



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

November 10, 2010

EA-10-212

Mr. Joseph E. Pollock
Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
Buchanan, NY 105110249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 2 – NRC INTEGRATED
INSPECTION REPORT 05000247/2010004 AND EXERCISE OF
ENFORCEMENT DISCRETION

Dear Mr. Pollock:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 2. The enclosed integrated inspection report documents the inspection results, which were discussed on October 28, 2010, 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). This finding was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Indian Point Nuclear Generating Unit 2. Additionally, if you disagree with the cross-cutting aspect assigned to the 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 Resident Inspector at Indian Point Nuclear Generating Unit 2.

In addition, the inspectors reviewed Licensee Event Report 05000247/2010-004, which described the circumstances associated with reactor coolant system pressure boundary leakage from a five-sixteenth inch through-wall weld defect located at a socket weld associated with the 22 reactor coolant pump three-quarter inch seal bypass line. Although this issue constitutes a violation of NRC requirements, in that any reactor coolant system boundary leakage at power constitutes a violation, the NRC concluded that this issue was not within Entergy's ability to foresee and correct, that Entergy staff's actions did not contribute to the degraded condition, and that actions taken were reasonable to identify and address this matter. As a result, the NRC did not identify a performance deficiency. A risk evaluation was performed and the issue was determined to be of very low safety significance. Based on these facts, I have been authorized, after consultation with the Director, Office of Enforcement, and the Regional Administrator, to exercise enforcement discretion in accordance with Section 3.5 of the Enforcement Policy and refrain from issuing enforcement for the violation.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,



David C. Lew, Director
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000247/2010004
w/ Attachment: Supplemental Information

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Sincerely,

/RA/

David C. Lew, Director
Division of Reactor Projects

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Enclosure: Inspection Report No. 05000247/2010004
w/ Attachment: Supplemental Information

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U.S. Nuclear Regulatory Commission

Region I

Docket No.: 50-247

License No.: DPR-26

Report No.: 05000247/2010004

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: Indian Point Nuclear Generating Unit 2

Location: Buchanan, NY 10511

Dates: July 1, 2010 through September 30, 2010

Inspectors: M. Catts, Senior Resident Inspector – Unit 2
O. Ayegbusi, Resident Inspector – Unit 2
B. Bickett, Senior Project Engineer – Region I
H. Gray, Senior Reactor Inspector – Region I
J. Nicholson, Health Physicist – Region I

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

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SUMMARY OF FINDINGS

IR 05000247/2010004; 7/01/2010 – 9/30/2010; Indian Point Nuclear Generating (Indian Point) Unit 2; Post-Maintenance Testing.

This report covered a three-month period of inspection by resident and region-based inspectors. One non-cited violation (NCV) of very low significance (Green) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." The cross-cutting aspect for the finding was determined using IMC 0310, "Components within the Cross-Cutting Areas." Findings for which the significance determination process does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Mitigating Systems

- Green. A self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was identified because Entergy personnel did not adequately implement the preventive maintenance (PM) procedure for the B reactor trip breaker (RTB). Specifically, on March 10, 2009, Entergy staff did not adequately implement PM Procedure 0-BRK-401-ELC, "Westinghouse, Reactor Trip and Bypass Circuit Breaker (DB-50)," which resulted in the inoperability of the B RTB shunt trip device function on July 5, 2010. Entergy personnel took immediate corrective actions to replace the B RTB and its associated fuse block assembly. This issue was entered into Entergy's corrective action program as condition report (CR)-IP2-2010-4451.

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 (i.e. core damage). Specifically, inadequate preventive maintenance contributed to the failure of the shunt trip device function of the B RTB. 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 result in a loss of system safety function because the undervoltage coil was operable; there was not an actual loss of safety function of a single train for greater than its technical specification allowed outage time; and the issue was not potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program attribute of complete and accurate identification of issues. Specifically, Entergy staff performing preventive maintenance did not identify and communicate RTB conditions completely and accurately such that the B RTB conditions were fully identified in the CAP. [P.1(a) per IMC 0310] (Section 1R19)

REPORT DETAILS

Summary of Plant Status

Indian Point Unit 2 began the inspection period operating at full reactor power (100%). The Unit 2 reactor automatically tripped during a planned shutdown on September 3, 2010, due to high water level in the 23 steam generator. Unit 2 remained shutdown for a planned maintenance outage to repair the 21 reactor coolant pump (RCP) motor. Operators returned the plant to full power on September 15, 2010. Unit 2 remained at or near full power for the remainder of the inspection period.

1. REACTOR SAFETY**Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

1R01 Adverse Weather Protection (71111.01 – 1 sample)

Impending Adverse Weather**a. Inspection Scope**

Because severe weather was forecast in the vicinity of the facility for July 14, 2010, the inspectors reviewed Entergy's overall preparations/protection for the expected weather conditions. The inspectors walked down systems required for normal operation and shutdown conditions because their safety related functions could be affected, or required, as a result of high wind impacts or the loss of offsite power. The inspectors evaluated the plant staff's preparations in accordance with site procedures to determine if actions were adequate. During the inspection, the inspectors focused on plant specific design features and station procedures used to respond to adverse weather conditions. The inspectors also toured the site to identify loose debris that could become projectiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for the systems selected for inspection, and reviewed whether operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of corrective action program (CAP) items to verify that the licensee identified adverse weather impact issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one sample as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

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1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk significant systems:

- July 27, 2010, 22 safety injection train after post maintenance testing (PMT);
- September 14, 2010, 22 residual heat removal train after a maintenance outage; and
- September 27, 2010, 22 auxiliary feedwater (AFW) pump after a maintenance outage.

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors focused on those conditions that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, technical specification requirements, technical specifications (TSs), work orders (WOs), condition reports (CRs), 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 inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and 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 and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of three partial system walkdown samples as defined in NRC Inspection Procedure 71111.04.

b. Findings

No findings were identified.

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

a. Inspection Scope

On September 21 and 22, 2010, the inspectors performed a complete system alignment inspection of the safety injection system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, component lubrication and equipment cooling, hanger and support

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functionality, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. In addition, the inspectors reviewed the CAP database to ensure that system adverse conditions were being identified and appropriately resolved.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one complete system walkdown sample as defined in NRC Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 5 samples)

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk significant plant areas:

- Pre-Fire Plan (PFP) 160A;
- PFP-205;
- PFP-208;
- PFP-209; and
- PFP-259.

The inspectors reviewed areas to assess if Entergy personnel implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the station's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk and their potential to affect equipment that could initiate or mitigate a plant transient. Using the documents listed in the attachment, the inspectors reviewed whether fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also reviewed whether issues identified during the inspection were entered into the licensee's CAP.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of five quarterly fire protection inspection samples as defined in NRC Inspection Procedure 71111.05.

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b. Findings

No findings were identified.

.2 Annual Fire Drill (71111.05A – 1 sample)

a. Inspection Scope

On August 11, 2010, the inspectors observed a fire brigade activation involving a simulated fire in the vicinity of the hydrazine cylinders, which is located in the turbine building. The observation involved an evaluation of the readiness of the plant fire brigade to fight fires. The inspectors reviewed whether Entergy staff identified performance deficiencies; openly discussed them in a critical manner at the drill debrief; and identified appropriate corrective actions. Specific attributes evaluated by the inspectors were (1) proper wearing of turnout gear and self contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of preplanned strategies; (9) adherence to the preplanned drill scenario; and (10) drill objectives.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one annual fire protection inspection sample as defined in NRC Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Internal Flooding Review

a. Inspection Scope

The inspectors reviewed the UFSAR, the site flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; and reviewed the CAP to determine if the licensee identified and corrected flooding problems, and to verify whether operator actions for coping with flooding are adequate. The inspectors also focused on the component cooling water pump room areas to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one internal flood protection measures inspection sample as defined in NRC Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11Q – 1 sample)Quarterly Reviewa. Inspection Scope

On September 1, 2010, the inspectors observed a crew of licensed operators, responding to a simulated event involving a steam generator tube rupture coincident with a loss of offsite power and the failure of select components to automatically start as required. The inspectors observed the scenario in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas regarding crew and operator performance:

- Clarity and formality of communications;
- Implementation of timely actions;
- Prioritization, evaluation, and verification of annunciator alarms;
- Usage and implementation of abnormal and emergency procedures;
- Control board operations;
- Identification and implementation of TS actions and emergency plan actions and notifications; and
- Oversight and direction from control room supervisors.

The inspectors compared the crew's performance in these areas to critical task completion requirements.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one quarterly licensed operator requalification program sample as defined in NRC Inspection Procedure 71111.11.

b. Findings

No findings were identified.

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

The inspectors reviewed the 22 static inverter to assess the effectiveness of maintenance activities on system performance and reliability. The inspectors reviewed, when applicable, system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure performance problems were being identified and properly evaluated within the scope of the maintenance rule. For each sample selected, the inspectors reviewed whether the

structure, system, and component (SSC) was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and reviewed whether the (a)(2) performance criteria established by Entergy staff was reasonable. 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 determined if Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one quarterly maintenance effectiveness sample as defined in NRC Inspection Procedure 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities affecting risk significant and safety related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- July 19, 2010, elevated risk due to severe weather with 22 fuel oil transfer pump out of service for planned testing; and 22 charging pump, 22 instrument air dryer, and feeder 96951 out of service for emergent maintenance;
- July 28, 2010, elevated risk due to 23 charging pump out of service for planned maintenance and 6.9kV relay functional testing;
- August 19, 2010, elevated risk for 480 volt degraded voltage function and emergency diesel generator (EDG) out of service for planned calibration and testing of 480 volt undervoltage alarms;
- August, 24, 2010, elevated risk for 21 AFW pump test, and alternate safe shutdown supply breaker to 21 AFW pump test, during emergent maintenance on individual rod position indication D-8; and
- September 16, 2010, elevated risk due to 21 EDG, refueling water storage tank level indicator, and residual heat removal valve 884 out of service for planned maintenance; and 21 service water pump out of service for emergent maintenance.

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 or shift technical advisor, 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.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of five maintenance risk assessments and emergent work control inspection sample as defined in NRC Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 – 3 samples)

a. Inspection Scope

The inspectors reviewed the following issues:

- July, 6, 2010, 480 volt switchgear room high temperature alarm;
- July 20, 2010, EDG starting air capacity; and
- August 17, 2010, EDG fuel oil leaks.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations 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. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of three operability evaluations inspection samples as defined in NRC Inspection Procedure 71111.15.

b. Findings

No findings were identified.

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

The inspectors reviewed the following temporary modification to verify that the safety functions of affected safety systems were not degraded:

On July 28, 2010, Entergy staff implemented Engineering Change (EC) 23681 in response to high upper thrust bearing temperatures on the 21 RCP motor. The temporary modification raised the upper thrust bearing temperature alarm setpoint from 185F to 190F and the manual trip setpoint from 200F to 205F. This temporary modification remained in place until repair of the 21 RCP motor was completed September 13, 2010.

The inspectors reviewed the temporary modification and the associated safety evaluation screening against the system design bases documentation, including the UFSAR and the TSs, and verified that the modification did not adversely affect the system operability/availability. The inspectors also reviewed whether the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and Entergy personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one sample for temporary plant modifications as defined in NRC Inspection Procedure 71111.18.

b. Findings

No findings were identified.

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

The inspectors reviewed the following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- July 5, 2010, B reactor trip breaker (RTB) replacement;
- July 6, 2010, temperature average signal computer after summing amplifier repair;
- July 21, 2010, 22 charging pump after internal valve replacement;
- July 21, 2010, rod position indicators E13 and L13 after replacement;
- August 25, 2010, pilot operated relief valve disconnect switches EDC 10 and 11 after maintenance;

- September 7, 2010, 22 steam generator level bistable LC 427 A/B after replacement; and
- September 16, 2010, 21 EDG after maintenance outage.

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities to determine (as applicable) the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; and that test instrumentation was appropriate. The inspectors evaluated the activities against the TSs, the UFSAR, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with PMTs to determine whether Entergy personnel were identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of seven PMT inspection samples as defined in NRC Inspection Procedure 71111.19.

b. Findings

Reactor Trip Breaker (RTB) Preventative Maintenance Procedure was not Adequately Implemented

Introduction: A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion V "Instructions, Procedures and Drawings," was identified because Entergy staff did not adequately implement the PM procedure for the B RTB in March 2009.

Description: On July 5, 2010, control room operators observed the B RTB red indicating breaker closed lights were extinguished. The red indicating breaker closed lights are in series with the shunt trip device and provide indication in the control room that the breaker trip mechanism is functioning properly. After troubleshooting was conducted, Entergy operators determined the shunt trip device function was inoperable, entered the applicable TS action statement TS 3.3.1, "Reactor Protection System (RPS) Instrumentation," and issued CR-IP2-2010-4451. The associated bypass breaker was racked in and the B RTB and its associated fuse block were replaced. The B RTB shunt trip device was restored to operability in the timeframe provided in the TS action statement. Entergy personnel generated WOs to replace fuse block assemblies for the remaining reactor trip and bypass breakers at the site.

Indian Point Unit 2 has two reactor trip breakers in service that are normally closed during normal plant operations and two bypass breakers in parallel to each RTB for performing PM. The breakers have two tripping mechanisms which include the undervoltage coil and the shunt trip device. The tripping mechanisms serve to open the RTB when the RPS automatic trip logic is made up to interrupt power to the control rod drive mechanisms, which allows the shutdown and control rods to fall into the core by

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gravity. The shunt trip device serves a redundant function that ensures the breaker opens if the undervoltage coil failed to function properly.

Entergy personnel performed an apparent cause evaluation (ACE) of the B RTB failure and determined that the B RTB red indicating lights in the control room were extinguished due to a degraded control power fuse holder. This degradation included a broken corner of the insulating material, loose fuse clips, exposed copper due to worn silver coating on contact points, distorted fuse clip blades and poor contact resistance checks. The fuse holder when installed into the fuse case had insufficient tension and could be easily removed or installed without requiring significant force. Entergy personnel determined the degraded condition was due to a lack of questioning attitude and attention to detail by maintenance personnel during past PM inspections. Entergy's ACE noted that the degraded condition developed over the course of several years and was evident at a minimum during the March 10, 2009 performance of PM Procedure 0-BRK-401-ELC "Westinghouse, Reactor Trip and Bypass Circuit Breaker (DB-50)," which includes a step for checking the fuse holder. Entergy's corrective actions included: reinforce conduct of maintenance in regards to activities of plant equipment within the maintenance and operations departments; enhance guidance for fuse block inspection in PM procedures; and evaluate the need for maintenance and operations department training enhancements associated with fuses and fuse block inspections.

The inspectors reviewed the ACE and completed PM procedure, and also identified that maintenance personnel identified issues with the control power fuses and a chip on the fuse holder; however, the adverse conditions were not communicated to the responsible engineer as required by Step 4.2.7 "Notify Responsible Engineer AND Supervisor of unusual conditions AND record below." In addition, a CR was not issued in accordance with the PM procedure and station standards. The inspectors noted that Step 3.10 of the PM procedure states that "All unacceptable components and conditions SHALL be documented on Attachment 1 and Unacceptable Component Tracking Sheet accepted or corrected under the direction of the Component Engineer;" however, the attachment was not completed. The inspectors also identified a separate issue with the procedure where maintenance personnel did not perform cell switch inspection and lubrication as required by Step 4.2.9. This step is necessary to ensure that the cell switches reset to their shelf position upon removal of a RTB and the reactor protection circuitry is established as designed. Entergy personnel documented this issue in CR-IP2-2010-5317 and performed Step 4.2.9 of the procedure during a forced outage in September 2010 under WO 249229 and did not identify an adverse condition. Entergy's corrective actions included reviewing a sample of work packages under CR-IP3-2010-1022 to ensure all work packages were fully completed.

Analysis: The performance deficiency associated with this finding was that Entergy personnel did not adequately implement the PM procedure for the B RTB in March 2009. 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 (i.e. core damage). Specifically, an inadequate PM implementation contributed to the failure of the shunt trip device function of the B RTB. 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 result in a loss of system safety function because the undervoltage coil was operable; there was not an actual loss of safety function of a single train for greater than its technical specification allowed outage time; and the issue was not potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program attribute of complete and accurate identification of issues. Specifically, Entergy staff did not identify and communicate RTB conditions completely and accurately such that the B RTB conditions were fully identified in the CAP. [P.1.(a) per IMC 0310]

Enforcement: 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. Contrary to the above, on March 10, 2009, maintenance personnel did not adequately implement PM Procedure 0-BRK-401-ELC "Westinghouse, Reactor Trip and Bypass Circuit Breaker (DB-50)" which resulted in the inoperability of the B RTB shunt trip device on July 5, 2010. Entergy personnel took immediate corrective actions to replace the B RTB and its associated fuse block assembly. Because this violation was of very low safety significance and it was entered into Entergy's CAP as CR-IP2-2010-4451, this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: **NCV 5000247/2010004-01, Reactor Trip Breaker Preventative Maintenance Procedure was not Adequately Implemented.**

1R20 Refueling and Outage Activities (71111.20 – 1 sample)

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the Unit 2 planned maintenance outage to repair the 21 RCP, conducted September 3 – 15, 2010. The inspectors' review considered whether Entergy personnel appropriately considered risk, industry experience, and previous site performance in developing and implementing a plan that assured maintenance of defense in depth with regards to reactor safety. During the maintenance outage, the inspectors observed portions of the shutdown and cooldown processes and monitored Entergy operator controls over the outage activities listed below:

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable TSs when taking equipment out of service;
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- Status and configuration of electrical systems to ensure that TSs and outage planning requirements were met, and controls over switchyard activities were appropriate;
- Monitoring of decay heat removal processes, systems, and components;
- Controls over activities that could affect reactivity;
- Maintenance of secondary containment as required by the TS;

- Startup and ascension to full power operation, tracking of startup prerequisites, and walkdown of containment to verify that debris had not been left which could impact emergency core cooling system suction strainers;
- Station personnel identification and resolution of problems related to maintenance outage activities; and
- Work hours for fatigue concerns.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one other outage inspection sample as defined in NRC Inspection Procedure 71111.20.

b. Findings

No findings of significance 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 structures, systems, and components, to assess whether test results satisfied Technical Specifications, UFSAR, technical requirements manual, and Entergy procedure requirements. The inspectors verified that: test acceptance criteria were sufficiently clear; tests demonstrated operational readiness and were consistent with design basis documentation; test instrumentation had accurate calibrations and appropriate range and accuracy for the application; tests were performed as written; and applicable test prerequisites were satisfied. Following the tests, the inspectors considered whether the test results supported conclusions that equipment was capable of performing the required safety functions. The following surveillance tests were reviewed:

- June 30, 2010, 2-PT-Q62, high steam flow and turbine first stage pressure bistables test;
- July 30, 2010, 2-PT-Q088, inservice testing of component cooling water check valves 790, 791, 798 & 796, 793;
- August 4, 2010, 2-PT-Q58, steam generator level bistables test; and
- August 19, 2010, 2-PT-M048, 480V undervoltage alarm test.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of four surveillance testing inspection samples as defined in NRC Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness1EP6 Drill Evaluation (71114.06 – 1 sample)Emergency Preparedness Drill Observationa. Inspection Scope

The inspectors evaluated the conduct of a routine Entergy emergency drill on September 1, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator 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.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one sample as defined in NRC Inspection Procedure 71114.06.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES4OA1 Performance Indicator Verification (71151 – 2 samples).1 Mitigating Systems Performance Index – High Pressure Injection Systems (MS07)a. Inspection Scope

The inspectors sampled Entergy submittals for the mitigating systems performance index – high pressure injection systems PI for the period from July 2009 through June 2010. To determine the accuracy of the PI 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 reviewed Entergy's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals. The inspectors also reviewed Entergy's issue report database to determine if problems had been identified with the PI data collected or transmitted for this indicator and none were identified.

Specific documents reviewed are described in the attachment to this report. These activities constitute completion of one mitigating systems performance index - high pressure injection system sample as defined in NRC Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index – Heat Removal System (MS08)

a. Inspection Scope

The inspectors sampled Entergy submittals for the mitigating systems performance index – heat removal system PI for the period from July 2009 through June 2010. To determine the accuracy of the PI 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 reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports to validate the accuracy of the submittals. The inspectors also reviewed Entergy's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified.

Specific documents reviewed are described in the attachment to this report. These activities constitute completion of one mitigating systems performance index - heat removal system sample as defined in NRC Inspection Procedure 71151.

b. Findings

No findings were identified.

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

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that issues were being entered into Entergy's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. 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. The inspectors reviewed attributes that included: (1) complete and accurate identification of the problem; (2) timely correction, commensurate with the safety significance; (3) evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and (4) classification, prioritization, focus, and timeliness of corrective actions.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter. Specific documents reviewed during this inspection are listed in the attachment.

b. Findings

No findings were identified.

.2 Annual Sample - Review of Nonfunctional Emergency Light EL-6

a. Inspection Scope

The inspectors selected for review CR-IP2-2010-5037 to determine if problems were being properly identified, characterized, and entered into the CAP for evaluation and resolution. This CR-IP2-2010-5037 documented a failure of Emergency Light (EL) EL-6 due to its light beams being misaligned during the last functional test. Entergy performed an extent of condition review with no issues identified. The inspectors also conducted walkdowns and interviewed plant personnel to verify proper EL alignment.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one in-depth problem identification and resolution sample as defined in NRC Inspection Procedure 71152.

b. Findings and Observations

No findings were identified.

The inspectors identified the issue documented in CR-IP2-2010-5037 during a plant walkdown. The inspectors reviewed the last completed Procedure 2-PT-M49A/B "Appendix R Emergency Lighting," and found that EL-6 had electrolyte added to its internal battery. Access to the battery is through the top cover, where the light beams are attached, and manipulating the top cover easily moves the light beams out of position. The inspectors determined that the procedure checks the alignment of the light beams before adding electrolyte to the battery, but does not verify the light beams are in the correct position once the cover and lights are re-installed. This issue was entered into the licensee's CAP as CR-IP3-2010-2576. The inspectors determined this issue is minor because the light found out of position was only used for access and egress paths; operations personnel carry flashlights when responding to fires; there was no impact on the operation of a safety related component; and no other light beams were found out of position over the last year. The inspectors determined that Entergy's corrective action to revise the functional test procedure to verify light beam alignment upon completion of the procedure is adequate.

.3 Annual Sample - Buried Pipe Inspection and Monitoring Program

a. Inspection Scope

The inspectors interviewed the Program Owner (Responsible Engineer) for the Indian Point Buried Pipe Inspection and Monitoring Program and reviewed the related applicable procedures for the program. The inspectors used as a reference the Electric Power Research Institute (EPRI) and NEI guidelines for buried pipe systems. Field observations were made of the areas of past and current buried pipe activities. These included the Unit 2 and Unit 3 condensate storage tank (CST) and auxiliary feedwater

(AFW) piping, and the piping exiting the Unit 3 reactor water storage tank to under the independent spent fuel storage installation (ISFSI) haul path.

The inspection scope included determining the status of site activities and plans to monitor and inspect buried piping and storage tanks. The inspectors ensured these activities met or exceeded the EPRI and NEI guidance and requirements to understand the condition of these components to minimize the occurrence of leakage.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one in-depth problem identification and resolution sample, as defined in NRC Inspection Procedure 71152.

b. Findings and Observations

No findings were identified.

A leak in the Unit 2 AFW system 8-inch diameter return line to the CST was identified by Entergy staff on February 15, 2009 and repaired. In September 2009, guided wave inspection conducted by station personnel identified Level 2 G-scan indications in both the Unit 2 and Unit 3 AFW CST 12-inch diameter suction lines. Level 2 G-scan indications are areas of moderate interest where follow-up is recommended. Entergy entered this condition for evaluation into the CAP as CR-IP2-2009-00666.

4OA3 Event Follow-up (71153 – 3 samples)

.1 (Closed) Licensee Event Report 05000247/2010-004-00, Plant Operation Outside Technical Specifications Due to a Leak in the Reactor Coolant Pressure Boundary.

a. Inspection Scope

On March 18, 2010, while Indian Point Unit 2 was shutdown for a refueling outage, Entergy staff identified boron accumulation at a socket weld from the reactor coolant pressure boundary on a three-quarter inch line located upstream of check valve 256B associated with 22 RCP seal bypass line. Based on visual inspections conducted by Entergy staff during its boric-acid walkdowns, Entergy personnel concluded that the leak most likely existed during plant operation based on the amount of dry boron accumulation at the weld defect area. Entergy engineering personnel characterized the flaw as a rounded weld defect in the socket weld, which likely was introduced at the time of system construction and which propagated through-wall over time during plant operations as the result of service induced loading conditions. Entergy maintenance technicians repaired the defect during the April 2010 outage. Entergy staff determined the leakage could have existed during plant operation and, therefore, the plant could have been operating contrary to TS 3.4.13, "RCS Operational Leakage," which limits operational pressure boundary leakage to zero.

The inspectors reviewed the Licensee Event Report (LER), Entergy's evaluation of the event, and associated corrective actions contained in CR-IP2-2010-01631. The inspectors determined that the weld defect and resultant leakage was not within Entergy's ability to foresee and correct based on review of Entergy's visual examination

results, corrective action reviews and associated non-destructive examination requirements for this weld. This review was supplemented by inspector observations of this prior leakage condition observed by inspectors during the outage as part of NRC Inspection Procedure 71111.08. Specifically, the inspectors affirmed that there were no in-service inspection requirements not implemented or previous corrective action information available to Entergy personnel that would have detected or reasonably indicated a weld defect for this particular socket weld. The inspectors also affirmed Entergy staff identified the leakage at the first reasonable opportunity. Therefore, the inspectors concluded operation of Indian Point Unit 2 with RCS pressure boundary leakage is prohibited by TS 3.4.13. However, the inspectors determined that this weld defect could not have been avoided or detected by Entergy's quality assurance program or other related control measures, and did not constitute a performance deficiency.

These activities constitute completion of one event follow-up sample as defined in NRC Inspection Procedure 71153.

b. Findings

This issue is considered within the traditional enforcement process because there was no performance deficiency identified and NRC IMC 0612, Appendix B, "Issue Screening" directs disposition of this issue in accordance with the NRC Enforcement Policy. The inspectors used the Enforcement Policy, Section 6.1 – Reactor Operations, to evaluate the significance of this violation. The inspectors concluded that the violation is more than minor and best characterized as Severity Level IV (very low safety significance) because it is similar to Enforcement Policy Section 6.1, Example d.1. Additionally, the inspectors assessed the risk associated with the issue by using IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The inspectors screened the issue and determined that RCS leakage is considered a Loss-of-Coolant Accident initiator, and evaluated using the Initiating Event criteria in Appendix A. Based on the weld defect size and characterization of the flaw, it is not expected this existing flaw would have impacted the structural integrity of the bypass line, the leakage would not result in exceeding the TS limit for identified RCS leakage (10 gpm) nor would the leakage have likely affected other mitigation systems resulting in a total loss of their safety function. As a result, this issue would screen as very low safety significance (Green).

Because this issue is of very low safety significance (Green) and it has been determined that this issue was not within Entergy's ability to foresee and correct, that Entergy staff's actions did not contribute to the degraded condition, and that actions taken were reasonable to identify and address this matter, and as such no performance deficiency exists, the NRC has decided to exercise enforcement discretion in accordance with Section 3.5 of the NRC Enforcement Policy and refrain from issuing enforcement action for the violation of TSs (EA-10-212). Further, because licensee actions did not contribute to this violation, it will not be considered in the assessment process or the NRC's Action Matrix. This LER is closed. Specific documents reviewed during this inspection are listed in the attachment.

Enclosure

.2 Loaded Multi-Purpose Canister Stuck During Transfer from the HI-TRAC Transfer Cask to a HI-STORM Storage Cask

a. Inspection Scope

The inspectors reviewed the below listed equipment issue for plant status and mitigating actions to evaluate Entergy staff performance and confirm that Entergy staff implemented actions and notifications (if required) in accordance with station procedures.

From July through September, 2010, Entergy personnel conducted a campaign to place selected spent fuel elements into dry cask storage. On August 11, 2010, during the transfer of a fully loaded Multipurpose Canister (MPC) MPC-32 canister from the HI-TRAC transfer cask into a HI-STORM storage cask, the MPC became lodged while partially inserted into the HI-STORM cask. The MPC had been lowered approximately 18 inches into the HI-STORM from the HI-TRAC, but became lodged and could not be lowered or raised with the fuel storage building (FSB) gantry crane.

Through consultation with representatives of Holtec International (Holtec), the storage system vendor, Entergy personnel determined the problem to be a result of a mis-alignment of the HI-TRAC, the HI-STORM, and the mating device that joins the HI-TRAC to the HI-STORM for the MPC transfer. After connections to the mating device and HI-TRAC were loosened, the FSB gantry crane main hoist was used to take up some of the HI-TRAC load. This manipulation freed up the MPC and it was able to be raised back into the HI-TRAC. The HI-TRAC and MPC were then lifted off the HI-STORM and mating device and placed into a safe storage position on August 13, 2010. Entergy personnel subsequently resumed dry cask operation during the week of August 16, 2010 and the MPC was able to be loaded into the HI-STORM on August 19, 2010. The HI-STORM was subsequently placed on the ISFSI pad and no additional problems were encountered.

The inspectors reviewed Entergy actions and decision making to verify decisions were consistent with a conservative approach to assessing and addressing the condition. The inspectors reviewed whether Entergy evaluations (and/or vendor supplied correspondence) were supported and addressed the thermal and structural performance of the MPC including a focus on the heat load of this loaded MPC to ensure the heat load remained below the Final Safety Analysis Report (FSAR) maximum permissible heat load limits. The inspectors also reviewed station evaluations that concluded that there was no structural damage to the air channels inside the HI-STORM and the thermal performance of the MPC and HI-STORM was not adversely affected.

These activities constitute completion of one event follow-up sample as defined in NRC Inspection Procedure 71153.

b. Findings

No findings were identified.

The inspectors determined that Entergy and vendor-supplied evaluations appropriately concluded that the MPC was not adversely impacted in either thermal or structural performance. Entergy entered the issue into the CAP and revised Holtec procedure 2-DCS-009-GEN, "MPC Transfer & HI-STORM Movement," to ensure that the mating device is properly aligned with the HI-STORM.

.3 Automatic Reactor Trip on High Steam Generator Water Level

a. Inspection Scope

The inspectors reviewed the below listed event for plant status and mitigating actions to evaluate Entergy performance and confirm that Entergy operators implemented actions and notifications (if required) in accordance with station procedures.

The inspectors evaluated the response of control room personnel following the automatic reactor trip that occurred on September 3, 2010, during a normal shutdown for a planned maintenance outage for repairs to the 21 reactor coolant pump motor. The Indian Point Unit 2 reactor automatically tripped from approximately 41% power in response to a main generator trip caused by high water level in the 23 steam generator. The inspectors reviewed plant computer data, including the sequence of events report, evaluated plant parameter traces, and discussed the event with plant personnel, to verify that plant equipment responded as expected, and to ensure that operating procedures were appropriately implemented. The inspectors verified that operations personnel took appropriate actions in accordance with procedures in response to control rod H-8 indicating that the rod did not fully insert. The inspectors also verified that Entergy's post-trip review group (PTRG) identified the most probable cause(s) of the trip to facilitate corrective actions prior to restart. This event and the PTRG report were entered into Entergy's corrective action program as CR-IP2-2010-5484.

Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one event follow-up sample as defined in Inspection Procedure 71153.

b. Findings

No findings of significance were identified. The inspectors determined that operational response to the reactor trip was appropriate and that the indication problem with control rod H-8 was verified and corrected. The inspectors will conduct further review of the root cause evaluation (RCE) and associated corrective actions in conjunction with review of the licensee event report to be submitted by Entergy personnel.

40A6 Meetings, Including Exit**Exit Meeting Summary**

On October 28, 2010, the inspectors presented the inspection results of the integrated inspection to Mr. Joseph Pollock, Site Vice President, and other members of the Entergy staff. The licensee acknowledged the conclusions and observations presented. The inspectors asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

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

J. Pollock	Site Vice President
R. Allen	NDE Level III, Code Programs
H. Anderson	Specialist – Nuclear Safety/Licensing
N. Azevedo	Supervisor – Engineering
J. Baker	Shift Manager
M. Burney	Specialist – Nuclear Safety/Licensing
R. Burroni	Manager – System Engineering
T. Cole	Project Manager – NUC
G. Dahl	Specialist – Nuclear Safety/Licensing
R. Daley	Engineer III – Nuclear
G. Dean	Shift Manager
D. Dewey	Shift Manager
G. Hocking	Supervisor – Radiation Protection
R. Lee	Buried Pipe and Tank Program Lead Engineer
J. Lijoi	Superintendent – I&C
L. Lubrano	Senior Lead Engineer
R. Magee	Senior HP/Chemical Specialist
T. McCaffrey	Manager – Design Engineering
T. Orlando	Director, Engineering
S. Prussman	Specialist – Nuclear Safety/Licensing
J. Reynolds	Corrective Action Specialist
T. Salentino	Superintendent – Dry Fuel Storage
S. Sandike	Sr. HP/Chemical Specialist
D. Smith	Technical Specialist
F. Spagnuolo	Supervisor – Control Room
M. Tesoriero	Manager – Programs and Components
A. Vitale	General Manager, Plant Operations
R. Walpole	Manager, Licensing

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

05000247/2010-004-01	NCV	Reactor Trip Breaker Preventative Maintenance Procedure was not Adequately Implemented (Section 1R19)
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Closed

05000247/2010-004-00	LER	Plant Operation Outside Technical Specifications Due to a Leak in the Reactor Coolant Pressure Boundary (Section 4OA3)
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LIST OF DOCUMENTS REVIEWED

Common Documents Used

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

Section 1R01: Adverse Weather Protection

Procedures

2-AOP-FLOOD-1, Flooding, Rev. 6
IP-SMM, Event Notification and Reporting, Rev. 11
OAP-008, Severe Weather Preparations, Rev. 7

Condition Reports (CR-IP2-)

2010-04578

Miscellaneous

50.72 Event Notification 46092, July 14, 2010
Individual Plant Examination for External Events for Indian Point Unit 2, Section 5.2.2.1.3,
Evaluation of Flood Area PAB 68-1
IP-RPT-04-00230, Indian Point Unit 2 Probabilistic Safety Assessment, Rev. 1

Section 1R04: Equipment Alignment

Procedures

2-ARP-SMF, CCR Safety Injection, Rev. 22
2-COL-4.2.1, Residual Heat Removal System, Rev. 27
2-COL-10.0, Locked Safeguards Valves, Rev. 40
2-COL-10.1.1, Safety Injection System, Rev. 33
2-COL-18.1, Main Steam and Reheat System, Rev. 38
2-COL-21.3, Steam Generator Water Level and Auxiliary Boiler Feedwater, Rev. 30
2-PT-2Y020A, 21 SICP Comprehensive Test, Rev. 1
2-SOP-10.1.1, Safety Injection Accumulators and Refueling Water Storage Tank Operations,
Rev. 52
OAP-019, Component Verification and System Status Control, Rev. 5

Condition Reports (CR-IP2-)

2008-05043

Drawings

9321-F-2735, Safety Injection System, Rev. 140

Section 1R05: Fire Protection

Procedures

IP2-RPT-03-00015, IP2 Fire Hazards Analysis, Rev. 2

Condition Reports (CR-IP2-)

2010-04515 2010-05048 2010-05075

Pre Fire Plan

PFP-160A, Appendix R/Station Black Out Emergency Diesel Generator Unit 1 – 33'-0"
Elevation, Rev. 10

PFP-205, Primary Auxiliary Building – 35'-0" Elevation, Rev. 0

PFP-208, Primary Auxiliary Building – 68'-0" Elevation, Rev. 0

PFP-209, Primary Auxiliary Building – 68'-0" Elevation, Rev. 0

PFP-259, Auxiliary Feedwater Pump Room – 18" Elevation, Rev. 0

Miscellaneous

EN-DC-161, Control of Combustibles, Rev. 4

Section 1R06: Flood Protection Measures

Procedures

2-AOP-FLOOD-1, Flooding, Rev. 6

OAP-008, Severe Weather Preparations, Rev. 7

Condition Reports (CR-IP2-)

2009-00456

Drawings

9321-F-2719-134, Waste Disposal System, April 14, 2006

Miscellaneous

Design Basis Document for Component Cooling Water System, Rev. 1

Individual Plant Examination for External Events for Indian Point Unit 2, Section 5.2.2.1.3,
Evaluation of Flood Area PAB 68-1

IP-RPT-04-00230, Indian Point Unit 2 Probabilistic Safety Assessment, Rev. 1

UFSAR Section 11.1, Waste Disposal System, Rev. 21

Section 1R11: Licensed Operator Requalification Program

Procedures

2-E-3, Steam Generator Tube Rupture, Rev. 1

2-FR-S.1, Response to Nuclear Power Generation/Anticipated Transient Without SCRAM,
Rev. 1

OAP-008, Severe Weather Preparations, Rev. 7

Section 1R12: Maintenance EffectivenessProcedures

2-ARP-025, Station Auxiliary Transformer, Rev. 1

Condition Reports (CR-IP2-)

2008-01258	2008-02723	2008-02954	2009-00419	2009-01284	2010-00548
2010-02994	2010-03173	2010-03695			

Work Orders

152061	234069	51324390
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Miscellaneous

138 KV System Health Report, January – June, 2010

IPEC Combined Basis Document for 138 KV System, Rev. 2

Operational Decision Making Instruction, Reactor Coolant Pump 21 Upper Oil Reservoir
Elevated Bearing Temperatures, June 29, 2010

Operations Narrative Logs – July 26, 2010

Reactor Coolant Pump 21 Upper Thrust Bearing Temperature Trend, June 23, 2010 –
September 2, 2010

R&G Laboratories, Oil Analysis Severity for Reactor Coolant Pump 21, August 11, 2010

Section 1R13: Maintenance Risk Assessments and Emergent Work ControlProcedures

2-PT-M048, 480 Volt Undervoltage Alarm, Rev. 23

2-SOP 24.1.1, Service Water Hot Weather Operation, Rev. 11

EN-WM-104, On Line Risk Assessment, Rev. 1

IP-SMM-101, Online Risk Assessment, Rev. 3

OAP-008, Severe Weather Preparations, Rev. 6

Condition Reports (CR-IP2-)

2008-03893 2009-00154

Miscellaneous

Daily Status Report, Indian Point 2, August 24, 2010

DRN 10-4007, 2-PT-M048 Test Switch Monitor, Rev. 6

Operator Narrative Logs, July 19, 2010

Operator Narrative Logs, August 19, 2010

Operator Narrative Logs, August 24, 2010

Operator Narrative Logs, September 16, 2010

Operator's Risk Report, July 19, 2010

Operator's Risk Report, August 19, 2010

Operator's Risk Report, August 24, 2010

Operator's Risk Report, September 16, 2010

Technical Specification 3.3.5, Loss of Power Diesel Generator Start Instrumentation

Technical Specification 3.8.1, AC Sources - Operating

Updated Final Safety Analysis Report, Section 7.5.2.1.12, Bus Undervoltage, Rev. 21

Section 1R15: Operability Evaluations

Procedures

2-ARP-SJF, Cooling Water and Air, Rev. 39
EN-OP-104, Operability Determination Process, Rev. 4

Condition Reports (CR-IP2-)

2006-07329 2010-04457 2010-04631 2010-04711 2010-04753 2010-05172
2010-05173 2010-6052

Condition Reports (CR-IP3-)

2006-04063 2008-00698 2010-2924

Work Orders

247502 247503

Drawings

9321-F-4017, Control Building Heating Vent and Air Conditioning, Rev. 6

Calculations

GMH-00033-00, Indian Point 480V Switchgear Room Ventilation in the Event Some Fire
Dampers are Shut or in Closed Position, Rev. 0
IP-06-00329, Replacement of EDG Air Start Motors, Rev. 0

Miscellaneous

2-ARP-003, Diesel Generator, Rev. 8
Emergency Diesel Generator Air Receiver Pressure Trends, July 2008 – July 2010
LO-LAR-2010-123, License Amendment Request for non-conservative technical specification
NRC Administrative Letter 98-10, Dispositioning of Technical Specifications that are Insufficient
to Assure Plant Safety
NRC Inspection Manual, Part 9900: Technical Guidance, Operability Determinations and
Functionality Assessments for Resolution of Degraded or Nonconforming Conditions
Adverse to Quality or Safety, April 16, 2008
Technical Specification 3.8.3.F, Diesel Fuel Oil and Starting Air
Standing Order 06-04, Non-Conservative Technical Specification 3.8.3.F

Section 1R18: Plant Modifications

Procedures

2-AOP-RCP-1, Reactor Coolant Pump Malfunction, Rev. 10
2-ARP-SCF, Condensate and Boiler Feed, Rev. 42
EN-DC-136, Temporary Modifications, Rev. 5
EN-LI-100, Process Applicability Determination, Rev. 9

Condition Reports (CR-IP2-)

2010-04805 2010-04869

Work Orders

245127

Miscellaneous

EC-23681, Raise 21 RCP Bearing Temperature Alarm Setpoint from 185F to 190F and Manual Trip Setpoint from 200F to 205

Section 1R19: Post-Maintenance Testing

Procedures

0-MS-412, Inspection and Cleaning of Bus Bars, Contacts, Ground Connections, Wiring and Insulators, Rev. 1
 2-PT-M21A, Emergency Diesel Generator 21 Load Test, Rev. 19
 2-PT-M7, Analog Rod Position Functional, Rev. 30
 2-PT-W020, Electrical Verification – Inverters and DC Distribution in Modes 1 to 4, Rev. 2
 2-SOP-27.1.5, 480 Volt System, Rev. 39
 EN-LI-119, Apparent Cause Evaluation Process, Rev. 11

Completed Procedures

0-IC-SI-69, DAM502 Dual Alarm Module Replacement, Rev. 9, September 7, 2010
 0-PMP-409-CVCS, Replacement of Fluid Cylinder Valves – Union QX-300 Charging Pump, Rev. 2, July 21, 2010
 0-PMP-413-CVCS, Inspection/Replacement of Charging Pump Fluid Cylinder Stuffing Box Seals, Rev. 2, July 21, 2010
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Attachment

LIST OF ACRONYMS

2R19	Spring 2010 refueling outage
ACE	Apparent Cause Evaluation
ADAMS	Agency Wide Document Management System
AFW	Auxiliary Feedwater
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
CST	Condensate Storage Tank
EC	Engineering Change
EDG	Emergency Diesel Generator
EL	Emergency Light
EPRI	Electric Power Research Institute
FSAR	Final Safety Analysis Report
IMC	Inspection Manual Chapter
ISFSI	Independent Spent Fuel Storage Installation
LER	Licensee Event Report
MPC	Multipurpose Canister
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PFPP	Pre-Fire Plan
PI	Performance Indicator
PM	Preventive Maintenance
PMT	Post Maintenance Test
PTRG	Post-trip Review Group
QP	Augmented Quality
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RCE	Root Cause Evaluation
RPS	Reactor Protection System
RTB	Reactor Trip Breaker
SSC	Structures, Systems, and Components
ST	Surveillance Test
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order