



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

**REGION I**  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

November 8, 2013

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

**SUBJECT: INDIAN POINT POWER STATION – NRC INTEGRATED INSPECTION  
REPORT 05000247/2013004 AND 05000286/2013004**

Dear Mr. Ventosa:

On September 30, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Indian Point Power Station, Units 2 and 3. The enclosed inspection report documents the inspection results, which were discussed on October 10, 2013, 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.

No NRC-identified or self-revealing findings were identified during this inspection.

However, inspectors documented two licensee-identified violations which were determined to be of very low safety significance in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Indian Point Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's

J. Ventosa

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Sincerely,

*/RA/*

Arthur L. Burritt, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket Nos. 50-247 and 50-286  
License Nos. DPR-26 and DPR-64

Enclosure: Inspection Report 05000247/2013004 and 05000286/2013004  
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Sincerely,

**/RA/**

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION I**

Docket Nos: 50-247 and 50-286

License Nos: DPR-26 and DPR-64

Report Nos: 05000247/2013004 and 05000286/2013004

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Power Station, Units 2 and 3

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

Dates: July 1, 2013, through September 30, 2013

Inspectors: J. Stewart, Senior Resident Inspector  
A. Patel, Resident Inspector  
K. Dunham, Resident Inspector  
J. Furia, Senior Health Physicist  
J. Laughlin, Emergency Preparedness Inspector  
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J. Schoppy, Senior Reactor Inspector

Approved By: Arthur L. Burritt, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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## SUMMARY

IR 05000247/2013004, 05000286/2013004; 07/01/2013 – 09/30/2013; Indian Point Power Station, Units 2 and 3; Routine Integrated Inspection Report.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4.

### Other Findings

Violations of very low safety significance that were identified by Entergy were reviewed by the inspectors. Corrective actions taken or planned by Entergy have been entered into Entergy's corrective action program (CAP). These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 2 began the inspection period at 100 percent power. On July 3, 2013, Unit 2 was manually tripped by operators due to a secondary transient which resulted from an instrument air piping failure. The reactor was restarted and placed online on July 4. Power was raised to 80 percent on July 5 then reduced to approximately 25 percent on July 7 to repair a faulty main feedwater system valve actuator. Unit 2 was restored to full power on July 9 and remained at that level for the remainder of the inspection period.

Unit 3 began the inspection period at 100 percent power. On July 29, 2013, Unit 3 was shut down to allow planned repairs to a main feedwater system valve. Unit 3 was restarted and placed online on August 1, 2013. Unit 3 was returned to full power on August 2 and operated at that level for the remainder of the inspection period.

### 1. REACTOR SAFETY

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

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

##### Readiness for Impending Adverse Weather Conditions – Hot Weather

##### a. Inspection Scope

The inspectors reviewed Entergy's preparations for the onset of hot weather on July 11, 2013. The inspectors reviewed the implementation of adverse weather preparation procedures including 2-SOP-24.1.1, "Service Water Hot Weather Operations," Revision 12 for Unit 2; and 3-SOP-RW-005, "Service Water System Operation," Revision 37, for Unit 3; before the onset of and during this adverse weather condition. The inspectors walked down the emergency diesel generators and portions of the city water system to ensure system availability. The inspectors verified that operator actions defined in Entergy's adverse weather procedure maintained the readiness of essential systems. The inspectors discussed readiness and staff availability for adverse weather response with operations and work control personnel. Documents reviewed for each section of this inspection report are listed in the Attachment.

##### b. Findings

No findings were identified.

## 1R04 Equipment Alignment

### Partial System Walkdowns (71111.04Q – 4 samples)

#### a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

#### Unit 2

- Containment spray system using Entergy procedure 2-COL-10.2.1, "Containment Spray System," Revision 20; and flow diagram 9321-F-2735, when 22 fan coil unit was out of service on July 2, 2013, after a failed flow test (CR-IP2-2013-2676).
- 22 Boric acid transfer pump, and associated piping and boric acid storage tanks when 21 boric acid transfer pump was removed from service for planned maintenance to replace the mechanical seal on July 24, 2013. Entergy procedure 2-COL-3.1, "Chemical and Volume Control System," Revision 41; and drawing 9321-F-2736 were used for the walkdown.

#### Unit 3

- Residual heat removal system using Entergy procedure 3-COL-RHR-001, "Residual Heat Removal System," Revision 28; when 31 residual heat removal pump was out of service on August 20, 2013, for planned maintenance
- 31 and 33 component cooling pumps and header using Entergy procedure 3-COL-CC-1, "Component Cooling System," Revision 28; when 32 component cooling water pump was removed from service for a motor inspection on September 19, 2013

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the Updated Final Safety Evaluation Report (UFSAR), technical specifications, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also routinely performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

#### b. Findings

No findings were identified.



1R05 Fire Protection.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 6 samples)a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Entergy staff controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the pre-fire plan and fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

Unit 2

- Diesel fire pump house, exterior building (Pre-Fire Plan 265 was reviewed) on July 2, 2013
- Main control room and adjacent areas (Pre-Fire Plan 253 was reviewed) on August 2, 2013
- Primary auxiliary building elevation 80' (Pre-Fire Plan 211 was reviewed) on September 13, 2013
- Primary auxiliary building elevation 15' (Pre-Fire Plan 204 was reviewed) on September 19, 2013

Unit 3

- Primary auxiliary building elevation 41' (Pre-Fire Plan 306 was reviewed) on July 10, 2013
- Control building, elevation 53', control room (Pre-Fire Plan 353 was reviewed) on August 20, 2013

b. Findings

No findings were identified.

.2 Fire Protection – Drill Observation (71111.05A – 1 sample)a. Inspection Scope

The inspectors observed a fire brigade drill conducted on September 21, 2013, that involved a fire in the 34 battery room, inside the cable spreading room, and in the control building 33' elevation. The inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that Entergy personnel identified deficiencies; openly discussed problems in a self-critical manner at the post-drill debrief; and took appropriate corrective actions as required. The inspectors evaluated specific attributes as follows:

- Proper wearing of turnout gear and self-contained breathing apparatus
- Proper use and layout of fire hoses
- Employment of appropriate fire-fighting techniques
- Sufficient fire-fighting equipment brought to the scene
- Effectiveness of command and control
- Search for victims and propagation of the fire into other plant areas
- Smoke removal operations
- Utilization of pre-planned strategies
- Adherence to the pre-planned drill scenario
- Drill objectives met

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with Entergy's fire-fighting strategies.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 2 samples)

Unit 2 Internal Flooding Review

a. Inspection Scope

For the plant areas listed below, the inspectors reviewed the Unit 2 UFSAR and plant procedures to assess susceptibilities involving internal flooding. The inspectors also reviewed the CAP to determine if Entergy staff identified and corrected flooding problems and whether operator actions for coping with flooding were adequate. As applicable, the inspectors verified the adequacy of equipment seals located below the flood line, common drain lines and sumps, and the ability of operator response including installation of temporary or removable flood barriers.

- 480V switchgear room flooding resulting from a seismically induced break of the fire protection piping and deluge valves for the water spray system for main, station auxiliary, and unit auxiliary transformers
- Auxiliary feedwater pump room flooding resulting from piping breaks in the feedwater, condensate storage, and city water systems

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q – 5 samples)Unit 2.1 Quarterly Review of Licensed Operator Requalification Testing and Training (1 sample)a. Inspection Scope

The inspectors observed a licensed operating crew evaluated simulator session on July 2, 2013. The evaluated scenario (LRQ-SES-ECA00A) included a loss of all AC power following turbine first stage pressure instrument failure. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures, including 2-AOP-INST-1, "Instrument/Controller failures;" 2-AOP-138KV-1, "Loss of Power to 6.9KV Bus 5 and 6;" and 2-E-0, "Reactor Trip or Safety Injection." The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisors. The inspectors verified the timeliness of the emergency classification made by the shift manager was in accordance with Entergy procedure IP-EP-210, "Central Control Room, IPEC Emergency Plan Implementing Procedure." Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems. The inspectors verified that Entergy evaluated the performance of the operating crew against pre-established criteria, such as completion of critical tasks. Simulator fidelity was evaluated using routine control room observations.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Requalification Testing and Training (Annual Requalification Operating Test) (1 sample)a. Inspection Scope

The inspectors observed a crew composed of licensed operators in an evaluated simulator session on September 4, 2013. The session was part of the annual operating test required by 10 CFR 55.59. The evaluated scenario (LRQ-SES-16) included a main steam line break in the turbine building coupled with an anticipated transient without scram (ATWS) and failure of the main steam isolation valves to close from the control room. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures, including 2-AOP-CCW-1, "Loss of Component Cooling Water;" 2-AOP-UC-1, "Uncontrolled Cooldown;" 2-FR-S.1, "Response to Nuclear Power Generation / ATWS;" and 2-E-0, "Reactor Trip or Safety Injection." The inspectors assessed the clarity and effectiveness of crew communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisors. The inspectors verified the timeliness of the emergency classification made by the shift manager was in accordance with licensee procedure IP-EP-210, "Central Control Room, IPEC Emergency Plan Implementing Procedure." Additionally, the inspectors assessed the

ability of the crew and training staff to identify and document crew performance problems. The inspectors verified that the licensee evaluated the performance of the operating crew against pre-established criteria, including completion of critical tasks. Simulator fidelity was evaluated by comparison with routine control room observations.

b. Findings

No findings were identified.

.3 Quarterly Review of Licensed Operator Performance in the Main Control Room  
(1 sample)

a. Inspection Scope

The inspectors observed a loss of instrument air transient resulting in a Unit 2 manual reactor trip on July 3, 2013. Subsequently, the inspectors observed control room operations during a higher risk evolution to restore instrument air to the auxiliary feedwater system and other risk significant equipment. Following the restoration, the inspectors observed portions of the reactor restart and recovery to power operations. The inspectors observed the infrequently performed test or evolution briefings, pre-evolution briefings, and reactivity control briefings as specified in Entergy's Operations Section Expectations Handbook and Entergy Administrative Procedure, OP-AA-329, "Conduct of Infrequently Performed Tests and Evolutions," Revision 1. Additionally, the inspectors observed crew performance to verify that procedure use, crew communications, and coordination of activities between work groups and the control room met established expectations and standards.

b. Findings

No findings were identified.

Unit 3

.4 Quarterly Review of Licensed Operator Performance in the Main Control Room  
(1 sample)

a. Inspection Scope

The inspectors observed manual operation of 32 main feedwater regulating valve (MFRV) and 32 main boiler feedwater pump (MBFP) on July 9, 2013 (CR-IP3-2013-3349). The manual operation was due to a feedwater transient where 31 and 32 MBFP flows diverged rapidly. During the transient 31 MBFP flow dropped quickly and 32 MBFP flow rapidly increased causing a flow imbalance. The inspectors observed the operators take manual control of the 32 MBFP and lower the speed until the controls were returned to auto while also manipulating the flow on the 32 MFRV manually due to a previously identified condition (CR-IP3-2013-3345). Additionally, the inspectors reviewed previous test data stroking the feedwater line isolation valves BFD-MOV-5-1, 2, 3, and 4 in accordance with licensee procedure 3-PT-CS041, "Feedwater Line Isolation and Regulating Valves Timing," Revision 10.

b. Findings

No findings were identified.

.5 Quarterly Review of Licensed Operator Requalification Testing and Training (Annual Requalification Operating Test) (1 sample)a. Inspection Scope

The inspectors observed a crew composed of licensed operators in an evaluated simulator session on September 23, 2013. The session was part of the annual operating test required by 10 CFR 55.59. The evaluated scenario (13SX-LOR-SES026) included a pressurizer level instrument failure, a charging pump trip, a loss of 480 volt bus 5A, and a small break loss of coolant accident causing an Orange Path transition to emergency procedure FR-C.2, "Response to Degraded Core Cooling." The inspectors assessed the clarity and effectiveness of crew communications; implementation of actions in response to alarms and degrading plant conditions including implementation of 3-EOP-E-0, "Reactor Trip or Safety Injection," and the oversight and direction provided by the control room supervisors. The inspectors verified the timeliness of the emergency classifications made by the shift manager were in accordance with licensee procedure IP-EP-210, "Central Control Room, IPEC Emergency Plan Implementing Procedure." Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems. The inspectors verified that the licensee evaluated the performance of the operating crew against pre-established criteria, including completion of critical tasks. Simulator fidelity was evaluated by comparison with routine control room observations.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 3 samples)a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance work orders, and Maintenance Rule basis documents to ensure that Entergy was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the Maintenance Rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Entergy staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that Entergy staff was identifying and addressing common cause failures that occurred within and across Maintenance Rule system boundaries.

Unit 2

- 2011-2013 Maintenance Rule Periodic Assessment [a(3)], June 21, 2013

Unit 3

- Performance evaluation following lifting of MS-52, steam supply relief valve to 32 auxiliary boiler feedwater pump on March 28, 2013, documented in CR-IP3-2013-3353. The a(1) evaluation and the second quarter 2013 Unit 3 auxiliary feedwater system health report were reviewed by the inspectors.
- Performance evaluation following failure of 32 safety injection pump due to breaker trip when attempting to fill accumulators (CR-IP3-2013-986). The condition report, a(1) evaluation, and the second quarter 2013 Unit 3 safety injection system health report were reviewed by the inspectors and the inspectors attended the licensee's system health performance review conducted on August 19, 2013.

b. Findings

No findings were identified.

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

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy personnel performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Entergy personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Entergy performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk in accordance with licensee procedures. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

Unit 2

- July 2, 2013; Green risk and risk management after failure of 22 containment fan coil unit flow, requiring a service water flow balance using Entergy procedure 2-PT-V067A, "Essential Service Water Flow Balance." The inspectors verified the Critical Evolution Review meeting, infrequently performed test briefing, crew pre-test briefing, contingency actions, and the crew communications during the flow balance activities affecting emergency diesel generators, instrument air compressors, and the redundant fan coil units.
- July 3, 2013; Orange risk and risk management after failure of the instrument air supply to the auxiliary boiler feedwater pumps. The inspectors attended the Critical Evolution Meeting where the risk management actions were prescribed, observed pre-evolution briefings of the operations crew including the Infrequently Performed

Task or Evolution briefing, and observed the repair. The inspectors verified contingency action readiness using Entergy procedure 2-SOP-ESP-001, Revision 9, Section 4.6, Local Equipment Operation.(CR-IP2-2013-2717).

### Unit 3

- August 15, 2013; risk management following piping failure and isolation of city water supply to Unit 3 auxiliary boiler feedwater pumps, charging pumps, and boric acid transfer piping. The inspectors verified Entergy's contingency plan to plug the faulted line and restore city water if needed, and availability of the Appendix R emergency diesel generator with completion of 3-PT-W012, Revision 19, "Appendix R Diesel Support Systems Inspection." (CR-IP3-2013-3713)
- September 3, 2013; risk management when 33 emergency diesel generator and 31 charging pump were removed from service for planned preventive maintenance. The inspectors verified Entergy's contingency postings in accordance with procedure EN-OP-119, "Protected Equipment Postings," as part of the inspection.
- September 24, 2013, risk management when 32 auxiliary boiler feed pump and 138 kV feeder 33332L&M were removed from service for planned maintenance and surveillance testing. The inspectors verified Entergy's contingency postings in accordance with procedure EN-OP-119, "Protected Equipment Postings," as part of the inspection.

#### b. Findings

No findings were identified.

### 1R15 Operability Determinations and Functionality Assessments (71111.15 – 8 samples)

#### a. Inspection Scope

The inspectors reviewed system operability and operability determinations for the following degraded or non-conforming conditions:

### Unit 2

- Operability of backup nitrogen to instrument air for auxiliary feedwater flow control following loss of instrument air on July 3, 2013 (CR-IP2-2013-2724)
- Operability of 23 Charging Pump for remote shutdown inventory control after low oil pressure trip on August 6, 2013 (CR-IP2-2013-3244)
- Operability of the reactor coolant system when high leakage was identified on August 15, 2013 (CR-IP2-2013-3364)

### Unit 3

- Operability of Unit 3 control room envelope boundary due to uncured control room habitability envelope associated with a penetration seal after performance of engineering change EC-40329 on March 9, 2013 (CR-IP3-2013-01460)
- Operability of 32 MFRV, FCV-427 and 32 MBFP in manual operation due to an increased flow on 32 MBFP while 32 MFRV was in manual on July 9, 2013 (CR-IP3-2013-3349)

- Operability of 32 steam generator feedwater flow indicator, FI-428B reading high on August 7, 2013 (CR-IP3-2013-3646)
- Operability of 34 MFRV, FCV-447 due to cracks on all four metal spacers that assist in holding the valve actuator to the valve body on August 15, 2013 (CR-IP3-2013-3728)
- Operability of valve SI-MOV-1835B, following a blown fuse on August 8, 2013 (CR-IP3-2013-03666) the operability was verified using Entergy test 3-PT-Q085, Safety Injection System Valve Operability Test, Revision 20 performed on September 17, 2013

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Entergy's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Entergy. The inspectors determined, as appropriate compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)

Temporary Modification

a. Inspection Scope

The inspectors reviewed the temporary modification listed below to determine whether the modifications affected the safety functions of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation and post-modification testing results and conducted field walkdowns of the modifications to verify that the temporary modifications did not degrade the design bases, licensing bases, and performance capability of the affected systems.

- EC-39568 for Unit 2 to install a temporary jumper on 21 static inverter frequency detector board terminals TS2-2 and TS2-5 to remove redundant frequency protection from the meter indication. Condition report, CR-IP2-2012-5584 regarding an inadvertent transfer to the alternate power supply due to a faulty frequency meter, was reviewed during the inspection

b. Findings

No findings were identified.



1R19 Post-Maintenance Testing (71111.19 – 7 samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

Unit 2

- Stroke test of 21 feedwater regulating valve FCV-417 under work order 356028-15 (2-PT-V024-DS042, Revision 10) following actuator replacement per work order 356028-09, Copes Vulcan Steam Generator Feedwater Regulating Valve Maintenance, Revision 10, on July 9, 2013
- Operation of 21 emergency diesel generator using Entergy test 2-PT-M021, Emergency Diesel Generator 21 Load Test, Revision 22, following work to replace jacket water pressure switch PS-3 on July 16, 2013 (CR-IP2-2013-2903). The inspectors observed portions of the troubleshooting, repair, and the post-repair diesel operations
- Operation of 23 auxiliary feed pump using Entergy test 2-PT-Q-027B, Auxiliary Feed Pump, Revision 19, following modification EC-18294 associated with replacement of flow indicators in the recirculation line per work order 256147 on September 4, 2013 (CR-IP2-2013-3666)
- Operation and an inservice comprehensive test of 22 auxiliary component cooling water pump following impeller replacement under work order 237012. The test was documented in licensee procedure 2-PT-2Y019B, 22 Auxiliary Component Cooling Pump Comprehensive Test, Revision 2, on September 26, 2013

Unit 3

- Start of emergency diesel generator 31 using each air start motor following dual air inlet strainer replacement per work orders 271917-09 (west) and 271916-09 (east), on July 9, 2013
- Stroke test of 32 feedwater regulating valve FCV-427 under work order 354670-19 (3-PT-CS041, Revision 10) following valve replacement on August 5, 2013
- Stroke test of SI-MOV-1835B using Entergy test 3-PT-Q085, Safety Injection System Valve Operability Test, Revision 20, following work to replace 3 line fuses and control power fuse for valve position indication on August 8, 2013 (CR-IP3-2013-03666), and again following six year preventive maintenance inspection on September 17, 2013, under work order 52308103

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)Unit 3 Short Duration Outagea. Inspection Scope

The inspectors reviewed Entergy personnel's risk management plan for maintenance activities associated with a short duration, Mode 3 outage that occurred July 29 to August 1, 2013. The inspectors observed Entergy's work oversight activities and verified that material controls such as foreign material exclusion were maintained for limited work conducted in containment prior to plant restart. During the outage, the inspectors conducted walk downs of the auxiliary feedwater system when it was used to provide steam generator inventory control. The inspectors verified that equipment issues were documented in the CAP and corrected as necessary to support plant startup and safe operations.

b. Findings

No findings were identified.

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

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied technical specifications, the UFSAR, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

Unit 2

- 2-PT-Q034, 22 Auxiliary Feed Pump, Revision 28, on August 8, 2013 (pump and valve IST)
- 2-PT-Q028A, 21 Residual Heat Removal Pump, Revision 20, on September 17, 2013 (pump and valve IST)

Unit 3

- 3-PT-M079C, 33 Emergency Diesel Generator Functional Test, Revision 50, on August 5, 2013
- 3-PT-2Y001B, 32 Diesel Generator Overspeed Trip Test, Revision 6, on August 6, 2013
- 3-PT-Q120C, 33 Auxiliary Feedwater Pump, Revision 18, on August 8, 2013 (pump and valve IST)
- 3-PT-Q134A, 31 Residual Heat Removal Pump Functional Test, Revision 9, on September 10, 2013 (IST)

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**1EP4 Emergency Action Level and Emergency Plan Changes (71114.04 – 1 sample)a. Inspection Scope

The Office of Nuclear Security and Incident Response headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures and the Emergency Plan located under ADAMS accession number ML13232A043 as listed in the Attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)Training Observationsa. Inspection Scope

The inspectors observed a simulator training evolution for Unit 3 licensed operators on August 6, 2013, which required emergency plan implementation by an operations crew. Entergy planned for this evolution to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew which were evaluated in accordance with Entergy procedures IP-EP-210, "Central Control Room, IPEC

Emergency Plan Implementing Procedure,” and Emergency Action Level Matrix, Revision 12-1. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors’ activities was to note any weaknesses and deficiencies in the crew’s performance in classifying events and making appropriate notifications and ensure that Entergy evaluators noted problems and entered them into the CAP.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstone: Public Radiation Safety and Occupational Radiation Safety**

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

a. Inspection Scope

During the week of August 19–23, 2013, the inspectors reviewed and assessed Entergy’s performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. The inspectors verified that Entergy is properly identifying and reporting performance indicators (PIs) for the Occupational Radiation Safety Cornerstone and identifying those performance deficiencies that were reportable as a PI and which may have represented a substantial potential for overexposure of the worker. The inspectors used the requirements in 10 CFR Part 20 and guidance in Regulatory Guide 8.38, “Control of Access to High and Very High Radiation Areas for Nuclear Plants,” Technical Specifications, and Entergy’s procedures required by Technical Specifications as criteria for determining compliance.

The inspectors reviewed Entergy’s performance indicators for the Occupational Exposure Cornerstone for follow-up. The inspectors reviewed the results of radiation protection program audits. The inspectors reviewed reports of operational occurrences related to occupational radiation safety since the last inspection.

Radiological Hazard Assessment

The inspectors determined if, since the last inspection, there have been changes to plant operations that may result in a significant new radiological hazard for onsite workers or members of the public. The inspectors verified Entergy has assessed the potential impact of these changes and has implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last two radiological surveys from selected plant areas. The inspectors verified that the thoroughness and frequency of the surveys is appropriate for the given radiological hazard.

The inspectors conducted walk downs of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and potential radiological conditions.

The inspectors selected air sample survey records and verified that samples were collected and counted in accordance with Entergy procedures. The inspectors observed work in potential airborne areas and verified that air samples were representative of the breathing air zone. The inspectors verified that Entergy has a program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

#### Instructions to Workers

The inspectors selected containers holding nonexempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers and verified that they were labeled and controlled.

The inspectors selected occurrences where a worker's electronic personnel dosimeter noticeably malfunctioned or alarmed. The inspectors verified that workers responded appropriately to the off-normal condition. The inspectors verified that the issue was included in the CAP and dose evaluations were conducted as appropriate.

#### Contamination and Radioactive Material Control

The inspectors observed several locations where Entergy monitors potentially contaminated material leaving the radiologically controlled area and inspected the methods used for control, survey, and release from these areas. The inspectors verified that the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed Entergy's criteria for the survey and release of potentially contaminated material. The inspectors verified that there was guidance on how to respond to an alarm that indicated the presence of licensed radioactive material.

The inspectors reviewed Entergy's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters.

The inspectors selected sealed sources from Entergy's inventory records that present the greatest radiological risk. The inspectors verified that sources are accounted for and had been verified to be intact.

The inspectors verified that any transactions involving nationally tracked sources were reported.

### Radiological Hazards Control and Work Coverage

The inspectors examined Entergy's physical and programmatic controls for highly activated or contaminated materials stored within spent fuel and other storage pools. The inspectors verified that appropriate controls were in place to preclude inadvertent removal of these materials from the pool.

The inspectors conducted selective inspection of posting and physical controls for high radiation areas (HRAs) and very high radiation areas (VHRAs) to the extent necessary to verify conformance with the occupational performance indicator.

### Risk-Significant High Radiation Area and Very High Radiation Area Controls

The inspectors discussed with the radiation protection manager the controls and procedures for high-risk HRAs and VHRAs. The inspectors verified that any changes to Entergy's procedures did not substantially reduce the effectiveness and level of worker protection.

The inspectors discussed with first-line health physics supervisors the controls in place for special areas that have the potential to become VHRAs during certain plant operations. The inspectors verified that Entergy controls for all VHRAs, and areas with the potential to become a VHRA, ensured that an individual is not able to gain unauthorized access to the VHRA.

### Problem Identification and Resolution

The inspectors verified that problems associated with radiation monitoring and exposure control were being identified by Entergy at an appropriate threshold and were properly addressed for resolution in their CAP. In addition to the above, the inspectors verified the appropriateness of the corrective actions for a selected sample of problems documented by Entergy that involve radiation monitoring and exposure controls. The inspectors determined that Entergy was assessing the applicability of operating experience to their plants.

#### b. Findings

No findings were identified.

#### 2RS2 Occupational ALARA Planning and Controls (71124.02 – 1 sample)

During the week of August 19–23, 2013, the inspectors assessed performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements in 10 CFR Part 20, Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Plants will be As Low As Reasonably Achievable," Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposure As Low as Reasonably Achievable," Technical Specifications, and Entergy's procedures required by Technical Specifications as criteria for determining compliance.

a. Inspection Scope

Problem Identification and Resolution

The inspectors verified that problems associated with ALARA planning and controls were being identified by Entergy at an appropriate threshold and were properly addressed for resolution in their CAP.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation (71124.05 – 1 sample)

During the week of August 19–23, 2013, the inspectors verified that Entergy was ensuring the accuracy and operability of radiation monitoring instruments that are used to (1) monitor areas, materials, and workers to ensure a radiologically safe work environment and (2) detect and quantify radioactive process streams and effluent releases. The instrumentation subject to this review included equipment used to monitor radiological conditions incident to normal plant operations, including anticipated operational occurrences and conditions resulting from postulated accidents. The inspectors used the requirements in applicable industry standards and Entergy's procedures required by Technical Specifications as criteria for determining compliance.

a. Inspection Scope

Calibration and Testing Program

As part of the problem identification and resolution review, the inspectors verified that appropriate corrective actions were implemented in response to indications of degraded instrument performance.

The inspectors selected samples of personnel contamination monitors and small article monitors used on site, and verified that the alarm set-point values were reasonable under the circumstances to ensure that licensed material is not released from the site.

The inspectors reviewed calibration documentation for each instrument selected above and discussed the calibration methods with Entergy to determine consistency with the manufacturer's recommendations.

The inspectors selected portable survey instruments that did not meet acceptance criteria during calibration or source checks. The inspectors verified that Entergy had taken appropriate corrective action for instruments found significantly out of calibration. The inspectors verified that Entergy had evaluated the possible consequences of instrument use since the last successful calibration or source check.

Problem Identification and Resolution

The inspectors verified that problems associated with radiation monitoring instrumentation were being identified by Entergy at an appropriate threshold and were properly addressed for resolution in their CAP.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151 – 12 samples)

Mitigating Systems Performance Index

a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems:

Unit 2

- 3Q12–2Q13, Safety System Functional Failures (MS05)
- 3Q12–2Q13, Emergency AC Power System (MS06)
- 3Q12–2Q13, High Pressure Injection System (MS07)
- 3Q12–2Q13, Heat Removal System (MS08)
- 3Q12–2Q13, Residual Heat removal System (MS09)
- 3Q12–2Q13, Cooling Water Systems (MS10)

Unit 3

- 3Q12–2Q13, Safety System Functional Failures (MS05)
- 3Q12–2Q13, Emergency AC Power System (MS06)
- 3Q12–2Q13, High Pressure Injection System (MS07)
- 3Q12–2Q13, Heat Removal System (MS08)
- 3Q12–2Q13, Residual Heat removal System (MS09)
- 3Q12–2Q13, Cooling Water Systems (MS10)

To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed Entergy's operator narrative logs, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals. The inspectors reviewed the second quarter 2013 electronic submittal form for the selected indicators including a comment reflecting a change in the probabilistic risk assessment model. The inspectors verified the probabilistic safety assessment model inputs to the mitigating system performance indicator for emergency AC power by review of the mitigating system performance indicator basis document.

b. Findings

No findings were identified.



#### 4OA2 Problem Identification and Resolution (71152 – 3 samples)

##### .1 Routine Review of Problem Identification and Resolution Activities

###### a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Entergy entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended condition report screening meetings.

###### b. Findings

No findings were identified.

##### .2 Annual Sample: In-Storage Maintenance and Shelf Life Control (1 sample)

###### a. Inspection Scope

The inspectors performed an in-depth review of Entergy's apparent cause evaluations (ACEs) and corrective actions associated with two recent quality assurance (QA) audit findings. In July 2012, QA audit QA-11-2012-HQN-1 identified that Materials, Purchasing and Contracts' (MP&C) in-service maintenance (ISM) program did not meet the requirements of Entergy procedure EN-DC-313, "Procurement Engineering Process," CR-IP2-2012-4240. Specifically, QA identified several examples that demonstrated that MP&C did not ensure that required periodic maintenance and/or monitoring was scheduled and performed for material stored in onsite warehouses to prevent or detect deterioration while in storage. During the 2012 audit, QA also identified a finding associated with MP&C not meeting the shelf life control requirements of Entergy procedure EN-MP-125, "Control of Material," CR-IP2-2012-4237. Specifically, a QA warehouse parts inventory identified several items with an expired shelf life and evidence of ineffective shelf life segregation controls.

The inspectors assessed Entergy's problem identification threshold, cause analysis, extent of condition reviews, compensatory actions, and the prioritization and timeliness of corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with these issues and whether the planned or completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Entergy's CAP, 10 CFR 50 Appendix B, and Electric Power Research Institute (EPRI) NP-6896, "Guidelines for Determining In-Storage Maintenance of Items for Nuclear Facilities." In addition, the inspectors performed field walkdowns and interviewed MP&C personnel to assess the effectiveness of the implemented corrective actions. Specifically, the inspectors toured the Riverfront warehouse and several of the upper level warehouses to independently assess the material condition, storage environment, and to verify the adequacy of Entergy's ISM and shelf life control programs. The inspectors also reviewed a sample of procurement engineering evaluations to ensure that Entergy applied adequate engineering rigor and

sound engineering to the ISM process. The inspectors observed portions of a receipt inspection and reviewed a sample of receipt inspection records for several recent Entergy procurements processed through the Indian Point warehouse to verify adequate receipt inspection controls and documentation.

b. Findings and Observations

No findings were identified.

In 2008 and 2010, QA assessments included observations and findings concerning programmatic deficiencies associated with the ISM program. In reviewing the previous corrective actions for these issues, Entergy noted that MP&C had implemented several ISM program improvements such as: converting to fleet-based procedures, identifying training needs and conducting training, and converting their old ISM process (SAP/Maximo) over to the current integrated work management process (IAS). However, Entergy determined that the previous program changes did not fully evaluate and adequately align the work order frequency to the EPRI guidelines as referenced in Entergy procedure EN-DC-313 resulting in the 2012 QA audit finding. Entergy determined that the apparent cause of this issue was less than adequate rigor associated with the program changes. Entergy also determined that a contributing cause was MP&C's failure to use the WR104 report tool for controlling program requirements. Instead of the WR104 report tool, the MP&C staff had developed a spreadsheet which did not contain a complete list of all items requiring ISM. In addition, Entergy determined that a lack of consistent leadership in the warehouse, less than adequate supervisory oversight, and inadequate program monitoring caused the shelf life deficiencies. Specifically, Entergy made personnel changes in the warehouse during 2011 that resulted in staff members rotating through management positions leading to inconsistent ownership of warehouse processes, MP&C staff overlooking the shelf life program, and an increased backlog of expired items.

In response to the QA-identified issues and aligned with their associated apparent and contributing causes, Entergy initiated appropriate short-term and long-term corrective actions. Entergy's corrective actions included: MP&C leadership changes, standardizing the MP&C ISM process into a detailed procedure (EN-MP-140) with appropriate CAP references (condition report initiation thresholds), incorporating the WR104 report into their daily business and metrics (populating it with ISM work order information and applicable due dates), performing a gap analysis to identify which ISM flagged items did not have associated preventive maintenance work orders, developing and scheduling new ISM preventive maintenance as needed, performing procurement engineering evaluations to define the scope and frequency of ISM activities, establishing and implementing an action plan to correct shelf life deficiencies (including scrapping items, incorporating in the ISM program, and evaluating extensions as appropriate), and tagging and segregating expired shelf life items until properly dispositioned.

The inspectors noted that QA performed follow-up assessments in November 2012 and June 2013, and an Entergy MP&C headquarters procurement engineering team performed a follow-up assessment in May 2013 to ensure that MP&C continued to make adequate progress in their corrective action implementation. The inspectors also noted that Entergy MP&C headquarters planned an additional follow-up assessment in September 2013 and Entergy scheduled an effectiveness review for December 2013. The inspectors concluded that Entergy had taken timely and appropriate actions in

accordance with engineering procurement procedures, material control and purchasing procedures, and Entergy's CAP. The inspectors determined that Entergy's associated ACEs were sufficiently thorough and based on the best available information, sound judgment, and relevant operating experience. Entergy's assigned corrective actions were aligned with the identified causal factors, adequately tracked, appropriately documented, and completed as scheduled. Based on the documents reviewed, site and warehouse walkdowns, and discussions with MP&C personnel, the inspectors noted that Entergy personnel identified problems and entered them into the CAP at a low threshold.

.3 Annual Sample: Review of the Operator Workaround Program (2 samples)

a. Inspection Scope

The inspectors reviewed the cumulative effects of the existing operator workarounds, operator burdens, existing operator aids and disabled alarms, and open main control room deficiencies to identify any effect on emergency operating procedure operator actions, and any impact on possible initiating events and mitigating systems. The inspectors evaluated whether station personnel had identified, assessed, and reviewed operator workarounds as specified in Indian Point Unit 2 and Unit 3 procedure EN-WM-100, "Work Request Generation, Screening and Classification," Revision 8. The inspectors reviewed Entergy's process to identify, prioritize and resolve main control room distractions to minimize operator burdens. The inspectors reviewed the system used to track these operator workarounds and recent Entergy self assessments of the program. The inspectors also toured the control room and discussed the current operator workarounds with the operators to ensure the items were being addressed on a schedule consistent with their relative safety significance.

b. Findings and Observations

No findings were identified.

The inspectors determined that the issues reviewed did not adversely affect the capability of the operators to implement abnormal or emergency operating procedures. The inspectors also verified that Entergy entered operator workarounds and burdens into the CAP at an appropriate threshold and planned or implemented corrective actions commensurate with their safety significance.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 5 samples)

.1 Plant Events (1 sample)

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Entergy made appropriate emergency classification assessments and properly reported the event in accordance

with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Entergy's follow-up actions related to the events to assure that Entergy implemented appropriate corrective actions commensurate with their safety significance.

### Unit 2

- On July 3, 2013, at approximately 07:41 a.m., Unit 2 control room operators manually tripped the reactor after both main boiler feed pumps unexpectedly tripped. The manual trip was initiated due to separation of a coupling on the instrument air line in the transformer yard causing loss of instrument air to the main feedwater regulating valves resulting in loss of feedwater. The inspectors were in the control room at the time of the event and observed operators complete portions of abnormal and emergency operating procedures 2-AOP-FW-1 and 2-EOP-E-0.

#### b. Findings

No findings were identified.

### Unit 2

- .2 (Closed) Licensee Event Report (LER) 05000247/2012-008-00: Technical Specification Prohibited Condition Due to an Inoperable 22 Static Inverter for Greater than the Technical Specification Allowed Outage Time Caused by a Failed Frequency Meter (1 sample)

On September 7, 2012, Unit 2 entered technical specification actions for an inoperable 22 static inverter after the inverter had auto-swapped to its alternate power supply. Troubleshooting determined that the frequency meter optical sensor light was out and was restored by lightly tapping on the frequency meter. The technical specification action was exited. On September 10, the NRC inspectors questioned the ability of the light to sustain a seismic event and the licensee re-entered the technical specification action and replaced the frequency meter. Because in hindsight, Entergy's requirements for technical specification operability had not been met on September 7, until September 10, Entergy reported the event for failing to meet technical specification requirements. Subsequently, the internal controls of each of the static inverters was upgraded adding a redundant frequency protection circuit and making the frequency meter light circuit unnecessary. Seismic testing of the removed frequency meter showed no vulnerability to seismic events. The frequency light circuit protection was removed from 21, 22, and 24 inverters by temporary modifications and Entergy intended to remove the frequency light protection circuitry during the planned 2014 refueling outage. Enforcement action regarding this event was provided in NRC Inspection Report 50-247/2012-004, Section 1R15.4. This LER is closed.

- .3 (Closed) LER 05000247/2012-009-00 and LER 05000247/2012-009-01: Unanalyzed Condition and Safety System Functional Failure Due to Use of Radiation Bypass Switch for Steam Generator Blowdown Isolation Valves Which Defeats Their Automatic Isolation for Analyzed Events (2 samples)

On November 26, 2012, Entergy personnel identified that use of the radiation bypass switch for steam generator blowdown isolation valves during modes 1-3 would defeat the automatic isolation of the valves for degraded heat sink events, and that steam

generator inventory would not be maintained if only one motor driven auxiliary boiler feedwater pump was available. Entergy personnel previously reviewed past operation and identified in LER 05000247/2012-004-00 that during calibration of R-49, from January 19, 2011 – January 27, 2011, the radiation bypass switch position was in use, and on January 20, 2011, the 21 auxiliary boiler feedwater pump was removed from service for maintenance. This resulted in an unanalyzed condition and safety system functional failure. Entergy personnel determined that the apparent cause was a 2002 revision to the R-49 calibration procedure that removed a restriction on when the calibration can be performed. A narrowly focused review at that time failed to identify other occasions that were the basis for this LER and its supplement. The supplement included results from Entergy's ACE which identified that the rad bypass could be used to support maintenance as well as testing. Corrective actions included a revision of the R-49 calibration procedure to allow the blowdown isolation function to remain available when calibrating the radiation monitor and a lockout of tag outs that used the rad bypass switch to support maintenance. Entergy personnel documented this issue in CR-IP2-2012-2408 and other condition reports. The inspectors reviewed the LER, condition reports, and corrective actions and discussed the event with station personnel to determine whether the station adequately evaluated the condition. The inspectors verified that the calibration procedure for R-49 had been revised to delete the use of the rad bypass switch. The inspectors had previously identified a Green NCV, as listed in NRC Inspection Report 50-247/2012-005, Section 4OA3. These LERs are closed.

### Unit 3

- .4 (Closed) LER 05000286/2012-004-00: Automatic Reactor Trip as a Result of a Turbine Generator Trip Due to Loss of 345 kV Feeders W97 and W98 Caused by Storm Damage to Feeder Insulators (1 sample)

Indian Point Unit 3 experienced an automatic reactor trip on October 29, 2012, as a result of a switchyard isolation of the main generator output. The switchyard isolation was caused by Super-storm Sandy damage to insulators in the 345 kV offsite distribution system. The plant responded as designed and there were no complications of significance in either the plant or personnel response. NRC inspectors stationed at the site observed the trip response and plant recovery as documented in NRC Inspection Report 50-286/2012-005. This LER is closed.

### 4OA5 Other Activities

- .1 Operation of an ISFSI at Operating Plants (60855, 60855.1)

#### a. Inspection Scope

On August 19 to August 23, 2013, the inspectors observed and evaluated Entergy's loading of a multi-purpose canister (MPC) associated with the license's current independent spent fuel storage installation (ISFSI) dry cask campaign. The inspectors also reviewed Entergy's activities related to long-term operation and monitoring of their ISFSI. The inspectors verified compliance with the certificate of compliance (CoC), technical specifications, regulations, and Entergy procedures.

The inspectors observed the loading of spent fuel assemblies into the MPC and the MPC/Hi-TRAC being moved from the cask pit to the cask wash down area. Inspectors

also observed other cask processing operations including: welding of the lid to the MPC, hydrostatic testing, non-destructive examination of the lid weld, and forced helium dehydration of the MPC, and preparations for transport. During performance of these activities, the inspectors evaluated Entergy's familiarity with procedures, supervisory oversight, and communication and coordination between the personnel involved. The inspectors attended Entergy briefings to assess their ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors. The inspectors reviewed loading and monitoring procedures and evaluated Entergy's adherence to these procedures. The inspectors also reviewed the training of personnel assigned to ISFSI activities.

The inspectors reviewed Entergy's program associated with fuel characterization and selection for storage. The inspectors reviewed cask fuel selection packages to verify that Entergy was loading fuel in accordance with the CoC and technical specifications. The inspectors confirmed that Entergy did not plan to load any damaged fuel assemblies during this campaign.

The inspectors reviewed radiation protection procedures and radiation work permits associated with the ISFSI loading campaign. The inspectors also reviewed the ALARA goal for the cask loading to determine the adequacy of Entergy's radiological controls and to ensure that radiation worker doses were ALARA, and that project dose goals could be achieved. The inspectors reviewed radiological survey records from the current loading campaign to confirm that dose levels on the HI-TRAC surface were as expected.

The inspectors performed tours of the heavy haul path and ISFSI pad to assess the material condition of the path, pad, and the loaded HI-STORM. The inspectors checked the daily logs in the Unit 2 control room and verified Entergy was appropriately performing daily HI-STORM vent surveillances in accordance with technical specification requirements. The inspectors also verified that transient combustibles were not being stored on the ISFSI pad or in the vicinity of the HI-STORM. The annual environmental reports were reviewed to verify that areas around the ISFSI site boundary were within limits specified in 10 CFR Part 20 and 10 CFR Part 72.104. The inspectors reviewed Entergy's 10 CFR 72.48 screenings to verify that they had appropriately considered the conditions under which they may make changes without prior NRC approval. The inspectors reviewed revisions to the 10 CFR 72.212 report. The inspectors also reviewed CAP condition reports, audit reports, and self-assessments that were generated since Entergy's last loading campaign to ensure that issues were being properly identified, prioritized, and evaluated commensurate with their safety significance.

b. Findings

No findings were identified.

.2 Temporary Instruction 2515-190: Inspection of Licensee's Proposed Interim Actions as a Result of the Near-Term Task Force Recommendation 2.1 Flooding Evaluation

a. Inspection Scope

On September 27, 2013, the inspectors completed review of proposed interim actions taken by Entergy for flood protection and mitigation. These interim actions were in response to a letter from the NRC to licensee's requesting reevaluation of flood hazards using present day guidance and methodologies consistent with those used for licensing of new reactors. Additionally, licensees were requested to document interim actions planned or taken to address the reevaluated hazard where the reevaluated hazard exceeds the current design basis. Entergy is currently reevaluating the flooding hazard for Indian Point Units 2 and 3, however until the reanalysis is completed there are number of interim measures in place. The inspectors reviewed these interim measures and walked down all the currently identified flooding areas. Entergy has staged filled sandbags, tiger dams, sump pumps, and inflatable drain plugs in the identified flooding areas. The inspectors also reviewed the Entergy procedures 2-AOP-Flood-1 (Flooding), 3-AOP-Flood-1 (Flooding), and 0-MET-402-GEN (Locations of Sandbags in Flood Warning Conditions) to verify adequate guidance on trigger points and ability to deploy the flood barriers.

b. Findings

No findings were identified.

The inspectors concluded that the interim measures in place are adequate for flood protection and mitigation until the flooding reanalysis is complete. The TI is closed.

4OA6 Meetings, Including Exit

On October 10, 2013, the inspectors presented the inspection results to Mr. John Ventosa, Site Vice President, and other members of the Entergy staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by Entergy and are violations of NRC requirements. They meet the criteria of the NRC Enforcement Policy for being dispositioned as NCVs.

- On May 9, 2013, two workers in the Unit 3 Operations Storage Cell located on the 73 foot elevation of the Primary Auxiliary Building received higher than expected accumulated dose during their work evolution. Subsequent follow-up by the radiation protection staff identified that a drain line in the cell had radiation levels exceeding 100 millirem per hour at 30 centimeters in two locations, but the room was not posted and controlled as a high radiation area, contrary to plant Technical Specification 5.7.1. This issue was documented in their CAP as condition report IP3-2013-02699.

- On March 4, 2013, a group of workers entered the Unit 3 Containment without being escorted by a radiation protection technician contrary to the requirements of plant Technical Specification 5.7.2.b for entry to a locked HRA. The containment was a posted locked HRA with at least two locations that had radiation levels greater than 1R/hr at 30 centimeters from the source of radiation. Entry was made under radiation work permit 20133028, Revision 3, Task 1. The radiation work permit required that the workers be accompanied at all times within the posted locked high radiation area by a radiation protection technician. This issue was documented in their CAP as condition report IP3-2013-00997.

**ATTACHMENT: SUPPLEMENTARY INFORMATION**



**SUPPLEMENTARY INFORMATION****KEY POINTS OF CONTACT**Entergy Personnel

J. Ventosa, Site Vice President  
 N. Azevedo, Code Programs Supervisor  
 J. Bazdaric, Interim Materials Supervisor, Materials, Purchasing and Contracts  
 S. Bianco, Fire Protection Instructor  
 T. Chan, Mechanical Systems Supervisor  
 T. Cole, NUC Project Manager  
 P. Conroy, Nuclear Safety Assurance Director  
 D. Dewey, Assistant Operations Manager  
 J. Dinelli, General Manager Plant Operations  
 R. Dolanksy, ISI Program Manager  
 R. Drake, Civil Design Engineering Supervisor  
 D. Gagnon, Security Manager  
 D. King, NDE Project Manager URS  
 J. Kirkpatrick, Assistant General Manager Plant Operations  
 S. Manzione, Components Engineering Supervisor  
 D. Mayer, Unit 1 Director  
 T. McCaffrey, Design Engineering Manager  
 B. McCarthy, Operations Manager  
 T. Salentino, Dry Cask Superintendent  
 J. Schaefer, Materials, Purchasing and Contracts Manager  
 R. Tagliamonte, Radiation Protection Manager  
 M. Tesoriero, System Engineering Manager  
 M. Troy, Nuclear Oversight Manager  
 R. Walpole, Licensing Manager  
 W. Wittich, Configuration Management Supervisor  
 M. Woodby, Engineering Director  
 M. Kempiski, Engineering Supervisor  
 J. Raffaele, Engineering Supervisor

**LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED**ClosedUnit 2

05000247/2012-008-00	LER	Technical Specification (TS) Prohibited Condition Due to an Inoperable 22 Static Inverter for Greater Than the TS Allowed Outage Time Caused by a Failed Frequency Meter (Section 4OA3)
05000247/2012-009-00	LER	Unanalyzed Condition and Safety System Functional Failure Due to Use of Rad Bypass Switch for Steam Generator Blowdown Isolation

Valves Which Defeats Their Automatic Isolation for Analyzed Events (Section 4OA3)

05000247/2012-009-01 LER Unanalyzed Condition and Safety System Functional Failure Due to Use of Rad Bypass Switch for Steam Generator Blowdown Isolation Valves Which Defeats Their Automatic Isolation for Analyzed Events (Section 4OA3)

Unit 3

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EN-DC-215, Fuel Selection for HOLTEC Dry Cask Storage for Casks 20 and 21, Revision 3

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Ederer, and Nuclear Field Services Crane Basics Training  
Vendor Welding Program Review and Approval Form, Contract No. 10324243  
NDE Vendor Documentation Review and Approval Form

Work Orders

Operations Manual, Spent Fuel Machine Upgrade, Project No. 50788

**LIST OF ACRONYMS**

ACE	apparent cause evaluation
ADAMS	Agencywide Document Access and Management System
ALARA	as low as is reasonably achievable
ATWS	anticipated transient without scram
CAP	corrective action program
CFR	<i>Code of Federal Regulations</i>
CoC	certificate of compliance
Entergy	Entergy Nuclear Northeast
EPRI	Electric Power Research Institute
HRA	high radiation area
IMC	Inspection Manual Chapter
IPEC	Indian Point Energy Center
ISFSI	independent spent fuel storage installation
ISM	in-storage maintenance
IST	inservice test
LER	licensee event report
MBFP	main boiler feedwater pump
MFRV	main feedwater regulating valve
MPC	multi-purpose canister
MP&C	materials, purchasing, and contracts
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
PI	performance indicator
QA	quality assurance
RCA	radiologically controlled area
SSC	structure, system, and component
TI	Temporary Instruction
TS	technical specification
UFSAR	Updated Final Safety Evaluation Report
VHRA	very high radiation area