



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

February 8, 2012

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 – NRC INTEGRATED  
INSPECTION REPORT 05000247/2011005

Dear Mr. Ventosa:

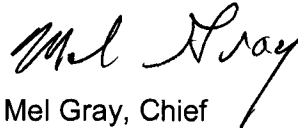
On December 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 2. The enclosed integrated inspection report documents the inspection results, which were discussed on January 19, 2012, with you and other members of your staff.

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

This report documents one self-revealing finding of very low safety significance (Green) and two NRC-identified findings of very low safety significance (Green). Two of these findings were determined to involve violations of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance, and because they are entered into your corrective action program (CAP), the NRC is treating these findings as non-cited violations (NCVs), consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCVs in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region 1; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at Indian Point Nuclear Generating Unit 2. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at Indian Point Nuclear Generating Unit 2.

In accordance with 10 Code of Federal Regulations (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 the NRC's document system (ADAMS). ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, appearing to read "Mel Gray". The signature is fluid and cursive, with the first name "Mel" and last name "Gray" clearly distinguishable.

Mel Gray, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000247/2011005  
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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/RA/

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February 8, 2012

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

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**/RA/**

Mel Gray, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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**U.S. NUCLEAR REGULATORY COMMISSION****REGION I**

Docket No.: 50-247

License No.: DPR-26

Report No.: 05000247/2011005

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 2

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

Dates: October 1, 2011 through December 31, 2011

Inspectors: M. Catts, Senior Resident Inspector – Indian Point 2  
O. Ayegbusi, Resident Inspector – Indian Point 2  
B. Bickett, Senior Project Engineer – Region I  
T. Fish, Senior Operations Engineer – Region I  
J. Furia, Senior Health Physicist – Region I  
S. McCarver, Project Engineer – Region I  
J. Noggle, Senior Health Physicist – Region I

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

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS.....	3
REPORT DETAILS .....	6
1. REACTOR SAFETY .....	6
1R04 Equipment Alignment .....	6
1R05 Fire Protection .....	8
1R06 Flood Protection Measures .....	9
1R11 Licensed Operator Requalification Program .....	9
1R12 Maintenance Effectiveness .....	10
1R13 Maintenance Risk Assessments and Emergent Work Control .....	15
1R15 Operability Determinations and Functionality Assessments .....	15
1R18 Plant Modifications .....	16
1R19 Post-Maintenance Testing .....	16
1R22 Surveillance Testing .....	17
1EP6 Drill Evaluation .....	17
2. RADIATION SAFETY .....	18
2RS2 Occupational As Low As is Reasonably Achievable Planning and Controls.....	18
2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation .....	19
4. OTHER ACTIVITIES.....	21
4OA1 Performance Indicator Verification .....	21
4OA2 Problem Identification and Resolution .....	23
4OA3 Follow-Up of Events and Notices of Enforcement Discretion .....	24
4OA5 Other Activities .....	26
4OA6 Meetings, Including Exit.....	26
4OA7 Licensee-Identified Violations .....	26
ATTACHMENT: SUPPLEMENTARY INFORMATION .....	26
SUPPLEMENTARY INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED .....	A-2
LIST OF DOCUMENTS REVIEWED .....	A-2
LIST OF ACRONYMS.....	A-11

## SUMMARY OF FINDINGS

IR 05000247/2011005; 10/1/11 – 12/31/11; Indian Point Nuclear Generating (Indian Point) Unit 2; Equipment Alignment and Maintenance Effectiveness.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified three findings of very low safety significance (Green), two of which were NCVs. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects for the findings were determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding because Entergy procedure ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, did not have appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, since September 6, 2007, Entergy personnel did not have an adequate procedure with acceptance criteria to determine if wall penetrations were properly sealed, which resulted in water intrusion into the 480 volt room during Hurricane Irene due to degradation of two service water (SW) pipe penetrations. Entergy personnel immediately directed water to a floor drain, placed sandbags around the 480 volt switchgear, and initiated actions to develop a permanent repair to the penetration seals. Entergy personnel entered this issue into the CAP as CR-IP2-2011-4324.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Also, in accordance with Inspection Manual Chapter (IMC) 0612, Power Reactor Inspection Reports, Appendix E, Minor Examples, this finding is similar to examples 3.i and 3.j. Specifically, water intrusion in the 480 volt room could impact all four trains of 480 volt switchgear. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function, was not a loss of barrier function, and was not potentially risk significant for external events. The finding has a cross-cutting aspect in the area of human performance associated with the resources attribute because Entergy personnel did not have complete, accurate and up-to-date procedures and work packages, to ensure adequate inspection of flood penetration seals. [H.2(c) per IMC 0310] (Section 1R12)

- Green. The inspectors documented a self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Entergy personnel did not follow Entergy procedure 2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, to remove and clean the zinc dichromate plating on 480 volt DB-50 breaker inertia latches. Specifically, between July 24, 2008 and October 3, 2011, Entergy personnel did not follow procedure 2-BRK-022-ELC, steps 4.6.16.11 – 4.6.16.15 to remove zinc dichromate plating on the 21 service water pump (SWP) breaker inertia latch,

Enclosure



resulting in the inoperability of the 21 SWP. Additionally, Technical Specification (TS) 3.7.8.A, Service Water System, which requires that a SWP on the essential header be restored to operable within 72 hours, was not met. Specifically, between September 30, 2011 and October 3, 2011, 21 SWP was inoperable for 76.2 hours without the pump being returned to operable status. Entergy's corrective actions included replacing the 21 SWP breaker, performing an extent of condition inspection of the other safety-related 480 volt DB-50 breakers, human performance error reviews and re-enforcing expectations, and enhancing the procedure to provide additional guidance for breaker cleaning. Entergy personnel entered these issues into the CAP as CR-IP2-2011-4893.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 21 SWP was inoperable and accrued unavailability for a period of time which could impact the service water system function to provide a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident or transient. Using IMC 0609 Attachment 4 "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined that a Phase 2 evaluation was required because the finding screened as potentially risk significant since the 21 SWP inoperability was an actual loss of safety function of a single train for greater than the allowed outage time. A Region I Senior Risk Analyst (SRA) conducted a Phase 3 analysis because the complexities with the service water line-up during the performance deficiency exposure period are not well represented in the NRC Phase 2 notebook. Based upon the conclusions of the Phase 3 analysis, the Region I SRA determined this finding was of very low safety significance (Green). The finding has a cross-cutting aspect in the area of human performance associated with the work practices attribute because Entergy personnel did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures. [H.4(b) per IMC 0310] (Section 1R12)

### **Cornerstone: Barrier Integrity**

- Green. The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Entergy personnel did not promptly correct an adverse condition related to the safety-related control room ventilation fan. Specifically, between September 1, 2010 and September 27, 2011, inspectors identified that Entergy personnel did not promptly implement corrective actions to revise maintenance procedures to include post maintenance belt tensioning after a break-in period which resulted in additional failures of the 21 central control room fan (CCRF) while in service. Entergy staff revised scheduled work orders to perform post-maintenance break-in checks. Entergy personnel entered this issue into the CAP as CR-IP2-2012-0625.

This finding is more than minor because it is associated with the structure, system, and component (SSC) and barrier performance attribute of the Barrier Integrity cornerstone and affects the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the untimely corrective actions resulted in additional failures and subsequent inoperability of the 21 CCRF. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because the finding did not represent a degradation of the radiological barrier function of the control room, a degradation of the barrier function of the control room against smoke or a toxic atmosphere, an actual open pathway in the physical integrity of reactor containment and heat removal components, and the finding did not involve an actual reduction in function of hydrogen

Enclosure

igniters in the reactor containment. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the CAP attribute because Entergy personnel did not take appropriate corrective actions to address safety issues and adverse trends specific to the 21 CCRF in a timely manner, commensurate with its safety significance and complexity. [P.1(d) per IMC 0310] (Section 1R04)

**Other Findings**

A violation of very low safety significance that was identified by Entergy staff was reviewed by the inspectors. Corrective actions taken or planned by Entergy staff have been entered into Entergy's CAP. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Indian Point Unit 2 began the inspection period at 100 percent power. The unit remained at or near 100 percent power for the remainder of the inspection period.

### 1. REACTOR SAFETY

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

#### 1R04 Equipment Alignment

##### Partial System Walkdowns (71111.04Q – 2 samples)

##### a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 21 SWP following breaker maintenance on November 16, 2011
- Control room ventilation system (CRVS) after maintenance on the 21 CCRF on December 19, 2011

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 (TSs), 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 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

Introduction: The inspectors identified an NCV of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Entergy personnel did not promptly correct a condition adverse to quality associated with the safety-related CCRF. Specifically, subsequent to a September 1, 2010 21 CCRF failure, inspectors identified that Entergy personnel did not promptly implement corrective actions to revise maintenance procedures to include post maintenance belt tensioning after a break-in period which resulted in additional failures of the 21 CCRF while in service.

Description: On June 25, 2010, Entergy personnel initiated CR-IP2-2010-04290 documenting an adverse trend of fan issues including two failures of the 21 CCRF on June 13 and 14, 2010, while in service. The 21 CCRF again tripped on August 14, 2010 and was documented to have loose belts and slow fan speed. Each failure required entry by operators into TS 3.7.10, "Control Room Ventilation System," which requires that two CRVS trains shall be operable. With one fan out of service, TS 3.7.10, requires

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that the fan be restored to operable status within seven days. In September 2010, Entergy personnel completed an apparent cause evaluation (ACE) of fan failures in CR-IP2-2010-4290 and determined the cause to be a result of inadequate belt tensioning and alignment. As a result, Entergy personnel initiated corrective actions to revise fan maintenance procedure 0-FAN-401-HVA, Inspection and Repair of Heating, Ventilation, and Air Conditioning (HVAC) /Plant Ventilation Fans, and work orders to include vendor recommendations to perform belt tensioning and alignment checks after a short break-in period.

On March 1, 2011, 21 CCRF was declared inoperable after operations personnel identified it tripped due to a broken belt. Work order 268052 was initiated and completed to replace the belts and return the fan to service. On June 10, 2011, during a quarterly vibrations check on the 21 CCRF, fan vibrations were determined to be above the high limit value. In addition, the fan belt was identified as making noise attributable to a possible belt alignment issue. Entergy personnel corrected the condition by replacing the belts using a two-year preventive maintenance activity originally scheduled for 2012. The maintenance activities for the belt replacements for the March 1, 2011 and June 10, 2011 issues did not include the corrective actions from the ACE to re-tension the belts. On September 1, 2011, the fan was documented as making noise due to loose belts. Entergy personnel replaced the belts and, after inspector questions regarding the increased fan failures, implemented previously identified corrective actions to re-tension the belts after a short break-in period.

The inspectors reviewed the ACE and related work orders to determine if the corrective actions taken were adequate. The inspectors determined that corrective actions initiated to revise procedures and work orders had been extended on two occasions without providing interim guidance to operations and maintenance departments for re-tensioning the belts after a break-in period. The inspectors determined this was not consistent with procedure expectations outlined in Entergy procedure EN-LI-102, Corrective Action Process, in that actions and due dates should have been selected to minimize the next potential occurrence of the problem. The inspectors determined that Entergy staff did not promptly implement corrective actions, previously identified as a result of the September 2010 CCRF failure, to correct belt issues which subsequently contributed to the increase in short-term unavailability of the 21 CCRF in March, June, and September 2011.

Analysis: The performance deficiency associated with this finding was that Entergy personnel did not promptly correct a condition adverse to quality associated with the safety related 21 CCRF. This finding is more than minor because it is associated with the SSC and barrier performance attribute of the Barrier Integrity cornerstone and affects the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the untimely corrective actions resulted in subsequent fan failures and unavailability of the 21 CCRF. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because the finding did not represent a degradation of the radiological barrier function of the control room, a degradation of the barrier function of the control room against smoke or a toxic atmosphere, an actual open pathway in the physical integrity of reactor containment and heat removal components, and the finding did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the CAP attribute

because Entergy personnel did not take appropriate corrective actions to address safety issues and adverse trends specific to the 21 CCRF in a timely manner, commensurate with its safety significance and complexity. [P.1(d) per IMC 0310]

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action Program," requires, in part, that the licensee assure that conditions adverse to quality, such as deficiencies, deviations, defective material and equipment, and nonconformance's are promptly identified and corrected. Entergy procedure EN-LI-102, Corrective Action Process, step 5.9[2].b states in part that "corrective action due dates should be selected with consideration given toward: the next potential occurrence of the problem and should ensure the action is complete prior to the next potential occurrence of the problem, if possible; and the potential impact to plant operations while the action completion is pending." Contrary to the above, between September 1, 2010 and September 27, 2011, Entergy staff did not implement prompt corrective actions to address an adverse condition with the 21 CCRF, which resulted in subsequent fan failures and short-term unavailability in March 1, June 10 and September 1, 2011. Entergy staff revised scheduled work orders to perform post-maintenance break-in checks. Because this finding was of very low safety significance and was entered into Entergy's CAP as CR-IP2-2012-0625, consistent with Section 2.3.2 of the Enforcement Policy, this violation is being treated as **NCV 05000247/2011005-01, Untimely Corrective Actions for Repeated Control Room Fan Failures.**

#### 1R05 Fire Protection

##### Resident Inspector Quarterly Walkdowns (71111.05Q – 4 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 area pre-fire plan (PFP), and passive 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.

- PFP-214 (fire zone (FZ) 74A, 74B): Electrical Penetration Area – Fan House on November 6, 2011
- PFP-215 (FZ 1A): General Floor Plan – Fan House on November 6, 2011
- PFP-218 (FZ 99A, 100A, 101A): General Floor Plan – Boric Acid Evaporator Building on November 6, 2011
- PFP-156 (FZ 140, 240, 241): General Floor Plan – Superheater Building on December 19, 2011

#### b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)Annual Review of Cables Located in Underground Bunkers/ManholesInspection Scope

The inspectors conducted an inspection of underground bunkers/manholes subject to flooding that contain cables whose failure could disable risk-significant equipment. The inspectors performed walkdowns of risk-significant areas, including manhole 24 containing safety related electrical cabling to the SWPs, to verify that the cables were not submerged in water, that cables and/or splices appeared intact, and to observe the condition of cable support structures. When applicable, the inspectors verified proper sump pump operation and verified level alarm circuits were set in accordance with station procedures and calculations to ensure that the cables will not be submerged. The inspectors also ensured that drainage was provided and functioning properly in areas where dewatering devices were not installed. Previously, manhole 21 was inspected and documented in Inspection Report 05000247/2011002.

a. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program.1 Quarterly Review (71111.11Q – 1 sample)a. Inspection Scope

The inspectors observed licensed operator simulator training on October 20, 2011, which included a simulated steam generator tube leak, a loss of offsite power leading to a station blackout, an offsite release, and the failure of select components to automatically start as required. 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. 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 supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Licensed Operator Requalification (71111.11B – 1 sample)a. Inspection Scope

On December 13, 2011, a region-based inspector conducted an in-office review of results of licensee-administered annual operating tests and comprehensive written

exams for 2011. The inspection assessed whether pass rates were consistent with the guidance of IMC 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." The inspector verified that:

- Crew pass rate was greater than 80 percent. (Pass rate was 100 percent.)
- Individual pass rate on the dynamic simulator test was greater than 80 percent. (Pass rate was 100 percent.)

Individual pass rate on the written exam was greater than 80 percent. (Pass rate was 98 percent.)

- Individual pass rate on the job performance measures of the operating exam was greater than 80 percent. (Pass rate was 100 percent.)
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75 percent. (Overall pass rate was 98 percent.)

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 SSC performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance work orders, and maintenance rule basis documents to ensure that Entergy staff were 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.

- Flood penetration seal degradation in the 480 volt switchgear room on August 28, 2011
- Low service water header pressure to all five fan cooler units (FCUs) during testing on October 3, 2011
- DB-50 breakers inertial latch degradation and extent of condition on October 3, 2011

b. Findings

.1 Water Intrusion Due to Leaking Flood Penetration Seals in the 480 Volt Room During Hurricane Irene

Introduction: The inspectors identified a finding of very low safety significance (Green) because Entergy procedure ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, did not have appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically,

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since September 6, 2007, Entergy personnel did not have an adequate procedure with acceptance criteria to determine if wall penetrations were properly sealed, which resulted in water intrusion into the 480 volt room during Hurricane Irene due to degradation of two SW pipe penetrations.

Description: On August 28, 2011, when Hurricane Irene was impacting the area around Indian Point, water intrusion was identified by Entergy staff in the 480 volt room. Water was identified coming in around two SW pipes that enter the wall of the 480 volt room from under the transformer yard. Operations personnel discovered the water intrusion and also identified that the drain nearest to the water intrusion was plugged. Operations personnel used a catch basin to direct the water to another drain and placed sandbags around the 480 volt switchgear. The inspectors walked down the area during the hurricane and determined no water impacted the operation of the 480 volt switchgear. As a result of the event, the NRC opened an unresolved item (URI) in IR 05000247/2011004 requiring further information from Entergy staff regarding the causes of the water intrusion.

The inspectors reviewed the condition report (CR) written by Entergy staff to address the water intrusion and determined the CR was classified as a Category D, where no cause determination or tracking of corrective actions is required by Entergy staff, and the CR can be closed to the work management system. The inspectors questioned this level of classification because Entergy procedure EN-LI-102, Corrective Action Process, provides classification guidance that indicates a Category B designation when it is prudent to not only fix the identified problem, but also to determine/document cause(s) of the problem and determine/document an action plan to fix cause(s) for an adverse condition classified as non-significant. After the inspectors questioned the classification, Entergy staff initiated a Category B CR to determine the cause of the water intrusion into the 480 volt room since water intrusion in this room has the potential to impact all four trains of 480 volt switchgear.

In accordance with the requirements for a Category B CR, Entergy staff performed an ACE and determined that the apparent cause was the lack of sensitivity of risk for water intrusion vulnerabilities for plant components, and that Entergy staff had not developed and implemented a proactive identification and resolution strategy to preclude or mitigate water intrusion. Entergy procedure ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, Attachment 9.5, Masonry Wall Inspection Checklist, indicates an action to determine if all penetrations (within the scope of the procedure) are properly sealed. The inspectors determined that this procedure does not provide acceptance criteria to determine when a penetration is properly sealed. These seals were last inspected by Entergy personnel on September 6, 2007. Entergy staff, at that time, concluded the penetrations were properly sealed although there was documented efflorescence (indication of concrete/water interaction) on the wall near the seals. The inspectors noted that no CR was written and no evaluation was performed on the efflorescence to determine the source of water through the concrete.

The inspectors reviewed Entergy staff's response to operating experience associated with water intrusion into safety-related rooms, including Information Notice (IN) 92-69, Water Leakage From Yard Area Through Conduits Into Buildings; IN 2005-11, Internal Flooding/Spray-Down of Safety-Related Equipment Due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains; and IN 2011-12, Reactor Trips Resulting From Water Intrusion Into Electrical Equipment. The inspectors determined that Entergy staff did not perform thorough reviews of the operating experience, and did not institute

Enclosure



corrective actions to address potential water intrusion issues into safety-related equipment rooms.

Entergy staff revised procedure ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, for inspections of structural elastomers, including seals and gaskets, to inspect for signs of cracks, separation, deterioration, foreign material, air leakage, and missing penetration sealant. Entergy personnel also implemented a permanent repair for the penetration seals and entered this issue into the CAP as CR-IP2-2011-4324.

Analysis: The performance deficiency associated with this finding was that Entergy procedure ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, did not have appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Also, in accordance with IMC 0612, Power Reactor Inspection Reports, Appendix E, Minor Examples, this finding is similar to examples 3.i and 3.j. Specifically, water intrusion in the 480 volt room could lead to the inoperability of 480 volt switchgear. However, the inspectors noted that operators were able to direct the water away from switchgear using an existing floor drain. Using IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined this finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function, was not a loss of barrier function, and was not potentially risk significant for external events.

The finding has a cross-cutting aspect in the area of human performance associated with the resources attribute because Entergy personnel did not have complete, accurate and up-to-date procedures and work packages, to ensure adequate inspection of flood penetration seals. [H.2(c) per IMC 0310]

Enforcement: The inspectors identified a Green finding because Entergy personnel did not ensure that activities affecting quality were prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and that the activities were accomplished in accordance with these instructions, procedures, or drawings. No violation of regulatory requirements occurred because procedure ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, is not subject to the quality assurance requirements as directed in the administrative section of TS 5.4, Procedures.

Because this issue does not involve a violation of regulatory requirements and has very low safety significance, it is identified as a finding. Entergy personnel took corrective actions and directed water to an unclogged floor drain, placed sandbags around the 480 volt switchgear, and initiated actions to develop a permanent repair to the penetration seals. The issue was entered into Entergy's CAP as CR-IP2-2011-4324. **FIN 05000247/2011005-02, Water Intrusion Due to Leaking Flood Penetration Seals in the 480 Volt Room During Hurricane Irene.**

.2 Maintenance Procedure not Followed for Inertia Latch Cleaning on 21 Service Water Pump

Introduction: The inspectors documented a self-revealing NCV of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures,

Enclosure

and Drawings," because Entergy personnel did not follow Entergy procedure 2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, to remove and clean the zinc dichromate plating on 480 volt DB-50 breaker inertia latches. Specifically, between July 24, 2008 and October 3, 2011, Entergy personnel did not follow procedure 2-BRK-022-ELC, steps 4.6.16.11 – 4.6.16.15 to remove zinc dichromate plating on the 21 SWP inertia latch, resulting in the inoperability of the 21 SWP.

Description: On October 3, 2011, the 21 SWP failed to start as required in response to low service water flow to the containment FCUs during testing. Operations personnel discovered the control power fuse had failed and the breaker inertia latch was stiff and binding throughout its movement. With the breaker inertia latch toggled and not reset, the breaker will be mechanically blocked from closing and will result in control fuse actuation.

Entergy personnel were in the process of conducting an ACE for 21 SWP, when on October 20, 2011, during a surveillance test of the 21 auxiliary boiler feed water pump (ABFP), the 21 ABFP breaker failed to operate as required after being secured from a pump run. After securing the pump, Entergy personnel identified the supply breaker's inertia latch bound and unable to be reset. After this failure, Entergy staff performed a root cause evaluation (RCE). Entergy staff determined the direct cause to be the breaker inertia latch was not reset and prevented the breaker from closing on demand. Entergy staff determined the root cause to be the failure of maintenance personnel to perform the required cleaning to remove the zinc dichromate plating as required by procedure 2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance.

After the failure of the 21 ABFP breaker, the inspectors questioned Entergy personnel on the potential for a trend associated with these 480 volt DB-50 breakers. The inspectors questioned the control room operators on the operability of other 480 volt breakers based on a loss of coolant accident (LOCA) scenario followed by a loss of offsite power (LOOP), and whether these 480 volt breakers would close and re-sequence on the EDGs as required. Entergy personnel initiated CR-IP2-2011-5277, performed an immediate operability determination, and inspected all other safety-related 480 volt DB-50 breakers. No other stuck inertia latches were identified by Entergy personnel.

Entergy's corrective actions included replacement of the breaker inertia latches on 21 SWP and 21 ABFP, extent of condition inspections of other similar breakers, human performance error reviews and re-enforcing expectations, and enhancing the procedure to provide additional guidance for breaker cleaning.

Entergy personnel reviewed the history of the 21 SWP breaker and determined the breaker was last operated satisfactorily on September 30, 2011. Technical Specification 3.7.8.A, Service Water System, requires that with one SW pump on the essential header inoperable, that the pump must be restored to operable within 72 hours. Entergy personnel determined 21 SWP was inoperable from September 30 to October 3, 2011, for 76.2 hours, greater than the TS 3.7.8 AOT of 72 hours. Therefore, Entergy submitted Licensee Event Report (LER) 05000247/2011-002-00, "Technical Specification (TS) Prohibited Condition Caused by an Inoperable 21 Service Water Pump for Greater than TS AOT Due to a Faulty Inertia Latch in the Supply Breaker." This LER is closed in Section 4OA3 of this report.

Analysis: The performance deficiency associated with this finding was that Entergy personnel did not follow Entergy procedure 2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, to remove and clean the zinc dichromate plating on 480 volt DB-50 breaker inertia latches. This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affects the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 21 SWP was inoperable and accrued unavailability for a period of time and could impact the service water system function to provide a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident or transient. Using IMC 0609 Attachment 4 "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined that a Phase 2 evaluation was required because the finding screened as potentially risk significant since the 21 SWP inoperability was an actual loss of safety function of a single train for greater than the allowed outage time.

A Region I SRA conducted a Phase 3 analysis because the complexities with the service water line-up during the performance deficiency exposure period are not well represented in the NRC Phase 2 notebook. The SRA used Indian Point's Standardized Plant Analysis Risk model, version 8.15, in conjunction with the System Analysis Programs for Hands-On Integrated Reliability Evaluations, version 8.0.7.17, dated May 18, 2011, to estimate the internal risk contribution of the Phase 3 risk assessment. To closely approximate the type of failure exhibited by the 21 SWP, the SRA used the failure-to-start event and changed its failure probability to True, representing a 100 percent failure-to-run condition. The exposure time for this condition was 76 hours. Based upon the nature of the failure, no adjustments were made to the nominal operator recovery credit. The dominant core damage sequence was a LOOP, with a failure of EDGs and a failure to recover either off-site power or the EDGs. Additionally, the sequence also includes a failure to manually control the turbine driven ABFP and depressurize the steam generators. Given the delta CDF, in the low E-7 range, the SRA determined that the increase in large early release frequency would be negligible, in accordance with IMC 0609 Appendix H, since the containment type is large dry. Further the SRA determined that external events were not of concern given the very short, 76 hour exposure period. Based upon the conclusions of the Phase 3 analysis, the Region I SRA determined this finding was of very low safety significance (Green).

The finding has a cross-cutting aspect in the area of human performance associated with the work practices attribute because Entergy personnel did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures. [H.4(b) per IMC 0310]

Enforcement: 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Entergy procedure 2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, steps 4.6.16.11 – 4.6.16.15 direct Entergy personnel to remove zinc dichromate plating on the 480 volt DB-50 breaker inertia latches. Contrary to the above, between July 24, 2008 and October 3, 2011, Entergy personnel did not follow procedure 2-BRK-022-ELC, steps 4.6.16.11 – 4.6.16.15 to remove zinc

dichromate plating on the 21 SWP inertia latch, resulting in the inoperability of the 21 SWP. Additionally, TS 3.7.8.A, Service Water System, requires that with one SW pump on the essential header inoperable, the pump must be restored to operable within 72 hours. Contrary to the above, between September 30, 2011 and October 3, 2011, 21 SWP was inoperable for 76.2 hours without the pump being returned to operable status. Entergy's corrective actions included replacing the 21 SWP and 21 ABFP breakers, performing an extent of condition inspection of the other safety related 480 volt DB-50 breakers, human performance error reviews and re-enforcing expectations, and enhancing the procedure to provide additional guidance for breaker cleaning. Because this finding is of very low safety significance and was entered into Entergy's CAP as CR-IP2-2011-4893, consistent with Section 2.3.2 of the NRC Enforcement Policy, this violation is being treated as a NCV. **NCV 05000247/2011005-03, Maintenance Procedure not Followed for Inertia Latch Cleaning on 21 Service Water Pump.**

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 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 personnel performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. 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.

- With 23 charging pump planned maintenance and PT-Q55 pressurizer pressure bistable test on October 5, 2011
- With PT-M48 480V undervoltage test, 21 component cooling water pump out of service (OOS) and 21, 25, and 26 SWP OOS for planned maintenance on October 31, 2011
- With PT-2M4 safety injection logic testing and 138 kV feeder 95891 OOS for maintenance on November 2, 2011
- With 22 SWP breaker, refueling water storage tank level instrument 5751, and 138 kV feeders 95891, 95331, and 96951 OOS for planned maintenance; and 21 fan cooler unit out of service for emergent maintenance on November 10, 2011

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)

a. Inspection Scope

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

- 22 EDG fuel linkage mis-position during planned maintenance on September 12, 2011
- 21 reactor coolant pump elevated seal return flow on October 12, 2011
- 22 ABFP steam admission valve PCV-1139 increased leak-by on October 14, 2011
- 21 EDG jacket water leak on December 8, 2011

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 TS 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 TSs 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, where 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 modifications 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.

- Installation of a temporary screen on 27 and 28 service water inlet bays while de-silting and while the associated traveling wash screen was non-operational on October 24, 2011

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 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

Enclosure

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.

- 21 SWP after breaker replacement on October 3, 2011
- 22 safety injection pump after breaker replacement on October 22, 2011
- 23 EDG after air start motor replacements on October 13, 2011
- 138 kV bus tie circuit breaker BT4-5 after repairs on November 13, 2011
- 22 component cooling water heat exchanger after cleaning and eddy current inspection on November 14, 2011
- 6.9 kV breaker 52GT26 after cubicle inspection and installation of new breaker on December 13, 2011

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 4 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 TSs, 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:

- 2-PT-Q026C, 23 SWP test on October 3, 2011
- 2-PT-Q027A, 21 ABFP test on October 20, 2011
- 2-PT-W020, Electrical Verification – Inverters and DC Distribution in Modes 1 to 4 test on November 1, 2011
- 0-SOP-LEAKRATE-001, Reactor Coolant System leakrate surveillance, evaluation and leak identification on November 12, 2011

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine Entergy emergency drill on October 20, 2011, to identify weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The

Enclosure

inspectors observed emergency response operations in the simulator, technical support center, and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by Entergy staff in order to evaluate Entergy's critique and to verify whether the Entergy staff was properly identifying weaknesses and entering them into the CAP.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational/Public Radiation Safety**

2RS2 Occupational As Low As is Reasonably Achievable Planning and Controls (71124.02 – 1 sample)

a. Inspection Scope

Radiological Work Planning

Based on radiation work permit outage work activity collective exposure results from the Unit 3 Spring 2011 refueling outage, the inspectors selected for review those work activities that resulted in a dose of five person-rem or greater. This review included the basis of the exposure estimates with reference to historical performance metrics, and exposure mitigation requirements planned for these outage tasks.

With respect to the outage work activity samples, the inspectors compared the actual exposure results with the estimated exposure established in Entergy's As Low As is Reasonably Achievable (ALARA) plans for these work activities. The inspectors also compared the person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the work activity person-hour actual results, to evaluate the performance results. The inspectors determined the reasons (e.g., failure to adequately plan the activity, failure to provide sufficient work controls) for any inconsistencies between intended and actual work activity doses. The inspectors also determined if any identified exposure overrun causes were identified and entered into Entergy's corrective action program.

Verification of Dose Estimates and Exposure Tracking Systems

The Unit 3 Spring refueling outage ALARA work packages that resulted in greater than five person-rem were reviewed to include the assumptions and basis (including dose rate and man-hour estimates) for their collective exposure estimates. Applicable procedures were reviewed to determine the methodology for estimating exposures for specific work activities and determining the intended dose outcome.

The inspectors verified for the selected work activities that Entergy personnel established measures to track, trend, and if necessary reduce, occupational doses for ongoing work activities and that criteria were established to prompt additional reviews and/or additional ALARA planning and controls.

The inspectors evaluated Entergy's method of adjusting exposure estimates when unexpected changes in scope or emergent work were encountered. The inspectors determined if adjustments to exposure estimates (intended dose) were based on sound radiation protection and ALARA principles or if they were only adjusted to account for inadequate work control.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08 – 1 sample)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the updated final safety analysis report (UFSAR), the Process Control Program (PCP), and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance (QA) audits in this area since the last inspection to gain insights into Entergy's performance and inform the "smart sampling" inspection planning.

The inspectors selected areas where containers of radioactive waste were stored, and verified that the containers were labeled in accordance with Title 10 of the Code of Federal Regulations (10 CFR) 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors verified that radioactive materials storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors verified that they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material not in Storage," as appropriate.

The inspectors verified that Entergy staff established a process for monitoring the impact of long-term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements. The inspectors selected containers of stored radioactive materials, and verified that there were no signs of swelling, leakage, and deformation.

The inspectors selected liquid and solid radioactive waste processing systems, and walked down accessible portions of systems to verify and assess that the current system configuration and operation agreed with the descriptions in the UFSAR, offsite dose calculation manual and PCP.

The inspectors selected radioactive waste processing equipment that was not operational and/or was abandoned in place, and verified that Entergy staff had established administrative and/or physical controls to ensure that the equipment would



not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors verified that Entergy staff reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of any changes made to the radioactive waste processing systems since the last inspection. The inspectors verified that changes from what is described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59, as appropriate.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers. The inspectors verified that the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the PCP, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors verified that the tank recirculation procedure provided for sufficient mixing.

The inspectors verified that Entergy's PCP correctly described the current methods and procedures for dewatering and waste.

The inspectors selected radioactive waste streams, and verified that Entergy's radiochemical sample analysis results were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors verified that Entergy's use of scaling factors and calculations, to account for difficult-to-measure radionuclides, was technically sound and based on current 10 CFR Part 61 analysis.

For the waste streams selected above, the inspectors verified that changes to plant operational parameters were taken into account to (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update, and (2) verify that waste shipments continued to meet the requirements of 10 CFR Part 61.

The inspectors verified that Entergy personnel established and maintained an adequate QA program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities. The inspectors determined that the shippers were knowledgeable of the shipping regulations and that shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to Entergy's response to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979, and 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training." The inspectors verified that Entergy's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

The inspectors selected non-excepted package shipment records and verified that the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number. The inspectors verified that the shipment placarding was consistent with the information in the shipping documentation.

The inspectors verified that problems associated with radioactive waste processing, handling, storage, and transportation were being identified by Entergy staff at an appropriate threshold, were properly characterized, and were properly addressed for resolution in the Entergy corrective action program. The inspectors verified the appropriateness of the corrective actions for a selected sample of problems documented by Entergy staff that involved radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed the results of selected audits performed since the last inspection of this program and evaluated the adequacy of Entergy's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index (2 samples)

a. Inspection Scope

The inspectors reviewed Entergy's submittal of the Mitigating Systems Performance Index for the following systems for the period of October 1, 2010, through September 30, 2011:

- Unit 2 Residual Heat Removal System
- Unit 2 Cooling Water System

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed Entergy's operator narrative logs, CRs, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

.2 Reactor Coolant System Specific Activity and RCS Leak Rate (1 sample)

a. Inspection Scope

The inspectors reviewed Entergy's submittal for the RCS specific activity and RCS leak rate performance indicators for both Unit 1 and Unit 2 for the period of October 1, 2010 through September 30, 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed RCS sample analysis and control room logs of daily measurements for RCS leakage, and compared that information to the data reported by the performance indicator. Additionally, the inspectors observed surveillance activities that determined the RCS identified leakage rate, and chemistry personnel taking and analyzing an RCS sample.

b. Inspection Findings

No findings were identified.

.3 Occupational Exposure Control Effectiveness (1 sample)

a. Inspection Scope

The inspectors reviewed implementation of the licensee's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspectors reviewed CRs, and radiological controlled area dosimeter exit logs for the past four calendar quarters (through 3rd quarter 2011). These records were reviewed for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures against the criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6, to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators.

b. Inspection Findings

No findings were identified.

.4 Radioactive Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (1 sample)

a. Inspection Scope

The inspectors reviewed a listing of relevant effluent release reports for the past four calendar quarters (through 3rd quarter 2011), for issues related to the public radiation safety PI, which measures radiological effluent release occurrences per site that exceed 1.5 mrem/quarter whole body or 5.0 mrem/quarter organ dose for liquid effluents; 5.0 mrad/quarter gamma air dose, 10 mrad/quarter beta air dose, and 7.5 mrad/quarter for organ dose for gaseous effluents. The review was against applicable criteria specified in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 6. The purpose of the review was to verify that occurrences that met the NEI criteria were recognized and identified as PI occurrences.

The inspectors reviewed the following documents to ensure the licensee met all requirements of the performance indicator:

Enclosure

- Monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases
- Quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases
- Dose assessment procedures

b. Inspection 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 personnel 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 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 71152, "Problem Identification and Resolution," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by personnel outside of the CAP, such as trend reports, performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed Entergy's CAP database for the first and second quarters of 2011 to assess condition reports written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily condition report review (Section 4OA2.1). The inspectors reviewed the Entergy quarterly trend report for the third quarter of 2011, conducted under LO-IP3LO-2011-0154 to verify that Entergy personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures

b. Findings and Observations

No findings were identified. The inspectors evaluated a sample of departments that are required to provide input into the quarterly trend reports, which included a focus on

Enclosure

maintenance and planning departments. This review included a sample of issues and events that occurred over the course of the past two quarters with a focus on level 'D' significance condition reports to objectively determine whether issues were appropriately considered or ruled as emerging or adverse trends, and in some cases, verified the appropriate disposition of resolved trends.

The inspectors observed an apparent increase in the number of condition reports associated with 21 EDG jacket water leakage. The inspectors noted that a potential trend associated with jacket water leakage had not been recognized by Entergy personnel as a specific emerging or adverse trend. Entergy personnel entered this issue into the CAP as a corrective action to CR-IP2-2011-6257 to evaluate the issue including whether a revision to the preventative maintenance procedure to physically verify that the hose clamps on the cylinder head jacket water are tight was warranted.

.3 Annual Sample: Review of the Operator Workaround Program

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 Entergy procedure OAP-45, "Operator Burden Program."

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 personnel entered operator workarounds and burdens into the CAP at an appropriate threshold and planned or implemented CAs commensurate with their safety significance.

40A3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 3 samples)

.1 (Closed) Licensee Event Report 05000247/2010-009-00: Automatic Reactor Trip Due to a Turbine Generator Trip Caused by a Fault of the 21 Main Transformer Phase B High Voltage Bushing

On November 7, 2010, an automatic reactor trip occurred at full power as a result of a turbine generator trip due to a fault from the failure of the 21 main transformer. The failure was as a result of a low impedance fault of the 345 kV phase B busing. The inspectors evaluated the response of control room personnel and plant equipment following the automatic reactor trip as described in NRC Inspection Report

Enclosure

05000247/2010005. Entergy personnel determined that the root cause of the event was inadequate vendor design and/or manufacturing deficiency of the trench electric type bushings. The immediate corrective actions included replacement of the 21 main transformer. Entergy personnel later replaced the 22 transformer bushings since the bushings were of a similar design as the 21 main transformer bushings. Entergy personnel documented the root cause evaluation in CR IP2-2010-06801. The inspectors reviewed the LER, CRs and corrective actions to determine whether the station adequately evaluated the condition. No findings were identified. This LER is closed.

.2 (Closed) Licensee Event Report 05000247/2011-001-00: Automatic Actuation of Emergency Diesel Generators Due to Undervoltage on 480 VAC Vital Buses 5A and 6A Caused by a Loss of Offsite Power During Switchyard Troubleshooting

On March 1, 2011, troubleshooting on a metering circuit in the Buchanan switchyard by Consolidated Edison resulted in a loss of 138 kV offsite power. The EDGs automatically actuated as a result of under-voltage on 480 volt buses 5A and 6A; buses 2A and 3A remained energized from the unit auxiliary transformer connected to the main generator. The inspectors evaluated the response of control room personnel and plant equipment following the loss of 138 kV offsite power as described in NRC Inspection Report 05000247/2011002. Entergy personnel determined the apparent cause to be a failure of Consolidated Edison's current transformer test switch associated with the metering circuit on the 138 kV offsite power line to make-before-break. The failed test switch was determined to have corrosion on the contact surfaces. Entergy staff's corrective actions included ensuring Consolidated Edison personnel replaced the test switch and improved its planned work notification procedure. The inspectors reviewed the LER, CRs and corrective actions to determine whether the station adequately evaluated the condition. Entergy staff entered this issue into the CAP as CR-IP2-2011-0108. No findings were identified. This LER is closed.

.3 (Closed) Licensee Event Report 05000247/2011-002-00: Technical Specification (TS) Prohibited Condition Caused by an Inoperable 21 Service Water Pump for Greater than TS Allowed Outage Time (AOT) Due to a Faulty Inertia Latch in the Supply Breaker

on October 3, 2011, 21 SWP did not start as required in response to low flow on the containment FCUs during testing. Operations personnel discovered the control power fuse had failed and the breaker inertia latch was stiff and binding throughout its movement. With the breaker inertia latch toggled and not reset, the breaker was mechanically blocked from closing and this resulted in control fuse actuation. The root cause was that Entergy personnel did not perform the required cleaning to remove the zinc dichromate plating as required by the preventative maintenance procedure. Entergy's corrective actions included replacement of the breaker inertia latch, extent of condition inspections of other similar breakers, human performance error reviews and re-enforcing expectations, and enhancing the procedure to provide additional guidance for breaker cleaning. Entergy staff entered this issue into the CAP as CR-IP2-2011-4893. The enforcement aspects of this issue are discussed and documented in Section 1R12. The inspectors did not identify any new findings during the review of the LER. This LER is closed.

#### 4OA5 Other Activities

##### Operation of an ISFSI at Operating Plants (60855)

##### a. Inspection Scope

The inspectors verified by direct observation and independent evaluation that Entergy personnel had performed loading activities at the Independent Spent Fuel Storage Installation (ISFSI) in a safe manner and in compliance with applicable procedures. The inspectors toured the ISFSI and reviewed radiological surveys performed during the past 12 months.

##### b. Findings

No findings were identified.

#### 4OA6 Meetings, Including Exit

On January 19, 2011, 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 violation of very low safety significance (Green) was identified by Entergy and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

- 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, on September 12, 2011, a non-intrusive inspection on the 22 EDG was not accomplished in accordance with the maintenance procedure. Specifically, maintenance personnel rotated the 22 EDG governor linkage to set the fuel racks to the zero position instead of inspecting the fuel racks individually. This resulted in the 22 EDG being declared inoperable for 18 hours and an unplanned yellow risk condition. Entergy personnel entered the issue in the CAP as CR-IP2-2011-04556 and 04579 and performed an ACE. The maintenance procedure was revised to include a caution note to prevent personnel from manipulating the governor during non-intrusive inspections. Using IMC 0609 Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined that this finding is of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in an actual loss of safety function, and was not potentially risk significant for external events.

ATTACHMENT: SUPPLEMENTARY INFORMATION

Enclosure

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

J. Ventosa, Site Vice President  
N. Azevedo, Manager, Engineering  
J. Baker, Shift Manager  
T. Beasely, Engineering  
M. Burney, Nuclear Safety/License IV Specialist  
R. Burroni, Manager, System Engineering  
T. Cole, Project Manager, NUC  
G. Dahl, Nuclear Safety/License IV Specialist  
R. Daley, Engineer III, Nuclear  
M. Dechristopher, Engineering  
G. Dean, Shift Manager  
D. Dewey, Shift Manager  
J. Dinelli, Manager, Operations  
R. Dolanksy, Manager, ISI Program  
R. Drake, Engineering  
T. Flynn, Maintenance Inspection Coordinator  
E. Goethicus, Operations Instructor  
D. Gagnon, Manager, Security  
F. Inzirillo, Manager, IPEC Quality Assurance  
R. Lee, Lead Engineer, Buried Pipe and Tank Program  
J. Lijoi, Superintendent, I&C  
L. Lubrano, Senior Lead Engineer  
R. Magee, Senior HP/Chemical Specialist  
D. Mayer, Director, Unit 1  
T. McCaffrey, Manager, Design Engineering  
B. McCarthy, Manager, Assistant Operations  
T. Motko, System Engineer  
T. Orlando, Director, Engineering  
E. Primrose, Shift Manager  
S. Prussman, Nuclear Safety/License IV Specialist  
J. Reynolds, Corrective Action Specialist  
R. Robenstein, Superintendent, Simulator  
T. Salentino, Superintendent, Dry Fuel Storage  
S. Sandike, Senior HP/Chemical Specialist  
P. Santini, Senior Reactor Operator  
A. Singer, Superintendent, Licensed Operator Requalification Training  
D. Smith, Technical Specialist IV  
B. Sullivan, Manager, Emergency Preparedness



R. Tagliamonte, Manager, Radiation Protection  
 M. Tesoriero, Manager, Programs and Components  
 J. Thaliath, Engineer II, Nuclear  
 M. Troy, Manager, Engineering  
 R. Walpole, Manager, Licensing  
 A. Williams, Assistant General Manager, Plant Operations

### LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

#### Opened/Closed

05000247/2011-005-01	NCV	Untimely Corrective Actions for Repeated Control Room Fan Failures (Section 1R04)
05000247/2011-005-02	FIN	Water Intrusion Due to Leaking Flood Penetration Seals in the 480 Volt Room During Hurricane Irene (Section 1R12)
05000247/2011-005-03	NCV	Maintenance Procedure Not Followed for Inertia Latch Cleaning on 21 Service Water Pump (Section 1R12)

#### Closed

05000247/2010-009-00	LER	Automatic Reactor Trip Due to a Turbine Generator Trip Caused by a Fault of the 21 Main Transformer Phase B High Voltage Bushing (Section 4OA3)
05000247/2011-001-00	LER	Automatic Actuation of Emergency Diesel Generators Due to Undervoltage on 480 VAC Vital Buses 5A and 6A Caused by a Loss of Offsite Power During Switchyard Troubleshooting (Section 4OA3)
05000247/2011-002-00	LER	Technical Specification Prohibited Condition Caused by an Inoperable 21 Service Water Pump for Greater than TS AOT Due to a Faulty Inertia Latch in the Supply Breaker (Section 4OA3)

### LIST OF DOCUMENTS REVIEWED

#### Common Documents Used

Indian Point Unit 2, Updated Final Safety Analysis Report  
 Indian Point Unit 2, Individual Plant Examination  
 Indian Point Unit 2, Individual Plant Examination of External Events  
 Indian Point Unit 2, Technical Specifications and Bases  
 Indian Point Unit 2, Technical Requirements Manual  
 Indian Point Unit 2, Control Room Narrative Logs  
 Indian Point Unit 2, Plan of the Day

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

#### Procedures

2-COL-11.2, Central Control Room Ventilation and Air Conditioning System, Revision 16  
2-COL-24.1.1, Service Water System, Revision 46  
2-PT-EM013, Central Control Room Filtration, Revision 13  
2-SOP-11.1, Ventilation System Operation, Revision 54

#### Work Orders

52233216      52253679

#### Drawings

138221, Unit 1 Heating, Revision 11  
138248, Unit 1 Ventilation Control Diagrams, Sheet 1, Revision 9  
252665, Control Building Control and Air Flow Diagrams, Revision 17  
9321-2722, Service Water System, Sheet 1, Revision 125

#### Miscellaneous

IP2-Nuclear HVAC DBD, Design Basis Document for Central Control Room HVAC System,  
Revision 1

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

#### Procedures

EN-DC-161, Control of Combustibles, Revision 5  
IP2-RPT-03-00015, IP2 Fire Hazards Analysis, Revision 4  
PFP-156, General Floor Plan – Superheater Building, Revision 0  
PFP-214, Electrical Penetration Area 46' Elevation – Fan House, Revision 0  
PFP-215, General Floor Plan – Fan House 51' to 68' Elevation, Revision 0  
PFP-218, General Floor Plan – Boric Acid Evaporator Building, Revision 0

#### Drawings

IP2-S-000356, Central Control Room Ventilation Hi-Rad and Smoke Control Relays REI-2 &  
REI-3, Revision 1

#### Miscellaneous

IP2-Nuclear HVAC DBD, Design Basis Document for Central Control Room HVAC System,  
Revision 1

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

#### Procedures

0-ELC-418, Manhole Inspections, Revision 3  
2-AOP-FLOOD-1, Flooding, Revision 7  
2-MS-412, Inspection and Cleaning of Bus Bars, Contacts, Ground Connections,  
Wiring and Insulators, Revision 1  
EN-DC-346, Cable Reliability Program, Revision 2  
OAP-008, Severe Weather Preparations, Revision 10

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

2-E-0, Reactor Trip or Safety Injection, Revision 4  
 2-AOP-SG-1, Steam Generator Tube Leak, Revision 13  
 2-AOP-INST-1, Instrument/Controller Failures, Revision 6  
 2-POP-2.1, Operation at Greater than 45% Power, Revision 57

Condition Reports (CR-IP2-)

2011-5245    2011-5246    2011-5247    2011-5248    2011-5250

Miscellaneous

Form EP-4, Central Control Room Initial Notification Checklist, October 20, 2011  
 Form EP-5, Upgrade/Update Notification – Alert/SAE/GE Checklist, October 20, 2011  
 IPEC Simulator Evaluated Scenario LRQ-SES-058, October 20, 2011  
 Radiological Emergency Data Form, Part 1, October 20, 2011

**Section 1R12: Maintenance Effectiveness**Procedures

2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, Revision 13  
 2-PT-Q016, Containment Fan Cooler Unit Cooling Water Flow Test, Revision 2  
 EN-DC-150, Condition Monitoring of Maintenance Rule Structures, Revision 2  
 ENN-DC-150, Condition Monitoring of Maintenance Rule Structures, Revision 1  
 OAP-008, Severe Weather Preparations, Revision 9

Condition Reports (CR-IP2-)

2007-4447	2011-4324	2011-4384	2011-4409	2011-4836	2011-4893
2011-4894	2011-4950	2011-5112	2011-5253	2011-5277	2011-5328
2011-5359	2011-5394	2011-5412	2011-5425	2011-5426	2011-5530
2011-5532	2011-5656	2011-5663	2011-5966	2011-5967	2011-5968
2011-6033					

Maintenance Orders/Work Orders

291977    294137    294948    51270253    52259555

Drawings

139D304, Switchgear 480 V, Unit 2, Revision 0  
 9321-2012, Intake Structure, Revision 5  
 9321-4011, Miscellaneous Drainage Plant Area Plans, Sections, and Details, Revision 14

Miscellaneous

IP-CALC-07-00075, Service Water Pump Net Positive Suction Head and Submergence Evaluation, Revision 0  
 Licensee Event Report 2007-001-00, Technical Specification Prohibited Condition Due to Exceeding the Allowed Completion Time for an Inoperable Residual Heat Removal Pump Due to an Electrical Supply Breaker Failure  
 Licensee Event Report 2011-002-00, Technical Specification Prohibited Condition Caused by an Inoperable 21 Service Water Pump for Greater than Technical Specification Allowed Outage Time Due to a Faulty Inertia Latch in the Supply Breaker

LO-NOE-2005-00772, Operating Experience on Internal Flooding Deficiencies,  
 October 31, 2005  
 NRC Information Notice 92-69, Water Leakage from Yard Area Through Conduits Into Buildings  
 NRC Information Notice 2005-11, Internal Flooding/Spray-Down of Safety-Related Equipment  
 Due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains  
 NRC Information Notice 2005-30, Safe Shutdown Potentially Challenged by Unanalyzed  
 Internal Flooding Events and Inadequate Design  
 NRC Information Notice 2011-12, Reactor Trips Resulting from Water Intrusion into Electrical  
 Equipment  
 Operational Decision-Making Issue Process, Unit 2 Service Water Pump Essential Header  
 flow/pressure degradation, March 6, 2008  
 Operational Decision-Making Issue Process, Unit 2 Service Water Pump Essential Header  
 flow/pressure degradation, December 1, 2011  
 Safety Evaluation Report, Indian Point Unit 2, December 18, 1980  
 Unit 2 Service Water Scanning Sonar Inspection – Two Year Survey, February 16, 2011

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

#### Procedures

EN-WM-104, On Line Risk Assessment, Revision 6  
 IP-SMM-WM-101, Online Risk Assessment, Revision 3

#### Miscellaneous

Operator Narrative Logs, October 5, 2011  
 Operator Narrative Logs, October 31, 2011  
 Operator Narrative Logs, November 2, 2011  
 Operator Narrative Logs, November 10, 2011  
 Operator's Risk Report, October 5, 2011  
 Operator's Risk Report, October 31, 2011  
 Operator's Risk Report, November 2, 2011  
 Operator's Risk Report, November 10, 2011

### **Section 1R15: Operability Determinations and Functionality Assessments**

#### Procedures

EN-HU-103, Human Performance Error Reviews, Revision 5  
 EN-LI-118-03, Barrier Analysis, Revision 0  
 EN-OP-111, Operational Decision-Making Issue (ODMI) Process, Revision 6  
 2-AOP-RCP-1, Reactor Coolant Pump Malfunction, Revision 11  
 2-COL-18.1, Main Steam and Reheat System, Revision 39

#### Condition Reports (CR-IP2-)

2011-02574	2011-04110	2011-04533	2011-04556	2011-04579	2011-05052
2011-05144	2011-05177	2011-05185	2011-05186	2011-06257	

#### Maintenance Orders/Work Orders

00278608      52350520

Drawings

A200682, Containment Building Chemical and Volume Control System, Revision 13  
 A208168, Flow Diagram Chemical and Volume Control System, Revision 55  
 A226980, Aux Boiler Feed Pump Control Station PT1 Wiring, Revision 2  
 9321-2028, Flow Diagram Jacket Water to Diesel Generator, Revision 36  
 9321-F-3167, Wiring Diagram 480V Switchgear 21 Unit 26, Revision 42

Miscellaneous

ODMI for Increased Leak-by noted on PCV-1139 to 22 ABFP, Revision 0  
 ODMI for 21 Reactor Coolant Pump Seal Return Flow Perturbation, Revision 0  
 21 Reactor Coolant Pump Seal Return Flow, October 9, 2011 – December 18, 2011

**Section 1R18: Plant Modifications**Condition Reports (CR-IP2-)

2011-4951    2011-5367    2011-5499    2011-5967    2011-5781    2011-5804

Maintenance Orders/Work Orders

52274123    00296048    52293416

Miscellaneous

Engineering Change 32188, Temporary Screen at 27 & 28 Service Water Inlet Bays, Revision 0

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

0-BRK-406-ELC, Westinghouse 6900 Volt Breaker Inspection and Cleaning, Revision 18  
 2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, Revision 13  
 2-PT-M021C, Emergency Diesel Generator 23 Load Test, Revision 18  
 2-PT-Q026A, 21 Service Water Pump, Revision 17

Condition Reports (CR-IP2-)

2011-5112    2011-5287

Maintenance Orders/Work Orders

259269    286142    292029    291977    294137    52254527  
 52259358    52309493    52310568    52310574    52340437    52340439  
 52364728

Drawings

9321-2722, Flow Diagram Service Water System Nuclear Steam Supply Plant, Revision 125

**Section 1R22: Surveillance Testing**Procedures

2-PT-Q027A, 21 Auxiliary Feed Pump, Revision 17  
 2-PT-W020, Electrical Verification – Inverters and DC Distribution in Modes 1 to 4, Revision 3

Completed Procedures

0-SOP-LEAKRATE-001, RCS Leakrate Surveillance, Evaluation and Leak Identification,  
November 12, 2011, Revision 2  
2-PT-Q026C, 23 Service Water Pump, October 3, 2011, Revision 15

Condition Reports (CR-IP2-)

2008-5195    2010-1436    2011-3421    2011-5254

Maintenance Orders/Work Orders

00292032    52357741

Drawings

9321-2018, Flow Diagram Condensate & Boiler Feed Pump Suction, Revision 145  
9321-2019, Flow Diagram Boiler Feedwater, Revision 116

**Section 1EP6: Drill Evaluation**

Procedures

2-E-0, Reactor Trip or Safety Injection, Revision 4  
2-AOP-SG-1, Steam Generator Tube Leak, Revision 13  
2-AOP-INST-1, Instrument/Controller Failures, Revision 6  
2-POP-2.1, Operation at Greater than 45% Power, Revision 57

Condition Reports (CR-IP2-)

2011-5245    2011-5246    2011-5247    2011-5248    2011-5250

Miscellaneous

Form EP-4, Central Control Room Initial Notification Checklist, October 20, 2011  
Form EP-5, Upgrade/Update Notification – Alert/SAE/GE Checklist, October 20, 2011  
IPEC Simulator Evaluated Scenario LRQ-SES-058, October 20, 2011  
Radiological Emergency Data Form, Part 1, October 20, 2011

**Section 2RS2: Occupational As Low As is Reasonably Achievable Planning and Controls**

Procedures

EN-RP-105, Radiological Work Permits, Revision 9  
EN-RP-110, ALARA Program, Revision 7

Condition Reports (CR-IP2-)

2011-5110    2011-4457

Condition Reports (CR-IP3-)

2011-4290    2011-4307    2011-4359

**Section 2RS8: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation**

Procedures

EN-RW-105, Process Control Program, Revision 2

10-LP-RPCT-7919, Lesson Plan, Radioactive Material Shipping, Revision 3

Condition Reports (CR-IP2-)

2011-00590 2011-03812 2011-05102 2011-05103 2011-05104 2011-05360  
2011-05362

Condition Reports (CR-IP3-)

2010-01220 2011-00835

Miscellaneous

Common Scaling Factor (10 CFR 61) for IPEC Soil

IPEC QA Audit 14/15-2011-IP-1 (Preliminary)

IPEC QA Audit 14/15-2009-IP-1, 10/29/09

Quality Assurance Surveillance Report QS-2009-IP-01, 2/5/09

Radioactive Material Shipments: 11-003; 10-177; 10-138; 10-132; 10-021

Unit 2 Scaling Factors (10 CFR 61) for: LWS Resin; DAW; SFP Filters; RCS Filters

Unit 3 Scaling Factors (10 CFR 61) for: LWS Resin; RCS Filters; DAW; SRST

**Section 4OA1: Performance Indicator Verification**

Procedures

EN-EP-201, Performance Indicators, Revision 12

EN-LI-114, Performance Indicator Process, Revision 4

Completed Procedures

EN-LI-114, NRC Performance Indicator Process, January 5, 2011

EN-LI-114, NRC Performance Indicator Process, April 4, 2011

EN-LI-114, NRC Performance Indicator Process, July 7, 2011

EN-LI-114, NRC Performance Indicator Process, October 8, 2011

Miscellaneous

Operator Narrative Logs October 2010 – September 2011

**Section 4OA2: Problem Identification and Resolution**

Procedures

EN-LI-121, Entergy Trending Process, Revision 10

EN-OP-115, Conduct of Operations, Revision 12

OAP-046, Operator Burden Program, Revision 1

OAP-017, Plant Surveillance and Operator Rounds, Revision 6

Condition Reports (CR-IP2-)

2007-4862	2008-0439	2009-1187	2011-0388	2011-0433
2011-1041	2011-1057	2011-1057	2011-1066	2011-1197
2011-1408	2011-1411	2011-1716	2011-2172	2011-2197
2011-2297	2011-2424	2011-2450	2011-2459	2011-2474
2011-2830	2011-2994	2011-3006	2011-3162	2011-3262
2011-3264	2011-6251	2011-6257		

Maintenance Orders/Work Orders

00227840	00231006	00291945
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Miscellaneous

Control Room Deficiencies Performance Indicator, October 2010 – October 2011  
 Control Room Alarm Performance Indicator, October 2010 – October 2011  
 Operator Aggregate Impact Index, October 2010 – October 2011  
 Operator Burdens Performance Indicator, October 2010 – October 2011  
 Operator Work Arounds Performance Indicator, October 2010 – October 2011  
 Operator Special Log Index, July 2010 – November 2011  
 Standing Order 11-11  
 Unit 2 Operator Narrative Logs

**Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion**Procedures

2-BRK-022-ELC, Westinghouse Model DB-50 Breaker Preventative Maintenance, Revision 13

Condition Reports (CR-IP2-)

2010-4364	2010-6801	2010-6803	2011-1108	2011-1112	2011-1115
2011-4893	2011-5253	2011-5277	2011-5328	2011-5359	2011-5394
2011-5412	2011-5425	2011-5426	2011-5530	2011-5532	2011-5656
2011-5663					

Condition Reports (CR-IP3-)

2007-01834

Maintenance Orders/Work Orders

00256101	291977	294137	294948	51270253
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Miscellaneous

Licensee Event Report 2007-001-00, Technical Specification Prohibited Condition Due to Exceeding the Allowed Completion Time for an Inoperable Residual Heat Removal Pump Due to an Electrical Supply Breaker Failure  
 Licensee Event Report 2011-002-00, Technical Specification Prohibited Condition Caused by an Inoperable 21 Service Water Pump for Greater than Technical Specification Allowed Outage Time Due to a Faulty Inertia Latch in the Supply Breaker  
 NRC Indian Point Unit 3 Inspection Report 05000286/2007003

**Section 4OA5: Other Activities**Miscellaneous

Radiological Surveys of ISFSI pad dated: 7/6/11; 7/22/10; 9/7/11; 9/28/11



**Section 40A7: Licensee-Identified Violations**

Procedures

EN-LI-118-03, Barrier Analysis, Revision 0

EN-HU-103, Human Performance Error Reviews, Revision 5

Condition Reports (CR-IP2-)

2011-04556 2011-04579

Maintenance Orders/Work Orders

52350520

# LIST OF ACRONYMS

ABFP	auxiliary boiler feedwater pump
ACE	apparent cause evaluation
ADAMS	Agencywide Document Access and Management System
ALARA	as low as is reasonably achievable
CAP	corrective action program
CCRF	central control room fan
CFR	Code of Federal Regulations
CR	condition report
CRVS	control room ventilation system
EDG	emergency diesel generator
ENTERGY	Entergy Nuclear Northeast
FCU	fan cooler unit
FZ	fire zone
HVAC	heating, ventilation, and air conditioning
IMC	Inspection Manual Chapter
IN	Information Notice
ISFSI	Independent Spent Fuel Storage Installation
LER	Licensee Event Report
LOCA	loss of coolant accident
LOOP	loss of offsite power
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODMI	operational decision-making issue
OOS	out of service
PCP	process control program
PFP	pre-fire plan
PI	performance indicator
QA	quality assurance
RCE	root cause evaluation
RCS	reactor coolant system
SDP	significance determination process
SRA	Senior Risk Analyst
SSC	structure, system, and component
SW	service water
SWP	service water pump
TS	Technical Specification
UFSAR	Updated Final Safety Evaluation Report
URI	unresolved item