEC (NRC letter dated March 2, 2007 (ADAMS Ref: ML070610603), the NRC identified a substantive cross-cutting issue associated with procedure adequacy at Indian Point 2. In the 2007 mid-cycle performance review (NRC letter dated August 31, 2007 (ADAMS Ref. ML072430942)) the NRC concluded that Entergy had not met the criteria for clearing the substantive cross-cutting issue due to a lack of demonstrated sustainable performance improvement as evidenced by effective implementation of an appropriate corrective action plan. During inspections in June and December 2007, the NRC concluded that Entergy had not effectively implemented the operations portion of the procedure upgrade project and observed that projected completion dates for the instrumentation and controls (I&C) procedures appeared to be driven by available resources, rather than plant risk. During 2007, there were four inspection findings on Unit 3 that were attributable to procedure adequacy. In the 2007 annual assessment (NRC letter dated March 3, 2008 (ADAMS Ref. ML080610015)), the NRC concluded that Entergy had not met the criteria for clearing the substantive cross-cutting issue at Indian Point 2, and that the substantive cross-cutting issue also applied to Indian Point 3.

During this inspection, the inspectors reviewed Entergy's evaluations, actions, and plans to assess the progress in addressing the site-wide substantive cross-cutting issue in procedure adequacy. Entergy performed a root cause analysis (RCA) under

CR-IP2-2008-01056 to determine why they had not been able to resolve the substantive cross-cutting issue in procedure adequacy since it was identified in March 2007. The inspectors considered whether the evaluation was completed to identify the reasons for Entergy's insufficient progress in addressing the substantive cross-cutting issue in procedure adequacy. Entergy also performed a common cause analysis (CCA) to determine the underlying themes in the procedure adequacy issues. Entergy used the results to refocus their cross-cutting issue resolution plan. The revised plan to resolve the procedure adequacy cross-cutting issue was described in a letter to the NRC dated May 16, 2008 (ADAMS, Ref. ML081490337).

The inspectors reviewed the scope of information considered in the CCA, the evaluation detail, and planned corrective actions to determine whether Entergy's revised plans addressed previously identified concerns related to procedure adequacy. These reviews included assessment of the scope and progress of Entergy's procedure improvement efforts in operations, maintenance and I&C.

## 2. Findings and Observations

No findings of significance were identified.

In March 2008, Entergy performed a RCA to determine why IPEC had not made sufficient progress in addressing the procedure adequacy substantive cross-cutting issue. The inspectors determined that the RCA was completed in appropriate scope and detail to reasonably identify causes of Entergy's insufficient progress in addressing the procedure adequacy issues. However, the inspectors concluded that the broader procedure adequacy issues had not been appropriately prioritized and evaluated commensurate with the significance of the issues when the NRC identified the substantive cross-cutting issue in March and August 2007. Specifically, the inspectors observed that, although CRs were initiated in response to the identification and continuation of the substantive cross-cutting issue in the 2006 annual assessment and the 2007 mid-cycle performance review letters, the CRs were inappropriately categorized as a significance level "Category C" ("review and correct"); therefore, no causal evaluations were performed to help identify the reasons for insufficient progress. Entergy procedure EN-LI-102, "Corrective Action Process," provides guidance on the prioritization of issues and the type of evaluation that should be performed. This procedure requires that human performance and process issues which are repetitive should be classified as a significance level "Category B" and should not be treated as a Category C "review and correct" condition. The inspectors' observations were similar to the results of Entergy's RCA, in that the inspectors determined that, following the initial evaluation of the procedure adequacy issues in 2006, Entergy did not evaluate subsequent NRC findings to validate and prioritize the scope of work needed to address the cross-cutting issue.

Based on the results of the RCA, Entergy concluded that their previous plan, prior to May 2008, for addressing the procedure adequacy issues was too broad and not focused on the specific procedures and actions that would resolve the cross-cutting issue and improve performance. To address the results of the RCA, Entergy conducted a CCA to determine the underlying themes for the procedure adequacy issues. As a result of the CCA Entergy identified the following common causes: (1) inconsistent usage of human performance error reduction tools; (2) technical inaccuracies and insufficient level of detail in procedures; (3) insufficient focus on the operations

procedures in need of revision; and (4) inconsistent use of change management practices. Based on these results, Entergy focused their procedure adequacy cross-cutting issue resolution plan on the most risk significant, “higher tier” operations procedures (i.e., risk significant AOPs, plant operating procedures (POPs), and system operating procedures (SOPs)), and transferred responsibility for procedure improvement initiatives for maintenance, I&C, and the remaining “lower tier” operations procedures (surveillance tests, alarm response, and other AOPs and SOPs) to the line organizations. The resolution plan also included enhancements to the revision criteria for procedure upgrades and the verification and validation processes, as well as actions to address human performance and change management methods.

The inspectors observed that the CCA was appropriately expanded to include the results of ACEs for other procedure issues. While this expanded review provided additional data to determine the common issues related to procedure adequacy, the scope included procedure usage and human performance issues that the inspectors concluded were not directly related to procedure quality. Additionally, the inspectors noted that Entergy did not consider additional information, such as self assessments or CAP trends, to provide further insight on the procedure adequacy issues. For example, a self assessment (LO-CR-IP3LO-2007-00172) on equipment reliability which concluded that inadequate maintenance procedures and work instructions had contributed to power reductions and equipment failures was not considered in the CCA. Entergy procedure EN-LI-122, “Common Cause Analysis (CCA) Process,” states that the scope of a CCA should not be too narrow and data from other evaluation reports (i.e., RCA, ACE, CRs, self assessments, etc...) should be used as inputs for evaluation.

The inspectors determined that Entergy’s plan to place additional focus on higher tier operations procedures was reasonable. However, based on their review of the issues evaluated in the CCA, as well as lower significance items in the CAP, assessments and audits, procedure feedback data and other information related to procedure quality, the inspectors concluded that efforts were also needed to address procedure adequacy issues in maintenance, I&C, and lower tier operations procedures. Based on their independent review, the inspectors determined that there has been a notable continuing trend in procedure adequacy issues involving technical inaccuracies and insufficient level of detail in maintenance and I&C procedures. Further, while the inspectors did not view inconsistent use of human performance error reduction tools and change management practices as causes of the procedure adequacy issues, they recognized Entergy’s actions in these areas may mitigate potential procedure adequacy issues that may be encountered while the procedure reviews and upgrade process progresses.

Based on review of actions taken since January 2008 and established plans at the time of this inspection, the inspectors concluded that Entergy had made minimal progress in 2008 in implementing corrective actions intended to resolve the substantive cross-cutting issue in the area of procedure adequacy. Specifically:

- At the time of the inspection, Entergy’s cross-cutting issue resolution plan involved upgrading approximately 20 operations procedures by the end of 2008; however, schedules had not yet been developed for upgrading the remaining 200 operations procedures within the scope of the substantive cross-cutting issue resolution plan. The inspectors noted that resources had been identified to support revision of the higher tier operations procedures; however, training for these individuals on the revised procedure upgrade criteria and expectations was not due to be completed

until August 2008. As of the end of this inspection, Entergy had not revised or upgraded any of the procedures within the scope of the cross-cutting issue resolution plan.

- In early 2008, Entergy reprioritized the procedure upgrade project based on the probabilistic risk assessments (PRAs) for the units, and, based on the results of the RCA and CCA for the procedure adequacy issues, Entergy determined that maintenance, I&C, and lower tier operations procedures would be revised and upgraded through the “normal” procedure revision process under the responsibility of the line organizations. At the time of the inspection, Entergy was in the process of identifying and prioritizing the operations, maintenance and I&C procedures, and had not developed work schedules for revising the remaining procedures. The inspectors noted that Entergy personnel were recently identified to support the line organization procedure upgrade effort and staff training on the revised procedure upgrade criteria and expectations was not due to be completed until December 2008.
- At the time of the inspection, Entergy personnel had not identified specific actions to address the human performance and change management issues identified in their procedure adequacy causal analyses.

The inspectors further determined that Entergy did not completely identify the operations procedures that should have been included in the procedure adequacy cross-cutting issue resolution plan based on the significance of the procedures. Specifically, the inspectors determined that twelve (12) AOPs that met Entergy’s criteria for revision had not been included in the scope of the resolution plan. Additionally, the inspectors questioned whether AOPs for external events, such as fire, flooding, earthquakes and adverse weather, should be included in the scope of the plan based on the potential significance of these events. This issue was documented in Entergy’s CAP (CR-IP2-2008-02725).

### .3 Occupational Radiation Safety Cornerstone PI&R Review

#### a. Inspection Scope

The inspector reviewed 11 corrective action condition reports associated with the radiation protection program that were initiated between December 2007 and March 2008. The inspector verified that problems identified by these condition reports were properly characterized in the licensee’s event reporting system, and that applicable causes and corrective actions were identified (with one exception described below), commensurate with the safety significance of the radiological occurrences.

#### b. Findings

No findings of significance were identified.

### .4 PI&R Annual Sample Review: Semi-Annual Trend Review (71152 - 1 sample)

#### a. Inspection Scope

The inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue. The inspectors reviewed repetitive or closely-related issues that may have been documented by Entergy outside of the

corrective action program, such as trend reports, PIs, major equipment problem lists, maintenance rule assessments, and maintenance or corrective action program backlogs.

The inspectors reviewed Entergy's corrective action program database for the fourth quarter of 2007 and the first quarter of 2008 to assess the total number and significance of CRs written in various subject areas, such as individual department-generated CRs, or for particular equipment, such as EDGs, to identify notable trends, if applicable. The inspectors also reviewed Entergy's corrective action program quarterly trend reports and nuclear oversight quarterly reports for the fourth quarter of 2007 and the first quarter of 2008, to ensure Entergy was appropriately evaluating and trending adverse conditions.

b. Assessment and Observations

No findings of significance were identified.

The inspectors determined that Entergy was appropriately identifying and evaluating trends from identified adverse conditions and other available data.

4OA5 Other Activities

.1 Temporary Instruction 2515/166 – Pressurized Water Reactor Containment Sump Blockage (NRC Generic Letter 2004-02)

a. Inspection Scope

The inspectors performed an inspection in accordance with Temporary Instruction (TI) 2515/166, "Pressurized Water Reactor Containment Sump Blockage," Rev. 1. The TI was developed to support the NRC review of licensee activities in response to NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors." Specifically, the inspectors verified that the implementation of the modifications and procedure changes were consistent with the actions committed to in Entergy's supplemental response letter, NL-08-025, to GL 2004-02, dated February 28, 2008. The supplemental response provided the remaining information regarding the completed and proposed actions and methodologies used at Indian Point Units 2 and 3 to resolve the issues in the GL.

Additionally, the inspectors reviewed the technical specifications (TS) and the UFSAR, to verify that required changes to the TS had been approved by the NRC and that the UFSAR had been or was in the process of being updated to reflect the plant changes. Portions of the TI were performed during the 2007 refueling outage to verify the containment sump modifications were consistent with Entergy's design change package; the results of that inspection was documented in Inspection Report No. 05000286/2007002.

Evaluation of Inspection Requirements

The TI requires the inspectors to evaluate and answer the following questions:

1. Did the licensee implement the plant modifications and procedure changes committed to in their GL 2004-02 response?

The inspectors verified that Entergy implemented the plant modifications and procedure changes committed to in their GL 2004-02 responses. The inspection previously performed in 2007 verified implementation of the sump screen modifications related to the GL. During this inspection, the inspectors reviewed the design change package and had discussions with cognizant engineers to verify implementation of the containment sump buffering agent on-line replacement. The inspectors noted that Entergy had not finalized the downstream effects evaluation or completed their analysis of the effects of chemical precipitants on the strainer head loss at the time of this inspection. Entergy intends to provide a final supplemental response within 90 days of adopting their final Generic Safety Inspection (GSI) 191 resolution, which would include the resolution of downstream effects and chemical precipitant issues.

The inspectors also reviewed a sample of Unit 3 Standard Operating Procedures to verify that the procedures were revised as appropriate to reflect the modification work implemented as part of the GSI 191 resolution.

2. Has the licensee updated its licensing basis to reflect the corrective actions taken in response to GL 2004-02?

The inspectors verified that Entergy had either updated, or was in the process of updating, the licensing basis to reflect the actions taken in response to GL 2004-02. Specifically, the inspectors verified that changes to the facility or procedures as described in the UFSAR that were identified in the licensee's GL 2004-02 responses were reviewed and documented in accordance with 10 CFR 50.59. The inspectors also verified that changes to the technical specifications had been approved by the NRC, and that required changes to the UFSAR, describing the changes to the plant, were in the process of being updated.

Based on the inspectors' review of the hardware modifications, and procedure and licensing bases changes, the inspection requirements of the Temporary Instruction 2515/166 are complete and the TI is closed. In a letter dated April 10, 2008, NRR approved Entergy's request to extend the completion date for the remaining analyses and licensing activities required for GL 2004-02 compliance until October 31, 2008. As of this inspection, the remaining activities include completion of the chemical effects analysis, completion of the downstream effects analysis, revision to the debris transport analysis, and revision to the net positive suction head available analysis. In addition, in a letter dated March 13, 2008, Entergy requested NRC approval of a proposed change to the UFSAR regarding the Emergency Core Cooling System (ECCS) single passive failure analysis and the recirculation phase backup capacity. This request is under review. Finally, Entergy is required to respond to the open items from the December 2007 NRR audit of GSI-191 activities at Indian Point Units 2 and 3. Any additional modifications required due to the ongoing analyses noted above may be inspected at a future date if required.

The TI-2515/166 inspection results, as well as any results of sampling audits of licensee actions will be reviewed by the NRC staff (Office of Nuclear Reactor Regulation-NRR) as input, along with the Generic Letter (GL) 2004-02 responses to support closure of GL 2004-02 and Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on Pressurized-Water Reactor (PWR) Sump Performance." The NRC will notify Entergy by letter of the results of the overall assessment as to whether GSI-191 and GL 2004-02

have been satisfactorily addressed at Indian Point Unit 3. Completion of TI-2515/166 does not necessarily indicate that Entergy has finished all testing and analyses needed to demonstrate the adequacy of their modifications and procedure changes. As noted above, Entergy has obtained approval of a plant-specific extension that allows for completion of testing and analyses. Entergy will confirm completion of all corrective actions to the NRC in a final response letter to GL 2004-02. As part of the process described above to ensure satisfactory resolution of GL 2004-02 and GSI-191, the NRC will track all such yet-to-be-performed items identified in the TI-2515/166 inspection reports to completion and may choose to inspect implementation of some or all of them.

b. Findings

No findings of significance were identified.

.2 Temporary Instruction (TI) 2515/172 - RCS Dissimilar Metal Butt Welds

a. Inspection Scope

TI 2515/172 provides for confirmation that owners of pressurized-water reactors (PWRs) have implemented the industry guidelines of the Materials Reliability Program (MRP) - 139 regarding nondestructive examination and evaluation of certain dissimilar metal butt welds in reactor coolant systems containing Alloy 600/82/182. The TI requires documentation of specific questions in an inspection report. The questions and responses are included in Attachment B to this report.

In summary, Indian Point Unit 3 has MRP-139 applicable Alloy 600/82/182 RCS welds in only the hot and cold leg pipe to vessel nozzle connections. The Unit 3 welds were visually examined from the outside surface during the 2007 refueling outage. No indication of cracking was found on any of these welds. The Unit 3 welds are scheduled for ultrasonic and eddy current inspection during the next Unit 3 refueling outage.

b. Findings

No findings of significance were identified.

.3 Indian Point Energy Center Safety Culture Assessment

a. Inspection Scope

The inspectors observed portions of the conduct of the Independent Safety Culture Assessment requested by the NRC in the 2007 Annual Assessment Letter to Entergy dated March 3, 2008 (ML080610015). The inspectors confirmed that the Independent Safety Culture Assessment was being conducted as Entergy described in the responses to the NRC dated March 30, 2008 and May 30, 2008 (ML081760346 and ML081760374). The inspectors noted that the Independent Safety Culture Assessment team conducted individual interviews of 59 Entergy employees, conducted approximately eight focus group interviews of teams of Entergy employees, and observed day to day meetings and interactions between employees. The inspectors observed and conducted discussions with members of the safety culture assessment team to understand the scope and methodology that would be used to conduct the



assessment. All 13 safety culture attributes as described in NRC Regulatory Issue Summary 2006-13 were evaluated by the team.

b. Findings

No findings of significance were identified.

.4 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment of Indian Point Generating Station conducted in September 2007. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of Entergy's performance and to determine if safety significant issues were identified that would require further NRC review or follow-up.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

On July 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 A: SUPPLEMENTAL INFORMATION

ATTACHMENT B: TI 2515/172 Documentation Questions for Indian Point Units 2 and 3

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

**Entergy Personnel**

J. Pollock, Site Vice President  
A. Vitale, General Manager, Plant Operations  
P. Conroy, Director, Nuclear Safety Assurance  
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.  
L. Cerra, Design Engineering  
N. Azevedo, Supervisor, Code Programs  
S. Prussman, Licensing  
T. Jones, Coordinator, Site VP  
B. Dolansky, Plant Programs  
B. Allen, Code Programs  
W. Wittich, Components Engineering  
M. Garofalo, QA  
N. Papayia, QA  
R. Gioggia, Plant Programs  
G. Dahl, Licensing

**LIST OF DOCUMENTS REVIEWED**

**Section 1R01: Adverse Weather Protection**

**Procedures**

OAP-048, "Seasonal Weather Preparation," Rev. 4  
OAP-008, "Severe Weather," Rev. 4  
3-SOP-RW-005, "Service Water System Operation," Rev. 34  
3-SOP-AFW-001, "Auxiliary Feedwater System Operation," Rev. 0

**Condition Reports (CR-IP3-)**

2007-04093 2008-01305

**Section 1R04: Equipment Alignment**

Procedures

- 3-COL-CC-1, "Component Cooling System," Rev. 27
- 3-SOP-SI-001, "Safety Injection System," Rev. 38
- 3-COL-EL-1, "6900 and 480 Volt AC Distribution," Rev. 39
- 3-COL-EL-005, "Diesel Generators," Rev. 32
- 3-COL-RW-2, "Service Water System," Rev. 42

Drawings

- 9321-F-27503, "Flow Diagram Safety Injection System, Sheet 2," Rev. 47
- 9321-F-20293, "Flow Diagram Starting Air to Diesel Generators," Rev. 27
- 9321-F-20333, Sheet 1, "Flow Diagram Service Water System," Rev. 49
- 9321-F-20333, Sheet 2, "Flow Diagram Service Water System," Rev. 26

**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 362, 362B, 362A, 365, 366, and 367

**Section 1R06: Flood Protection Measures**

- 3-ARP-015, "C.B. Fan Cooler Cond. High Level," Rev. 32

**Section 1R07: Heat Sink Performance**

Procedures

- 0-MS-411, "Torquing of Mechanical Fasteners," Rev. 1
- 0-GNR-406-ELC, "Emergency Diesel Generator 6-Year Inspection," Rev.1
- 0-HTX-405-EDG, "EDG Lube Oil and Jacket Water Heat Exchanger Maintenance," Rev. 0

Work Orders

- 00132477      51562950

**Section 1R11: Licensed Operator Requalification**

Procedures

- IP-SMM-TQ-114, Attachment 10.9, "Simulator Examination Summary Sheet," Revision 7, for Crew-3E on 5/19/2008.
- OAP-032, Attachment 6, "Performance Improvement Plan," Rev. 9, dated 5/20/08
- IPEC Simulator Evaluated Scenario dated 3/8/2007, Rev. 8

**Section 1R12: Maintenance Effectiveness**

Condition Reports (CR-IP3-)

- 2008-01266    2008-00924    2008-00909    2008-01377    2008-01214

Maintenance Rule Monitoring Documents

IPEC Maintenance Rule Basis Document for Emergency Diesel Generators (IP-2 and IP-3),  
Rev. 0

Unit 3 Emergency Diesel Generator System Health Report

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

**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 0814, 0815, 0817, 0818, and 0825

Condition Reports (CR-IP3-)

2008-00873

**Section 1R15: Operability Evaluations**

Procedures

EN-OP-104, "Operability Determinations," Rev. 2

Indian Point Unit 3 Updated Final Safety Analysis Report, Rev. 2

3-SOP-SI-001, "Safety Injection System Operations," Rev. 42

3-PT-M108, "RHR/SI System Venting," Rev. 8

Condition Reports (CR-IP3-)

2008-00875 2008-01100

Other Documents

10 CFR 21 Notification, dated April 29, 2008, "Identification of Defect ALCO Snubber Valve  
Micro-cracking;"

Consumers Energy Laboratory Report, dated 2/27/08;

Consumers Energy Laboratory Report, dated January 17, 2006;

Consumers Energy laboratory Report, dated April 10, 2007;

Troubleshooting control form for CR-IP3-2008-01100, "More than anticipated volume of Influx  
rate to the PRT from operation of the SI pump and associated relief valve from PRT level  
indication."

Pilgrim Station CR-PNP-2008-01894;

Calculation IP3-CALC-MS-01347

Calculation 6604.266-8-SW-021, Rev. 6

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

EN-MA-101, "Conduct of Maintenance," Rev. 5  
 3-PT-Q062C, "33 Charging Pump Operability Test," Rev. 9  
 3-SOP-CVCS-002, "Charging, Seal Water, and Letdown Control," Rev. 47  
 0-PMP-413-CVCS, "Inspection/Replacement of Charging Pump Fluid Cylinder Stuffing Box  
 Seals," Rev. 1

Other Documents

Troubleshooting control form for CR-IP3-2008-01100, "High Weir alarms caused by suspected  
 service water leak"  
 WCAP-12313, "Safety Evaluation for an Ultimate Heat Sink Temperature Increase to 95°F at  
 Indian Point 3," July 1989  
 PR # 32-161, "Preliminary Report of Eddy Current Inspection," dated December 7, 2005

Condition Reports (CR-IP3-)

2008-1364    2008-01376

Work Orders

51565259    00149565    00154351    51485539    00144023    51448675  
 00147007    51549504

**Section 1R22: Surveillance Activities**Procedures

3-PT-Q117B, "32 Containment Spray Pump Functional Test," Rev. 6  
 3-PT-Q022, "Residual Heat Removal System Valves," Rev. 21  
 3-PT-M14B, "Safety Injection System Functional Train B," Rev. 4

Other Documents

Indian Point Unit 3 Updated Final Safety Analysis Report, Rev. 2  
 IP-PCE-01-185, "Justification for Containment Spray Pump Flow Criteria Expansion," dated  
 November 26, 2001

Condition Reports (CR-IP3-)

2007-03260

Work Orders

51570955    51571069    516561198

**Section 1EP6: Drill Evaluation**Procedures

IP-EP-120, "Emergency Classification," Rev. 3  
 IPEC-EP, "Emergency Plan," Rev. 07-00  
 IPEC Emergency Action Levels, Rev. 06-01  
 Radiological Emergency Data Form, Part 1, Notification #1 dated 5/19/2008

**Section 40A1: Performance Indicator Verification**Procedures

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

EN-LI-114, Attachment 9.2, "NRC Performance Indicator Technique/Data Sheet," Rev. 2,  
Second Quarter 2007 thru First Quarter 2008

NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 4

Other Documents

Licensee Event Report # 2007-001-00, "Manual Reactor Trip Due to Decreasing Steam  
Generator Levels as a Result of the Loss of Feedwater Flow Caused by the Failure of 32  
Main Feedwater Pump Train A Control Logic Power Supply"

Licensee Event Report # 2007-002-00, "Automatic Reactor Trip Due to a Turbine-Generator trip  
Caused by a Fault on the 31 Main Transformer Phase B High Voltage Bushing"

Licensee Event Report # 2007-003-00, "Technical Specification Prohibited Condition Due to  
Exceeding the Allowed Completion Time for an Inoperable Recirculation Pump Caused  
by a Potential Strong Pump – Weak Pump Interaction During a Small Break LOCA"

Licensee Event Report # 2008-001-00, "Technical Specification Prohibited Condition Due to  
Exceeding the Allowed Completion Time for an Inoperable Safety Injection Pump  
Caused by a Failed Motor Supply Breaker"

**Section 40A2: Problem Identification and Resolution**Condition Reports: (CR-IP3-)

2007-4816	2007-5022	2007-5299	2008-0053
2008-0059	2008-0127	2008-0211	2008-1193
2008-1445	2008-1463	2008-1823	

**Section 40A5: Other**Procedures

3-SOP-RCS-007, "Pressurizer Relief Tank Operation," Rev. 19

3-SOP-WDS-001, "Liquid Waste Disposal System Operation," Rev. 23

3-PT-R048, "HP Water Fire Protection System Valve Cycling," Rev. 12

OAP-007, "Containment Entry and Egress," Rev. 13 and 15

Modifications

EC-0000003553, "IP3 Buffer Replacement," Rev. 0

Miscellaneous

Entergy Letter NL-08-015, Proposed Change to the Updated Final Safety Analysis Report  
Regarding the Emergency Core Cooling System and Component Cooling Water System  
Single Passive Analysis and Recirculation Phase Backup Capability, dated 3/13/2008

Entergy Letter NL-08-025, Supplemental Response to NRC Generic Letter 2004-02, "Potential  
Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents  
at Pressurized-Water Reactors", dated 2/28/2008

NRC Inspection Report 05000286/2007002, Indian Point Unit 3

NDE Procedures

ENN-NDE-9.07, "Straight Beam Ultrasonic Examination of Bolts and Studs," Rev. 1  
ENN-NDE-9.23, "Ultrasonic Examination of Austenitic Piping Welds (Sect XI)," Rev. 1  
ENN-NDE-9.04, "Ultrasonic Examination of Ferritic Piping Welds (ASME Sect XI)," Rev. 2  
ENN-NDE-10.03, "VT-3 (Visual) Examination of IWE Interfaces," Rev. 2  
2-PT-R203, "Visual Examination of Reactor Vessel Head Penetrations and Head Surface Leakage" Rev. 2

Drawings

IPP-76, "Calibration Block IPP-76, Reactor Vessel Closure Head Stud," Rev. 1  
B206669-8, Sht 1, "ISI Isometric of the RHR 14"dia line 10"  
9321-F-1153-9, A200 093, "Containment Liner Insulation"  
322097-00, "Replacement of Removed Liner Insulation.," Rev. 2  
9321-F-1280-15, A200 168, "Containment Liner Details"

Condition Reports

CR-IP2-2008-01425                      CR-IP2-2008-01632

Other

Table 4.1-1, Risk informed ISI Component Scheduling, pages 41 and 54.  
Work Order 51318178-01 for UT of welds on RHR Line 10.  
Work Order IP2-06-22577, Evaluate portions of the Containment Liner.  
Letter, NRC to M A Balduzzi, dated 1/29/08 for the Relief Request RR-05 for IP Unit 2 on the use of Risk-Informed Inservice Inspection during the 4<sup>th</sup> ISI interval and the attached NRC Safety Evaluation.  
Letter, Entergy to NRC, dated 1/26/07 on Inspection and Mitigation of Alloy 600/82/182 Pressurizer Butt Welds for IP Units 2 and 3. (NL-07-019).  
Letter, NRC to M. R. Kansler, dated 8/18/05 on the Response to NRC Bulletin 2004-01.  
Entergy Memo dated 12/19/2007, PEP-ROC-2007-022 documenting that SG tube inspections results of 2RFO 17 (2006) show operational acceptability until 2RFO 19.  
IP-RPT-06-00055, Rev 0 dated 5/10/2006, Condition Monitoring and Operational Assessment of Indian Point 2 Steam Generator Tubing for Cycles 18 and 19.  
SL-5408, Appendix E, Rev 0. ISI Acceptance Criteria for Containment Liner Thickness, dated 10/16/2000.  
IP U2 RPV Examination Summary dated 5/5/2006, IP-RPT-06-00099.R00.  
RCS MDMP Deviation Form dated 3/28/2008 for MRP-139, Section 6.10.2 requirements for a visual exam of the Hot Leg Nozzle DM welds of IP Unit 2.  
Westinghouse Letter to Entergy dated 3/26/08. Technical justification for deviation from MRP-139 Visual Inspection Schedules for IP U2 RPV Outlet Nozzles.

**LIST OF ACRONYMS**

ADAMS	Agency Wide Document Management System
ALARA	As Low As is Reasonably Achievable
ANS	Alert and Notification System
AOPS	Abnormal Operating Procedure
CCA	common cause analysis
CEDE	cumulative effective dose equivalent
CFR	Code of Federal Regulations
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EDO	Executive Director of Operations
FCU	fan cooler unit
GL	NRC Generic Letter
GSI	Generic Safety Inspection
I&C	instrumentation and controls
INPO	Institute of Nuclear Power Operations
IP3	Indian Point Unit 3
mrem	millirem
MRP	Materials Reliability Program
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PI&R	Problem Identification and Resolution
POP	plant operating procedures
PRA	probabilistic risk assessments
PWR	pressurized-water reactors
RWP	Radiation Work Permit
SI	Safety Injection
SSC	Structures, Systems, and Components
SOP	System Operating Procedures
SW	Service Water
TI	Temporary Instruction
TSO	transmission system operator
UFSAR	Updated Final Safety Analysis Report



**ATTACHMENT B**TI 2515/172 Documentation Questions for Indian Point Units 2 and 3

The Temporary Instruction (TI) 2515/172, "Reactor Coolant System (RCS) Dissimilar Metal Butt Welds," provides for confirmation that owners of pressurized-water reactors (PWRs) have implemented the industry guidelines of the Materials Reliability Program (MRP) -139 regarding nondestructive examination and evaluation of certain dissimilar metal welds in reactor coolant systems containing nickel based Alloys 600/82/182. The TI requires documentation of specific questions in an inspection report.

In summary, the Indian Point (IP) Units 2 and 3 have MRP-139 applicable Alloy 600/82/182 RCS welds in only the four hot and four cold leg pipe to reactor pressure vessel nozzle connections for each plant. The Unit 2 welds were examined volumetrically by ultrasonic measurement from the inside weld diameter and on the inner surface by eddy current inspection in the 2006 refueling outage. The Unit 3 welds were visually examined from the outside surface during the 2007 refueling outage. No indication of cracking was found on any of these welds. The Unit 3 welds are scheduled for ultrasonic and eddy current inspection during the next Unit 3 refueling outage.

a. For MRP-139 baseline inspections:

Qa1. Have the baseline inspections been performed or are they scheduled to be performed in accordance with MRP-139 guidance?

A. Yes. For Unit 2, ultrasonic (UT) volumetric examination was done from the inside weld diameter and eddy current (ET) examination was done of the inside weld surface area on the four cold leg and four hot leg piping to vessel nozzle welds during the 2006 refuel outage (RFO). For Unit 3, during the Spring 2007 RFO the external surfaces of these eight welds were visually inspected for surface cracking and leakage. The Unit 3 welds are scheduled for UT and ET examinations during the next RFO.

Qa2. Is the licensee planning to take any deviations from the MRP-139 baseline inspection requirements of MRP-139? If so, what deviations are planned and what is the general basis for the deviation? If inspectors determine that a licensee is planning to deviate from any MRP-139 baseline inspection requirements, NRR should be informed by email as soon as possible.

A. Yes, the Unit 2 Spring 2006 RFO examinations were a deviation from the required outer surface visual examination. The volumetric (UT) and surface (ET) examinations of the internal surface where cracking, if present, would have initiated were considered an enhancement to the requirements.

b. For each examination inspected, was the activity:

Qb1. Performed in accordance with the examination guidelines in MRP-139 Section 5.1 for unmitigated welds or mechanical stress improved welds and consistent with NRC staff relief request authorization for weld overlaid welds?

A. Neither mechanical stress relief nor weld overlays were done. For Unit 2, the guidelines in MRP-139, Section 5.1 for unmitigated welds were credited by the supplemental use of surface examination by eddy current to compensate for the UT coverage being less than 90%. The UT and ET examinations were done on the nozzle inside diameter at the

dissimilar metal weld location. For Unit 3, the outside surfaces of the welds were visually examined in 2007.

Qb2. Performed by qualified personnel? (Briefly describe the personnel training/qualification process used by the licensee for this activity.)

A. The UT was done in accordance with a qualified performance demonstration initiative (PDI) procedure by qualified individuals. The eddy current examinations were done in accordance with procedure WDI-STD-146, Rev 5. A review of the qualifications of the individuals performing the ET was part of the prejob preparations.

Qb3. Performed such that deficiencies were identified, dispositioned, and resolved?

A. No material deficiencies were identified. The UT coverage condition was resolved by the Level III data reviewer.

c. For each weld overlay inspected, was the activity:

Qc1. Performed in accordance with ASME Code welding requirements and consistent with NRC staff relief requests authorizations? Has the licensee submitted a relief request and obtained NRR staff authorization to install the weld overlays?

A. Not Applicable. (Weld overlay was not applied.)

Qc2. Performed by qualified personnel? (Briefly describe the personnel training/qualification process used by the licensee for this activity.)

A. Not Applicable.

Qc3. Performed such that deficiencies were identified, dispositioned, and resolved?

A. Not Applicable.

d. For each mechanical stress improvement used by the licensee during the outage, was the activity performed in accordance with a documented qualification report for stress improvement processes and in accordance with demonstrated procedures? Specifically:

Qd1. Are the nozzle, weld, safe end, and pipe configurations, as applicable, consistent with the configuration addressed in the stress improvement qualification report?

A. Not Applicable. (Mechanical stress improvement was not used.)

Qd2. Does the stress improvement qualification report address the location radial loading is applied, the applied load, and the effect that plastic deformation of the pipe configuration may have on the ability to conduct volumetric examinations?

A. Not Applicable.

Qd3. Do the licensee's inspection procedure records document that a volumetric examination per the ASME Code, Section XI, Appendix VIII was performed prior to and after the application of the stress improvement?

A. Not Applicable.

Qd4. Does the stress improvement qualification report address limiting flaw sizes that may be found during pre-SI and post-stress improvement inspections and that any flaws identified during the volumetric examination are to be within the limiting flaw sizes established by the stress improvement qualification report.

A. Not Applicable.

Qd5. Performed such that deficiencies were identified, dispositioned, and resolved?

A. Not Applicable.

e. For the inservice inspection program:

Qe1. Has the licensee prepared an MRP-139 inservice inspection (ISI) program? If not, briefly summarize the licensee's basis for not having a documented program and when the licensee plans to complete preparation of the program.

A. For Unit 2, the MRP-139 ISI program is included in the Risk-Informed ISI program that was approved by letter dated 1/29/2008. The corresponding eight dissimilar metal welds in Unit 3 which were visually inspected during the Spring 2007 RFO are scheduled for volumetric (UT) examination in the next RFO.

Qe2. In the MRP-139 ISI program, are the welds appropriately categorized in accordance with MRP-139? If any welds are not appropriately categorized, briefly explain the discrepancies.

A. Yes, the eight dissimilar metal welds on each Unit are appropriately categorized in accordance with MRP-139.

Qe3. In the MRP-139 ISI program, are the ISI frequencies, which may differ between the first and second 10-year intervals after the MRP-139 baseline inspection, consistent with the ISI frequencies called for by MRP-139?

A. Not Applicable. The extent and method of examination of the eight welds after the next RFO at Unit 3 (beyond the normal ISI frequency program requirement) will be determined based on upcoming RFO results.

Qe4. If any welds are categorized as H or I, briefly explain the licensee's basis for the categorization and the licensee's plans for addressing potential PWSCC.

A. Not Applicable. (There are no welds categorized as H or I at Units 2 or 3.)

Qe5. If the licensee is planning to take deviations from the ISI "requirements" of MRP-139, what are the deviations and what are the general bases for the deviations? Was the NEI 03-08 process for filing deviations followed?

A. No additional ISI deviations are planned.