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

May 3, 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 3 – NRC INTEGRATED INSPECTION REPORT 05000286/2012002

Dear Mr. Ventosa:

On March 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Indian Point Nuclear Generating Unit 3. The enclosed integrated inspection report documents the inspection results, which were discussed on April 26, 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), two NRC-identified findings of very low safety significance (Green), and one NRC-identified Severity Level IV finding. These findings were determined to involve violations of NRC requirements. 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 I; 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 3. 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 3.

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

/***RA***/

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

Docket No. 50-286
License No. DPR-26

Enclosure: Inspection Report 05000286/2012002
w/ Attachment: Supplementary Information

cc w/ encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-286
License No.:	DPR-26
Report No.:	05000286/2012002
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	Indian Point Nuclear Generating Unit 3
Location:	450 Broadway, GSB Buchanan, NY 10511-0249
Dates:	January 1, 2012, through March 31, 2012
Inspectors:	P. Cataldo, Senior Resident Inspector – Indian Point 3 M. Halter, Resident Inspector – Indian Point 3 S. Barr, Senior Emergency Preparedness Inspector – Region I J. Furia, Senior Health Physicist – Region I
Approved By:	Mel Gray, Chief Reactor Projects Branch 2 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000286/2012002; 1/1/12 – 3/31/12; Indian Point Nuclear Generating (Indian Point) Unit 3; Operability Determinations; Functionality Assessments and Problem Identification and Resolution.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by region inspectors. Inspectors identified one Severity Level IV NCV and three findings of very low safety significance (Green), 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

- SL IV. The inspectors identified a Severity Level IV, NCV of 10 CFR 50.73(a)(2)(vii), because Entergy personnel did not provide a written Licensee Event Report (LER) to the NRC within 60 days of identifying a single condition which caused two trains of auxiliary feedwater (AFW) to become inoperable.

  The safety-grade nitrogen backup to instrument air in the auxiliary boiler feed pump (ABFP) room is designed to provide 30 minutes of motive force to air operated AFW valves in the event that non-safety-related instrument air is lost. The discharge flow control valves (FCVs) for the ABFPs are designed to fail full open on a loss of all air pressure in order to ensure AFW is provided to the steam generators for decay heat removal. However, with the FCVs full open, the motors for 31 and 33 motor-driven ABFPs could reach an overcurrent condition, which, if coincident with degraded bus voltage, could cause the motor circuit breakers to trip open approximately 400 seconds from breaker amptector actuation. To protect the pump motor circuit breakers from possible trip while the nitrogen system is not available, and ensure AFW operability, a dedicated operator is required to be stationed locally to provide manual control of the FCVs if instrument air is lost. However, on October 11, 2011, Entergy personnel caused two trains of AFW to become inoperable for 45 minutes when they isolated the nitrogen backup system to instrument air during maintenance and did not station a dedicated operator as a compensatory measure. This issue was entered into Entergy's CAP as CR-IP3-2012-00394.

  This violation involved not making a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "Inaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined this violation is more than minor and is categorized as a Severity Level IV violation.

Because this violation involves the traditional enforcement process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation. (Section 1R15.1)

- Green. A self-revealing NCV of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified, because Entergy personnel did not ensure written maintenance instructions and an operating procedure were adequate, which resulted in damage to a safety-related relief valve in the nitrogen backup system to instrument air in the ABFP room and unavailability of the system while the valve was repaired. This issue was entered into Entergy's CAP as condition reports CR-IP3-2011-04651 and CR-IP3-2012-00819.

  The finding is more than minor because it is associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability and capability of systems that respond to initiating events to prevent undesirable consequences. 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 related to a design or qualification deficiency, did not represent a loss of safety system function and did not screen as potentially risk significant due to external initiating events.

  The inspectors determined that the finding had a cross-cutting aspect in the area of Human Performance, because Entergy personnel did not provide complete, accurate and up-to-date procedures and work packages. Specifically, the work instructions for the regulator maintenance and the operating procedure used to place the regulator back in service did not direct Entergy personnel to reduce the regulator setpoint prior to placing it in service. [H.2(c) per IMC 0310] (Section 1R15.2)

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy personnel did not ensure that the design basis for the nitrogen backup system to instrument air was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Entergy personnel did not ensure that information regarding the safety function of the nitrogen backup system to instrument air in the ABFP room and its relation to the operability of the AFW system was translated into operating procedures and licensing basis documents, which directly contributed to inadequate compensatory measures during corrective maintenance and resulted in two inoperable trains of AFW. This issue was entered into Entergy's CAP as condition reports CR-IP3-2011-4651 and CR-IP3-2012-00393.

  The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affects the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). 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 related to a design or qualification deficiency confirmed to result in a loss of operability of two trains of AFW; however, the finding did not represent a loss of safety system function because the turbine-driven ABFP was available and operable, and the motor-driven pumps remained functional, because off-site voltage was not degraded and the Instrument Air System was still

available during the short duration of AFW system inoperability. The finding also did not screen as potentially risk significant due to external initiating events. The finding does not have a cross-cutting aspect because the performance deficiency is not reflective of current performance. (Section 1R15.3)

- Green. The inspectors identified an NCV of very low safety significance, of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because Entergy personnel did not promptly identify and correct, a condition adverse to quality associated with degraded motor cutoff (MCO) switches utilized on Westinghouse DS-style 480 Volt breakers. In particular, the MCO switches were related to breakers that did not operate on February 18, 2004, for a breaker that was intended for use for MCC-36D and on November 11, 2010, for the 32 containment spray (CS) pump. The inspectors determined that Entergy did not identify, correct, and replace in a timely manner, degraded, original-style, Westinghouse MCO switches that exist in DS-style 480V breakers at Unit 3. These switches exhibited contact degradation and other internal failure mechanisms that resulted in intermittent operation, and caused safety-related breaker malfunctions. This inadequate evaluation of MCO switch failures and development of appropriate corrective actions resulted in the subsequent failure on August 19, 2011, of the 32 component cooling water (CCW) pump circuit breaker.

  Also, Technical Specification (TS) 3.6.6.A, requires that with one CS train inoperable, the train must be restored to operable with 72 hours, or if the required action and associated completion time are not met, be in Mode 3 within 6 hours and Mode 5 within 84 hours. Contrary to the above, between August 18, 2010 and November 12, 2010, the 32 CS pump was inoperable for approximately 86 days without the pump being returned to operable status, or the start of a reactor shutdown. Additionally, during this same period of inoperability, the redundant 31 CS pump was inoperable on October 17th and 25th, which is considered a TS-prohibited condition because TS 3.6.6.F, required immediate entry into TS 3.0.3 and subsequent shutdown to Mode 3 within 7 hours with two CS trains inoperable. Also, because during the same period of inoperability for the 32 CS pump in 2010, the 33 emergency diesel generator (EDG) was inoperable on September 14-15th, October 5-6th, and November 4th, actions to meet TS 3.8.1.b were not met, due to the inoperability of redundant components supported by the EDG, and therefore is also considered a TS-prohibited condition. Corrective actions included the LER submittal, performance of a higher-tier apparent cause evaluation to determine the cause of the breaker failures, revisions to applicable preventive maintenance procedures to ensure future breaker maintenance activities include (1) criteria for installation of new, enhanced motor cutoff switches, where applicable, and (2) expanded resistance checks are performed to verify switch reliability and satisfactory operation.

  The inspectors determined that not identifying and correcting a condition adverse to quality associated with the 32 CCW breaker failure to close on demand, in August 2011 was a performance deficiency. The inspectors concluded the problem was within Entergy's ability to foresee and correct. Specifically, available information from previous internal failures, external industry failures, and vendor information, should have been utilized to identify the deficient internal contacts of the "old-style" MCO switches and inform the identification and implementation of appropriate corrective actions following the 32 CS pump circuit breaker MCO switch malfunction in November 2010. The inspectors determined that if appropriate corrective actions had been identified and

implemented, they could have prevented the subsequent failure of the 480V breaker during the August 2011, Loss of 138kV off-site power event associated with the 32 CCW pump because of its MCO switch malfunction. This performance deficiency was more than minor in accordance with IMC-0612, because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected its objective of ensuring the availability, reliability, and operability of systems that respond to initiating events to prevent undesirable consequences. The intermittent failures of the MCO switches prevented successful breaker operation that impacted associated safety-related components utilized to mitigate design basis events. The finding was determined to be of very low safety significance (Green), following IMC-0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," and the resultant conclusion by the Region I Senior Reactor Analyst following performance of the Significance Determination Process (SDP) Phases 1, 2 and 3.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution associated with the attribute of Operating Experience, because Entergy personnel did not utilize available vendor, external and internal operating experience information to support plant safety, in that they did not identify and prioritize replacement of degraded MCO switches with the improved/enhanced switches that have been available since 2003. [P.2(b) per IMC 0310] (Section 4OA2.2)

REPORT DETAILS

Summary of Plant Status

Indian Point Unit 3 began the inspection period at 100 percent power. On February 29, 2012, operators reduced power to approximately 1 percent power to facilitate isolation of the unit auxiliary transformer (UAT) following discovery of increased combustible gas concentrations that warranted prompt removal of this transformer from operation. Operators returned the unit to 100 percent on March 02. 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

1R01 Adverse Weather Protection (71111.01 – 1 sample)

Impending Cold Weather Review

a. Inspection Scope

The inspectors performed a detailed review of Entergy procedures and actions to address an impending snowstorm forecasted for January 21, 2012. This review evaluated Entergy's preparation and readiness for the impending storm, including applicable compensatory measures, as well as inspector-conducted walkdowns of plant equipment and general plant areas. In addition, the inspectors reviewed the status of deficiencies identified during the current cold weather seasonal preparations and verified that adverse conditions were being adequately addressed to ensure the impending cold weather conditions would not have significant impact on plant operation and safety. The inspectors conducted the review to verify that the station's implementation of OAP-008, "Severe Weather Preparations," and OAP-048, "Seasonal Weather Preparation," appropriately maintained systems required for normal operation and safe shutdown conditions.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 32/33 EDGs during 31 EDG outage on January 06, 2012
- 31/33 service water (SW) pumps during 32 SW strainer maintenance on January 24-25, 2012

- 31/33 EDGs during 32 EDG outage on January 31, 2012
- 31/33 static inverter during 34 inverter maintenance on March 09, 2012

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 UFSAR, technical specifications, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also 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 corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q – 5 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 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 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.

- Fire zone (FZ)-1 on February 3, 2012
- FZ-2 on February 3, 2012
- FZ-1A on March 5, 2012
- FZ-2A on March 5, 2012
- FZ-8 on March 5, 2012

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Annual Review of Cables Located in Underground Bunkers/Manholes

a. Inspection 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 manholes 31A, 31B, 31C, and cable vault 34, which contain safety-related cables, 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.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q – 2 samples)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on January 24, 2012, which included a main generator trip without an automatic reactor trip, coincident with a loss of coolant accident and a main steam rupture without automatic safety injection actuation. 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 technical specification 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 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed and reviewed various activities conducted on Unit 3, including: dedicated operator for manual control of 34 feedwater regulating valve on January 17 and 18, 2012; operator observations during high integrated risk on February 1, 2012; Reactor Protection System testing on February 6, 2012; reduction in power to take the

turbine offline for UAT maintenance on February 29, 2012; and subsequent power ascension on March 1, 2012. Additionally, the inspectors observed surveillance test performances, observed procedure use and adherence, crew communications, and coordination of activities between work groups, to verify that established expectations and standards were met.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

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

- PCV-1190 CIV stroke time outside acceptance criteria, CR-IP3-00095, on January 6, 2012
- 118 VAC overall system evaluation, March 2012

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Entergy 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 staff performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and when necessary, 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.

- 3PT-Q87A, 3PT-Q92B, 13W92, and 32BATP on January 11, 2012
- Emergent risk due to solar flares on January 24–25, 2012
- 31 EDG, CH-FCV-110A, 31 instrument air dryer (IAD) on February 2, 2012
- 3-PT-M13A1, 3-PT-R103, Y88 and 345 KV bus section 5-6, 31 IAD on February 6, 2012
- 3-PT-M62A degraded voltage relay calibrations and off-site feeder 95332 calibrations on February 16, 2012

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 5 samples)

a. Inspection Scope

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

- AFW with nitrogen backup system isolated on October 11, 2011
- EDG Fuel Oil Storage Tanks on January 17, 2012
- Reactor coolant system (RCS) sample CIV SP-AOV-956E packing leak and corrosion, CR-IP3-2012-284, identified on January 26, 2012
- Station auxiliary transformer, CR-IP3-2012-00728 on March 04, 2012
- 34 static inverter past operability 12-752 on March 8, 2012 and 11-5506 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 technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Entergy's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Entergy. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

.1 An LER for a Single Cause of Two Auxiliary Boiler Feedwater Trains Inoperable was not Submitted when Required

Introduction: The inspectors identified a Severity Level IV, NCV of 10 CFR 50.73(a)(2)(vii), because Entergy personnel did not provide a written LER to the NRC within 60 days of identifying a single condition which caused two trains of AFW to become inoperable.

Description: On October 11, 2011, Entergy personnel performed preventative maintenance on IA-PCV-1276, one of two redundant supply pressure regulators in the nitrogen back-up system to instrument air in the ABFP room. Upon completion of the maintenance, and while operations personnel were placing the regulator back in service, the nitrogen back-up system relief valve lifted. The relief valve, RV-1284, was damaged during the lift and continued to leak by its seat. Entergy personnel isolated the nitrogen backup system from instrument air in preparation to remove the damaged relief valve and replace it with a new valve.

In follow-up discussions with Entergy staff regarding the nitrogen back-up system, the inspectors determined the safety-related nitrogen backup to instrument air in the ABFP room is designed to provide 30 minutes of motive force to air operated AFW valves in the event that non-safety-related instrument air is lost. The discharge FCVs for the ABFPs are designed to fail full open on a loss of all air pressure in order ensure AFW is provided to the steam generators for decay heat removal. However, with the FCVs full open, the motors for the 31 and 33 ABFPs could reach an overcurrent condition, which, if coincident with degraded bus voltage, could cause the motor circuit breakers to trip open approximately 400 seconds from bus breaker amptector actuation. To protect the pump motor circuit breakers from possible trip while the nitrogen system is unavailable, an operator is required to be stationed locally to provide manual control of the FCVs if instrument air is lost. Thus, a locally stationed, dedicated operator is required as a compensatory measure to ensure operability of the motor-driven ABFPs when the nitrogen backup to instrument air is unavailable. The turbine-driven ABFP is not vulnerable to runout under this condition because it has a mechanical governor which limits the speed of the pump if its FCVs fail full open.

The inspectors reviewed the operating logs and interviewed operators and noted that a dedicated operator was stationed in the ABFP room 45 minutes after the nitrogen backup system had been isolated. The inspectors questioned the past operability of the motor-driven ABFPs during the time period when the nitrogen backup system was isolated without an operator stationed. On October 12, 2011, a formal operability evaluation performed by Entergy personnel concluded that the AFW trains were “operable–compensatory measure” while the nitrogen system was isolated; the motor-driven AFW trains were operable only if compensatory measures were put in place – in the form of a dedicated and trained operator – to prevent the motor-driven pump circuit breakers from potentially tripping due to amptector actuation in the event of a loss of instrument air. The past operability and reportability review performed by Entergy personnel concluded that the event was not reportable because the system had not lost

the ability to provide its safety function, because the turbine-driven ABFP had been operable and capable of providing AFW injection flow to the steam generators.

The inspectors determined that the two motor-driven ABFPs were inoperable for a period that was within the applicable Technical Specification action statement. However the event met the criteria for reporting under 10 CFR 50.73(a)(2)(vii), in that the single condition involved with isolating the nitrogen backup system caused two trains of AFW to become inoperable. Additionally, the inspectors determined that the "operable-compensatory measures" conclusion made through the formal operability evaluation process could have been used by Entergy personnel to correctly assess the past operability of the motor-driven pumps and the reportability of the issue. Although Entergy personnel had performed a past operability and reportability review, their review was not thorough and complete. Until prompted by the NRC inspectors, Entergy personnel did not evaluate all of the reportability criteria and thus did not identify the requirement to submit a 60-day report in accordance with 10 CFR 50.73(a)(2)(vii). Entergy's completed corrective actions include the initiation of CR-IP3-2012-00394, completion of an apparent cause evaluation, and the submittal of a licensee event report to the NRC.

Analysis: The inspectors determined there was a performance deficiency because Entergy did not provide a 60-day LER, as required by 10 CFR 50.73(a)(2)(vii). This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Section 6.9, "Inaccurate and Incomplete Information or Failure to Make a Required Report," example (d)(9), which states "A licensee fails to make a report required by 10 CFR 50.72 or 10 CFR 50.73," the NRC determined this violation is more than minor and is categorized as a Severity Level IV violation.

Because this violation involves the traditional enforcement process with no underlying technical violation that would be considered more than minor in accordance with IMC 0612, a cross-cutting aspect is not assigned to this violation.

Enforcement: 10 CFR 50.73 (a)(2)(vii) requires, in part, that licensees submit a LER for any event where a single cause or condition caused two independent trains to become inoperable in a single system designed to remove residual heat, within 60 days of discovering the event. Contrary to the above, Entergy failed to submit a report within 60 days of October 12, 2011, when Entergy personnel concluded, through a formal operability evaluation, that compensatory measures were required to maintain operability of the motor-driven ABFPs while the nitrogen backup system was isolated. Because this violation was of very low safety significance and was entered into Entergy's corrective action program, this violation is being treated as an NCV, consistent with section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000286/2012002-01, An LER For a Single Cause of Two Auxiliary Boiler Feedwater Trains Inoperable was not Submitted When Required.)**

.2 Inadequate Procedure and Instructions for Placing Pressure Regulator in Service

Introduction: A self-revealing NCV of very low safety significance (Green) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified because Entergy personnel did not ensure written maintenance instructions and an operating procedure were adequate, which resulted in damage to a safety-related relief valve in the nitrogen backup system to instrument air in the ABFP room and unavailability of the system while the valve was repaired.

Description: On October 11, 2011, Entergy personnel performed a preventive maintenance overhaul on IA-PCV-1276, which is one of two redundant supply pressure regulators in the nitrogen back-up system to instrument air in the ABFP room. Upon completion of the maintenance, and in the course of placing the regulator back in service, operations personnel raised the regulator set pressure to the set point of the relief valve in the nitrogen backup system. The relief valve lifted and chattered, damaging the disc and seat, and resulted in continual leakage through the relief valve. Entergy personnel isolated the nitrogen backup system from the instrument air system, removed the damaged relief valve and replaced it with a new valve. The nitrogen backup system was not available for approximately two days while the damaged relief valve was replaced. The safety-related nitrogen backup to instrument air in the ABFP room is designed to provide 30 minutes of motive force to air operated AFW valves in the event that non-safety-related instrument air is lost.

Entergy personnel performed an apparent cause evaluation and determined the cause for the relief valve lift was inadequate work instructions used by maintenance personnel. Specifically, there was no guidance to reduce the setpoint of the regulator after the overhaul and prior to placing it back in service. The inspectors reviewed the vendor manual for the regulator and noted that the vendor-provided guidance required users to reduce the regulator setpoint prior to placing the regulator back in service, yet the work instructions for the regulator overhaul did not include this guidance. The inspectors determined that development of the work instructions in 2010 had been an opportunity for Entergy personnel to develop adequate written guidance to prevent the relief valve lift. In addition, the inspectors noted that the operating procedure used by operations personnel to place the regulator in service following the overhaul, also did not include the vendor guidance. The inspectors determined that the procedure, 3-SOP-AFW-001, "Auxiliary Feedwater System Operation," which had been reviewed and revised in August 2011, was a second opportunity for Entergy personnel to provide adequate instructions to reduce the setpoint of the regulator prior to placing it in service, and prevent the relief valve from lifting.

Entergy staff entered this issue into their Corrective Action Program as CR-IP3-2011-04651 and CR-IP3-2012-00819. Completed corrective actions included performing an apparent cause evaluation and revision of the preventative maintenance work instructions to incorporate vendor guidance to reduce the setpoint of the regulator following maintenance. Planned corrective actions include the revision of the operating procedure to incorporate vendor guidance to reduce the setpoint of the regulator prior to placing the regulator in service.

Analysis: The inspectors determined there was a performance deficiency because Entergy did not provide adequate written guidance to reduce the safety-related nitrogen backup system regulator setpoint after maintenance and prior to placing the regulator in service. The inspectors determined the finding is more than minor because it is associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the maintenance work instructions and operating procedure did not provide guidance to Entergy personnel to reduce the setpoint of the regulator prior to placing it back in service, which resulted in damage to the relief valve and unavailability of the system to provide safety-related backup nitrogen to the AFW valves during the period of time when the relief valve was replaced. 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 related to a design or qualification deficiency, did not represent a loss of safety system function and did not screen as potentially risk significant due to external initiating events.

The inspectors determined that the finding had a cross cutting aspect in the area of Human Performance because Entergy personnel did not provide complete, accurate and up-to-date procedures and work packages. Specifically, the work instructions for the regulator maintenance and the operating procedure used to place the regulator back in service did not direct Entergy personnel to reduce the regulator setpoint prior to placing it in service. [H.2(c) 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 instructions and procedures of a type appropriate to the circumstances. Contrary to the above, between November 2010 and October 11, 2011, Entergy personnel did not incorporate adequate written guidance for restoration of the nitrogen backup system pressure regulator, which resulted in damage to the safety-related nitrogen backup system relief valve and unavailability of the system, while the valve was being replaced. Because this violation was of very low safety significance and was entered into Entergy's corrective action program, this violation is being treated as an NCV, consistent with section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000286/2012002-02, Inadequate Procedure and Instructions for Placing Pressure Regulator in Service.)**

.3 Operating Procedures and Licensing Basis Documents were not Updated with Nitrogen Backup System Design and Support Function for AFW System Operability)

Introduction: The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy personnel did not ensure that the design basis for the nitrogen backup system to instrument air was correctly translated into specifications, drawings, procedures, and instructions. Specifically, Entergy personnel did not ensure that information regarding the safety function of the nitrogen backup system to instrument air in the ABFP room and its relation to the operability of the AFW system was translated into operating procedures and licensing basis documents, which directly contributed to the licensee's failure to implement adequate compensatory measures during corrective maintenance and resulted in two inoperable trains of AFW.

Description: On October 11, 2011, Entergy personnel performed preventive maintenance on IA-PCV-1276, one of two redundant supply pressure regulators in the nitrogen backup system to instrument air in the ABFP room. After completion of the maintenance and while operations personnel were placing the regulator back in service, the nitrogen backup system relief valve lifted. The relief valve, RV-1284, was damaged during the lift and continued to leak by its seat. Entergy personnel prepared a work order and tagout, and at approximately 5:45 p.m., they isolated the nitrogen backup system from instrument air and commenced corrective maintenance to replace the damaged relief valve.

At 6:30 p.m., a dedicated operator was stationed in the ABFP room, as a compensatory measure, to provide manual operation of the discharge FCVs for the ABFPs in the event of a loss of instrument air. The safety-grade nitrogen backup to instrument air in the ABFP room is designed to provide 30 minutes of motive force to air operated AFW valves in the event that non-safety related instrument air is lost. The inspectors reviewed the UFSAR, the TS Bases, the Technical Requirements Manual (TRM), the design basis documents for instrument air and AFW, and 3-SOP-AFW-001, "Auxiliary Feedwater System Operation," but did not find information regarding the requirement to station an operator in the ABFP room as a compensatory measure while the nitrogen backup system was unavailable. The inspectors also questioned why Entergy personnel had waited nearly an hour after isolating the nitrogen backup system prior to stationing a dedicated operator in the ABFP room.

During review of the operability evaluation, completed on October 12, 2011, and following discussions interviews with operators, the inspectors noted that Unit 3 had previous operating experience utilizing the nitrogen backup system on a loss of instrument air. During the August 2003 northeastern United States blackout event, instrument air was unavailable due to the loss of offsite power and the nitrogen backup system did not provide motive force to the AFW valves for the expected duration. Subsequent investigation revealed that the pressure regulator in the system was undersized, as described in CR-IP3-2003-4717. A modification was planned and implemented which increased the capacity of the regulator and also installed a redundant, identical regulator into the system. The operability evaluation completed at the time of the event included detailed information regarding the potential adverse impact to the motor-driven ABFPs when air pressure is lost to the FCVs. Specifically, the document described that the FCVs fail full open on a loss of air pressure in order to ensure AFW is provided to the steam generators for decay heat removal. However, with the FCVs full open, the motors for the 31 and 33 ABFPs can reach an over-current condition, which, if coincident with degraded bus voltage, could cause the breakers to trip open approximately 400 seconds from amptector actuation. To protect the pump motor circuit breakers from possible trip while the nitrogen backup system is unavailable, an operator is to be stationed locally to provide manual control of the FCVs if instrument air is lost. The inspectors noted that at the time of the modification, Entergy personnel reviewed the need to update various operating procedures, design and licensing basis documents, and system description documents, but the documents were not updated with the information regarding how the nitrogen backup system supported the operability of the ABFPs. Additionally, corrective action (CA) 11 under CR-IP3-2003-04717 directed Entergy personnel to review and determine whether any additional guidance, in the form of procedure changes or specification of operating limits, needed to be

established for the nitrogen backup system to support adequate future operability evaluations. The inspectors noted that this CA was closed without the actions completed.

On October 12, 2011, the third revision of the operability evaluation performed by Entergy personnel documented that the AFW system was "operable – compensatory measures" while the nitrogen system was isolated; the motor-driven AFW trains were operable only if compensatory measures, in the form of a dedicated and trained operator, were put in place to prevent the motor-driven pump circuit breakers from tripping open in the event of a loss of instrument air. Upon further review, the inspectors concluded that the two motor-driven ABFPs had been inoperable during the time period that the nitrogen was isolated and operators were not stationed as a compensatory measure. The inspectors further determined that the Technical Specification action statement for two inoperable trains (TS 3.7.5 Condition C), which requires the plant to be placed in Mode 3 within six hours and in Mode 4 within 18 hours, was met because the condition existed for less than one hour.

The inspectors determined that the operating experience gained during the 2003 blackout event was an opportunity for Entergy personnel to update their operating procedures, and licensing and design basis documents to provide adequate and readily available information for operators. The inspectors further determined that had Entergy personnel completed CA 11 of CR-IP3-2003-4717 and provided written guidance on the nitrogen backup system during the process of modifying the nitrogen backup system in 2004, operators would have been better informed on October 11, 2011, of the compensatory measures required to ensure operability of the AFW system. The inspectors concluded that with adequate written guidance, specifically within the TS Bases and the predecessor to Procedure 3-SOP-AFW-001, "Auxiliary Feedwater System Operation," which was in place at the time of the modification, Entergy personnel would have been alerted to the requirement to station an operator in the ABFP room prior to isolating the nitrogen backup system for corrective maintenance to maintain the motor-driven ABFP operable.

Entergy personnel entered this issue into the corrective action program as CR-IP3-2012-00393. Planned corrective actions include preparing and implementing updates to the FSAR, TS Bases, TRM, Operating Procedures, operator training documents, and design basis documents for both Unit 2 and Unit 3 with information regarding the need to immediately station an operator upon the loss of, or prior to maintenance on, the nitrogen backup to instrument air in the ABFP room to maintain AFW system operability.

Analysis: The inspectors determined there was a performance deficiency because Entergy personnel did not establish measures to assure that the design basis for the nitrogen backup system was correctly translated into specifications, drawings, procedures, and instructions. The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems cornerstone and adversely affects the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). 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 related to a design or qualification deficiency confirmed to result in a loss of operability of two trains

of AFW; however, the finding did not represent a loss of safety system function because the turbine-driven ABFP was available and operable, and the motor-driven pumps remained functional, because off-site voltage was not degraded and the Instrument Air System was still available during the short duration of AFW system inoperability. The finding also did not screen as potentially risk significant due to external initiating events.

The inspectors did not identify a cross-cutting aspect with this finding because the performance deficiency is not reflective of current performance. Specifically, the inspectors determined that Entergy did not update their operating procedures and licensing basis documents in 2004, following the modification to the nitrogen backup system.

Enforcement: 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to ensure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, between February 2004 and October 2011, Entergy did not correctly translate design and safety function information for the nitrogen backup system to instrument air in the ABFP room, as well as the system's support function for AFW operability, into operating procedures and licensing basis documents. Because this finding was of very low safety significance, and was entered into Entergy's corrective action program as CR-IP3-2012-00393, this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000286/2012002-03, Operating Procedures and Licensing Basis Documents were not Updated with Nitrogen Backup System Design and Support Function for AFW System Operability).**

1R18 Plant Modifications (71111.18 – 2 samples)

.1 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.

- EC-33921, Temporary Setpoint Change of RCP-32 Horizontal Frame Vibration Alert Level, on February 7, 2012

b. Findings

No findings were identified.

.2 Permanent Modification

a. Inspection Scope

The inspectors evaluated EC-35242, Plant Operation with UAT Unavailable, on March 1, 2012. The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed expected electrical loading on the station auxiliary transformer, including the additional loads from the UAT, to confirm that the electrical loading on the SAT during normal plant operation was within its design rating. The inspectors also reviewed revisions to operating procedures and interviewed engineering and operations personnel to ensure the procedures could be reasonably performed.

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 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.

- 31 static inverter on November 2, 2011
- 32 emergency diesel generator relay replacement on February 1, 2012
- 35 service water pump and strainer, following maintenance on January 7, 2012
- 34 SG level controller LC-447M on January 18, 2012
- 32 CHP following maintenance on March 6 and 7, 2012
- 34 static inverter on March 9, 2012

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)

a. Inspection Scope

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

- 3-PT-OL3B18 on January 5, 2012
- 3-PT-Q116B (inservice test) on January 6, 2012
- 3-PT-Q092B on January 11, 2012
- 3-PT-M13A1 on February 6, 2012
- 3-PT-V2 on February 29, 2012
- 0-SOP-LEAKRATE-001 (RCS) on March 11, 2012

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04 – 1 sample)

a. Inspection Scope

The Nuclear Security and Incident Response staff at NRC headquarters performed an in-office review of Indian Point Energy Center Emergency Plan Revision 12 located under ADAMS accession number ML12017A204 as listed in the Attachment.

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

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 1 sample)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for Unit 3 licensed operators on January 24, 2012, which required emergency plan implementation by an operations crew. Entergy planned for this evolution to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that Entergy evaluators noted the same issues and entered them into the corrective action program.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational/Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

The inspectors selected radiologically risk-significant work activities that involved exposure to radiation. The inspectors verified that appropriate pre-work surveys were performed which were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspectors evaluated the radiological survey program to determine if hazards were properly identified, including the following: identification of hot particles; the presence of alpha emitters; the potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials; the hazards associated with work activities that could suddenly and severely increase radiological conditions; and, severe radiation field dose gradients that can result in non-uniform exposures of the body.

During tours of the facility and review of ongoing work the inspectors evaluated ambient radiological conditions. The inspectors verified that existing conditions were consistent with posted surveys, radiation work permits (RWPs), and worker briefings, as applicable.

During job performance observations, the inspectors verified the adequacy of radiological controls, such as required surveys, radiation protection job coverage, and

contamination controls. The inspectors evaluated Entergy's means of using electronic personnel dosimeters (EPDs) in high noise areas as HRA monitoring devices.

The inspectors verified that radiation monitoring devices were placed on the individual's body consistent with the method that the licensee was employing to monitor dose from external radiation sources. The inspectors verified that the dosimeter was placed in the location of highest expected dose or that Entergy personnel were properly employing an NRC-approved method of determining effective dose equivalent.

During job performance observations, the inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors determined that workers were aware of the significant radiological conditions in their workplace and the RWP controls/limits in place and that their performance reflected the level of radiological hazards present.

During job performance observations, the inspectors observed the performance of the radiation protection technician with respect to radiation protection work requirements. The inspectors determined that technicians were aware of the radiological conditions in their workplace and the RWP controls/limits and that their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspectors reviewed RWPs used to access high radiation areas and identify what work control instructions or control barriers had been specified. The inspectors verified that allowable stay times or permissible dose for radiologically significant work under each RWP was clearly identified. The inspectors verified that EPDs alarm set points were in conformance with survey indications and plant policy.

b. Findings

No findings were identified.

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

The inspectors obtained from the Entergy Staff a list of work activities ranked by actual or estimated exposure that were in progress during the Unit 2 refueling outage (2R20), and select work activities of the highest exposure significance (reactor disassembly/reassembly; scaffolding; valves; and, reactor coolant pumps).

The inspectors reviewed the as low as is reasonably achievable (ALARA) work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspectors determined that the licensee had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

The inspectors verified that Entergy Staff's planning identified appropriate dose mitigation features; considered, commensurate with the risk of the work activity, alternate mitigation features; and defined reasonable dose goals. The inspectors

verified that Entergy's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and or heat stress mitigation equipment. The inspectors determined that Entergy Staff's work planning considered the use of remote technologies as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors verified the integration of ALARA requirements into work procedure and RWP documents.

The inspectors compared the results achieved with the intended dose established in Entergy's ALARA planning for these work activities. The inspectors compared the person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements, and evaluated the accuracy of these time estimates. The inspectors determined the reasons for any inconsistencies between intended and actual work activity doses. The inspectors focused on those work activities with planned or accrued exposure greater than 5 person-rem (radiation protection support; scaffold building and inspections; outage valve work; and, reactor disassembly/reassembly).

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

The inspectors evaluated Entergy's method of adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered. The inspectors determined that adjustments to exposure estimates were based on sound radiation protection and ALARA principles or that they were adjusted to account for failures to control the work. The inspectors determined whether the frequency of these adjustments call into question the adequacy of the original ALARA planning process.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 – 3 samples)

a. Inspection Scope

The inspectors sampled Entergy's submittals for the below listed performance indicators (PIs) for Unit 3 for the period of January 1, 2011, through December 31, 2011. To determine the accuracy of the PI data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 10 CFR 50.73." As applicable, the inspectors reviewed Entergy's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

- Unplanned Scrams per 7000 Critical Hours (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 1 sample)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, “Problem Identification and Resolution,” the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Entergy entered issues into the corrective action program 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 corrective action program and periodically attended condition report screening meetings.

b. Findings

No findings were identified.

.2 Inadequate Corrective Actions Associated with Degraded Motor Cutoff Switches on 480 Volt Breakers.

Introduction: The inspectors identified a non-cited violation, of very low safety significance (Green), of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because Entergy personnel did not promptly identify and correct, a condition adverse to quality associated with degraded MCO switches utilized in Westinghouse DS-style 480 Volt breakers.

Description: In August 2011, during a loss of 138kV off-site power event, the 32 CCW pump did not start, as expected. Entergy staff determined the problem was caused by closing springs not being charged for this Westinghouse DS-style breaker, which prevented the breaker from closing on-demand. During subsequent troubleshooting, Entergy identified the MCO switch, for this breaker, exhibited an open circuit (high contact resistance) associated with the contacts that energize the spring charging motor. During this troubleshooting, the MCO switch also exhibited intermittent operation, as evidenced by the open circuit clearing, after manual manipulation of the MCO switch plunger. Entergy staff determined the breaker was last cycled following a successful 4-year preventive maintenance (PM) activity in June 2011, and that the closing springs were most likely uncharged for approximately 50 days. The inspectors noted the PM activity that preceded the failure, utilized enhanced resistance checks instituted following

the failure of a similar DS-style breaker associated with the 32 CS pump in November 2010. The enhanced resistance checks were intended to detect intermittent contact resistance problems. Entergy staff performed extent-of-condition evaluations for several breakers, performed an apparent cause evaluation, and further revised the 480V DS-breaker PM procedure. However, as an additional corrective action, prompted by inspector questions, Entergy implemented additional controls to ensure enhanced versions of the MCO switches will be installed to replace "old-style" switches on a prioritized schedule based on the safety function of these breakers. Additionally, in response to inspector questions, Entergy staff instituted an interim action to perform visual checks of affected breakers to verify closing springs are in the appropriate condition, until the MCO switches are replaced with an enhanced version.

The inspectors reviewed Entergy's CAP database regarding MCO switch issues, as well as applicable PM procedures and templates, vendor manuals, industry maintenance guidelines, external operating experience databases The inspectors determined that MCO switch problems had previously occurred in 2004 for a motor control center breaker and in 2010 for the 32 CS pump. Following the failure of the 32 CCW pump circuit breaker in August 2011, Entergy staff evaluated the issue under CR-IP3-2011-4042.

The inspectors reviewed this evaluation and concluded there were missed opportunities by Entergy personnel to identify and correct problems with MCO switches that exhibited intermittent or high contact resistances. Specifically, the inspectors determined the 2004, 2010 and 2011 breaker issues shared similar, MCO switch failure mechanisms, i.e., the internal contacts did not provide appropriate continuity to perform their specific function to energize the spring charging motor or enable the breaker closing circuit. Additionally, the inspectors identified operating experience where similar MCO problems were described in available industry databases. The inspectors noted this industry information contained references to systematic replacement of switches, the use of enhanced MCO switches, and other corrective actions that were not considered by IP3 staff during the development of corrective actions. The inspectors noted the Entergy CAP procedure states that corrective actions be timely, specific, and consider operating experience where appropriate.

The inspectors concluded that available information from previous IP3 breaker failures, external industry information, and vendor information, should have been utilized to identify the deficient internal contacts of the "old-style" MCO switches and provide for timely corrective actions following the 32 CS pump circuit breaker MCO switch malfunction in November 2010, to prevent the failure in 2011 associated with the 32 CCW pump circuit breaker. Additionally, considering the intermittent nature of the problem and that PM actions had not been effective, the inspectors concluded the evaluation of this problem should have reasonably resulted in the identification of interim corrective actions consistent with the CAP procedure guidance. In response to inspector questions, Entergy staff implemented interim corrective actions to verify the breaker closing springs are in the appropriate condition after actuation, until the "old-style" MCO switches are replaced.

Analysis: The inspectors determined that not identifying and correcting a condition adverse to quality associated with the 32 CCW circuit breaker failure to close on demand

in August 2011 was a performance deficiency. The inspectors concluded the problem was within Entergy's ability to foresee and correct. Specifically, available information from previous internal failures, external industry failures, and vendor information, should have been utilized to identify the deficient internal contacts of the "old-style" MCO switches and inform the identification and implementation of appropriate corrective actions following the 32 CS pump circuit breaker MCO switch malfunction in November 2010. The inspectors determined that if appropriate corrective actions had been identified and implemented, they could have prevented the subsequent failure of the 480V breaker during the August 2011, Loss of 138kV off-site power event associated with the 32 CCW pump because of its MCO switch malfunction. This performance deficiency was more than minor in accordance with IMC-0612, because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected its objective of ensuring the availability, reliability, and operability of systems that respond to initiating events to prevent undesirable consequences. The intermittent failures of the MCO switches prevented successful breaker operation that impacted associated safety-related components utilized to mitigate design basis events. The finding was determined to be of very low safety significance in accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations" (IMC 0609A) using significance determination process (SDP) Phases 1, 2 and 3. Phase 1 screened the finding to Phase 2 because the inspectors concluded that the finding contributed to both the likelihood of a reactor trip and the likelihood that mitigating systems would not have been available. This conclusion was based upon the increased chance of a loss of component cooling water (LOCCW) and the loss of redundancy in the CCW system given the assumed inability to start the 32 CCW pump over the assumed 50 day exposure period. The Phase 3 analysis was required because the IP3 Pre-solved Risk-Informed Inspection Notebook does not address the loss of one CCW pump.

An SRA conducted the Phase 3 evaluation, using the internal initiating event portion of the IP3 SPAR model revision 8.15, estimating an increase in core damage frequency (ΔCDF) in the high-E-8 per year range, assuming that the 32 CCW would not start from its normal 480V switchgear for the 50 day exposure period. The ΔCDF result is less than 1E-6 which indicates the finding is of very low safety significance (Green). The analysis included the following SPAR model changes and assumptions:

- Several changes were made to the base IP3 SPAR model, listed by overall importance:

    - The success criteria for the number of CCW pumps was changed from two of three to one of three – this was based on inspector review of licensee information on system flow requirements. The impact of this change was to not require the isolation of CCW flow to the letdown heat exchanger (non-regenerative), if only one CCW pump remained available.

    - The assumed portion of a year that one of the three charging pumps runs was changed from two thirds to one third of a year, to reflect actual system operation.

- The CCW pump common cause failure to start alpha factors were revised to the more recent 2010 data (CCF CCW motor drive pump FS), α1 = 0.99. α2 = 7.55E-3, α3 = 2.4E-3.
- The loss of reactor coolant pump (RCP) seal cooling fault tree was revised to only postulate an RCP seal failure due to motor vibration, caused by loss of CCW cooling to the motor, for non-loss of offsite power situations, because a loss of offsite power would cause a reactor trip and the RCPs to de-energize.

- Over the 50 day analysis exposure period:

  - 31 and 33 CCW pumps operating, 32 CCW pump in standby.
  - 32 CCW pump would fail to starts CCW-MDP-FS-PM32 probability of failure taken from 2E-3 per demand to 1.0 per demand.
  - Loss of CCW initiating event frequency (IE-LOCCW) in the SPAR model includes losses of CCW caused by equipment failure and by CCW piping failure. The chance of CCW piping failure (CCW-PIPE-FAIL) is a fraction of the total and was initially set at 90.8% of the 4E-4 per year frequency, meaning that equipment failure is assumed to be 9.2% of the total. This distinction is important because in the case of a CCW pipe failure other mitigation equipment is assumed to fail due to flooding. The inability of the #32 CCW pump circuit breaker to close only increases the chance of the equipment failure portion, not the pipe failure portion. The SRA used Entergy Staff provided initiating event tree data indicating a factor of 23 increase in the equipment failure portion, if the 32 CCW pump failed to start. Overall, the new LOCCW frequency was calculated, 4 E-4 * (0.092) * 23 + 4E-4 *(0.908) = 1.26 E-3 per year, including both equipment and pipe failures. Also the new value of CCW-PIPE-FAIL is 4E-4 * (0.908)/ 1.26E-3 = 29%, down from the 90.8%.

The SRA noted that this estimated ΔCDF was conservatively high, given the possibility that operators could, by procedure, manually charge the CCW pump circuit breaker operating spring and locally close the circuit breaker. The dominant core damage sequence was a loss of offsite power followed by a loss of RCP seal cooling and inability to remove decay heat with the residual heat removal and the low pressure recirculation systems.

These findings have a cross-cutting aspect in the area of Problem Identification and Resolution associated with the attribute of Operating Experience, because Entergy personnel did not utilize available vendor, external and internal operating experience information to support plant safety, in that they did not identify and prioritize replacement of degraded MCO switches with the improved/enhanced switches that have been available since 2003. [P.2(b) per IMC 0310]

Enforcement: The inspectors identified a non-cited violation, of very low safety significance (Green), of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," because Entergy personnel did not promptly identify and correct a condition adverse to quality associated with degraded MCO switches utilized on Westinghouse DS-style 480 Volt breakers. In particular, the MCO switches were related to breakers that did not

operate on February 18, 2004, for a breaker that was intended for use for MCC-36D and on November 11, 2010, for the 32 CS pump. The inspectors determined that Entergy did not identify, correct, and replace in a timely manner, degraded, original-style, Westinghouse MCO switches that exist in DS-style 480V breakers at Unit 3. These switches exhibited contact degradation and other internal failure mechanisms that resulted in intermittent operation, and caused safety-related breaker malfunctions. This inadequate evaluation of MCO switch failures and development of appropriate corrective actions resulted in the subsequent failure on August 19, 2011, of the 32 CCW pump circuit breaker.

Also, Technical Specification (TS) 3.6.6.A, requires that with one CS train inoperable, the train must be restored to operable with 72 hours, or if the required action and associated completion time are not met, be in Mode 3 within 6 hours and Mode 5 within 84 hours. Contrary to the above, between August 18, 2010 and November 12, 2010, the 32 CS pump was inoperable for approximately 86 days without the pump being returned to operable status, or the start of a reactor shutdown. Additionally, during this same period of inoperability, the redundant 31 CS pump was inoperable on October 17th and 25th, which is considered a TS-prohibited condition because TS 3.6.6.F, required immediate entry into TS 3.0.3 and subsequent shutdown to Mode 3 within 7 hours with two CS trains inoperable. Also, because during the same period of inoperability for the 32 CS pump in 2010, the 33 emergency diesel generator (EDG) was inoperable on September 14-15th, October 5-6th, and November 4th, actions to meet TS 3.8.1.b were not met, due to the inoperability of redundant components supported by the EDG, and therefore is also considered a TS-prohibited condition. Corrective actions included the LER submittal, performance of a higher-tier apparent cause evaluation to determine the cause of the breaker failures, revisions to applicable preventive maintenance procedures to ensure future breaker maintenance activities include (1) criteria for installation of new, enhanced motor cutoff switches, where applicable, and (2) expanded resistance checks are performed to verify switch reliability and satisfactory operation.

Because this issue was determined to be of very low safety significance, and was entered into Entergy's corrective action program for resolution under CR-IP3-2010-529 and CR-2011-IP3-4042, this violation is being treated as a NCV in accordance with NRC Enforcement Policy. **NCV 05000286/2012-002-04, Inadequate Corrective Actions Associated with Degraded Motor Cutoff Switches on 480 Volt Breakers.**

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 2 samples)

.1 Plant Events

a. Inspection Scope

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

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

- Secondary Plant Shutdown from 100 percent to 1 percent on February 29, 2012, due to Unit Auxiliary Transformer increase in combustible gas concentrations

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000286/2011-001-00: Technical Specification Prohibited Condition Caused by an Inoperable 32 Containment Spray Pump Due to High Contact Resistance in the Supply Breaker Closing Circuit

On November 12, 2010, during surveillance testing of the 32 CS Pump, the pump failed-to-start, because the Westinghouse DS-style 480 Volt breaker did not close, as required. An apparent cause, performed under condition report CR-IP3-2010-03523, which included information from a Westinghouse failure analysis, identified that significant oxidation, as well as intermittent operation and high resistance values were identified on contacts of a motor cutoff switch that are necessary to enable the closing circuit and allow for breaker closure. The motor cutoff switch was replaced, and surveillance testing was performed successfully. Entergy's corrective actions included enhancements to the preventive maintenance procedure, i.e. additional resistance checks and reduced acceptance criteria to ensure the intermittent switch problem would be mitigated. The resultant evaluation under CR-3523, also identified periods of technical specification non-compliance, during the approximately 86 days the pump was considered inoperable, and unable to perform its safety function. The enforcement aspects are discussed and documented in Section 4OA2.2. The inspectors did not identify any new findings during the review of this LER. This LER is closed.

4OA6 Meetings, Including Exit

On April 26, 2012, 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.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

J. Ventosa, Site Vice President
L. Coyle, General Manager, Plant Operations
V. Andreozzi, Systems Engineering Supervisor
R. Burroni, Systems Engineering Manager
D. Buyes, Supervisor, FIN
T. Chan, Systems Engineering Supervisor
G. Dahl, Licensing Specialist
R. Daley, System Engineer
M. Dechristopher, Engineering
J. Dinelli, Site Operations Manager
R. Drake, Engineering
M. Dreis, System Engineer
D. Gaynor, Senior Risk Analyst
M. Lewis, Unit 3 Assistant Operations Manager
S. Manzione, Supervisor, Component Engineering
L. Lubrano, System Engineering
B. Rokes, Licensing Specialist
B. Sullivan, Training Superintendent
R. Tagliamonte, Radiation Protection Manager
M. Tesoriero, Programs and Components Engineering Manager
B. Walpole, Licensing Manager
W. Wittich, Engineering

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened/Closed

05000286/2012-002-01	NCV	Failed to Submit an LER for a Single Cause of Two Auxiliary Boiler Feedwater Trains Inoperable (Section 1R15)
05000286/2012-002-02	NCV	Inadequate Procedure and Instructions for Placing Pressure Regulator in Service (Section 1R15)
05000286/2012-002-03	NCV	Failed to Update Operating Procedures and Licensing Basis Documents with Nitrogen Backup System Design and Support Function for AFW System Operability (Section 1R15)
05000286/2012-002-04	NCV	Inadequate Corrective Actions Associated with Degraded Motor Cutoff Switches on 480 Volt Breakers (Section 4OA2)

Closed

05000286/2011-001-00	LER	Technical Specification Prohibited Condition Caused by an Inoperable 32 Containment Spray Pump Due to High Contact Resistance in the Supply Breaker Closing Circuit

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
OAP-008, Severe Weather Preparations, Revisions 10
OAP-048, Seasonal Weather Preparation, Revision 8

Section 1R04: Equipment Alignment

Procedures
3-COL-EL-005, Diesel Generators, Revision 36
3-COL-RW-2, Service Water System, Revision 44
3-COL-RW-2A, Service Water Header Realignment, Revision 12
3-COL-RW-3, Intake Structure, Revision 14
3-SOP-EL-002, Instrument Bus and Plant Computer Static Inverter Operation, Revision 33

Condition Reports (CR-IP3-)
2012-00070

Maintenance Orders/Work Orders
WR-260047

Miscellaneous
Operations Tagout 3C16-1-05824

Section 1R05: Fire Protection

Procedures
IP3-ANAL-FP-02143, Fire Hazards Analysis (FHA) Report, Revision 4
SMM-DC-901, IPEC Fire Protection Program Plan, Revision 8
IP3-DBD-321, Design Basis Document for Fire Protection System, Revision 4
3-PT-SA-13, Fire Protection System Smoke Detector Test, Revision 15
PFP-306A, Component Cooling Pumps – Primary Auxiliary Building, Revision 0
PFP-306B, Containment Spray Pumps-Primary Auxiliary Building, Revision 5
PFP-307, Primary Auxiliary Building – General Floor Plan – Elev. 55'-0", Revision 12

Condition Reports (CR-IP3-)
2012-00734

Maintenance Orders/Work Orders
52289482-01

Section 1R06: Flood Protection Measures

Maintenance Orders/Work Orders
52387542 52386171

Section 1R11: Licensed Operator Requalification Program

Procedures
3-E-0, Reactor Trip or Safety Injection, Revision 3
3-E-1, Loss of Reactor or Secondary Coolant, Revision 4

Miscellaneous
I3SX-LOR-SES005, NI-42 Fails Low, Main Generator Trip, MSL Break, Reactor Auto-Trip Failure, MSIVs Fail to Auto Close, Auto SI Failure and PRZR Safety Fails Open, Revision 2

Section 1R12: Maintenance Effectiveness

Procedures
EN-DC-206, Maintenance Rule (a)(1) Process, Revision 1

Condition Reports (CR-IP3-)

1994-01058	2005-05307	2005-05310	2008-02533
2010-01991	2010-02069	2010-02530	2010-02616
2010-02751	2010-03092	2010-03098	2011-05085
2011-05265	2012-00095	2012-00255	

Maintenance Orders/Work Orders

52263371	00296587	308933	52387399

Miscellaneous

PM Change Request Form, Action Request (AR) 139405
IPEC Top Ten Equipment Reliability Issues, SIPD-1362, Pressure Relief System Isolation Valves

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

EN-WM-104, On Line Risk Assessment, Revision 6
OAP-008, Severe Weather Preparations, Revisions 10/11

Miscellaneous

Equipment-Out-Of-Service (EOOS) Monitor, Risk Analysis Software Program

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

EN-OP-111, Operational Decision-Making Issue (ODMI) Process, Revision 6
3-PT-6Y002, N2 Backup Supply System for AFW Valves, Revision 0
SOP-ESP-1, Local Operation of Safe Shutdown Equipment, Revision 0
3-SOP-ESP-001, Local Equipment Operation and Contingency Actions, Revision 21
3-ARP-006, Panel SCR – Condensate and Feedwater, Revision 47
3-SOP-AFW-001, Auxiliary Feedwater System Operation, Revision 4
3-IC-SI-57, SAT Load Tap Changer Relay Test, Revision 6

Completed Procedures

3-PT-W020, Electrical Verification – Inverters and DC Distribution in Modes 1 to 4, dated October 22, 2011
3-PT-W020, Electrical Verification – Inverters and DC Distribution in Modes 1 to 4, dated October 29, 2011

Condition Reports (CR-IP3-)

2003-04779	2003-04717	2004-01596	2011-03960
2011-04651	2011-05155	2011-05220	2011-05291
2011-05355	2011-05457	2011-05739	2012-00188
2012-00284	2012-00393	2012-00394	2012-00533

Maintenance Orders/Work Orders

00238400	52294522	52294523	52214828

Drawings

9321-LL-31133, Sheet 20, Schematic Diagram 6900V Switchgear No.31, Revision 2,

Miscellaneous

ODMI, CR-IP3-2012-00284
IP-CALC-12-00013, Evaluation of Corroded Stud for Packing Gland Flange for SP-AOV-956E, Revision, 0

ER-03-3-107, Modify N2 Backup Supply System for AFWS valves and turbine speed controller, Revision 1
IP3-DBD-303, Design Basis Document for Auxiliary Feedwater System, Revision 4
ENN-MS-S-009-IP3, IP3 System Safety Function Sheets, Revision 2
IP3-CALC-MULT-382, N2 Backup to AFW Bldg. Valves and Atmospheric Dump Valves, Revision 4
Cashco Model HP Pressure Reducing Regulator, dated November 2008

Section 1R18: Plant Modifications

Procedures
OAP-15, AOP and ONOP User's Guide, Revision 0
3-AOP-RCP-1, Reactor Coolant Pump Malfunction, Revision 15
3-ARP-011, Panel SHF – Electrical, Revision 34
3-POP-1.1, Plant Heatup from Cold Shutdown Condition, Revision 65
3-POP-1.3, Plant Startup from Zero to 45% Power, Revision 58

Condition Reports (CR-IP3-)
2012-00009 2010-00683

Maintenance Orders/Work Orders
00297440

Miscellaneous
EC-33921, Temporary Setpoint Change for RCP 32 Horizontal Frame Vibration Alert Level
EC-35242, Plant Operation without Unit Auxiliary Transformer
NSE-80-03-077-EL, Plant Operation without Unit Auxiliary Transformer, dated September 11, 1980

Section 1R19: Post-Maintenance Testing

Procedures
3-PT-Q092E, 35 Service Water Pump, Revision 16
VLV-023-GEN, The Inspection and Repair of Crane 14" Swing Check Valves, Revision 5

Condition Reports (CR-IP3-)

2010-01714	2012-00029	2012-00062	2012-00103
2011-04906	2012-00906	2012-00636	2012-00752
2011-05506			

Maintenance Orders/Work Orders

00288558	52309146	52317762	00295212
00302634	00295212	00307488	00299433
00308121			

Drawings
IP3V-171-0355, Instrument Block Diagram Integrating Reactor Protection and Control Systems, Revision 3
9321-11-20170, Repair of Check valves SWN-1-1 Through SWN-1-6, Service Water Pit, Revision 1

IP3V-13-0003, DC Schematic Breaker Control, Revision 5
500B971, Elementary Wiring Diagram Charging Pump 32, Sheet 72, Revision 11

Miscellaneous
Revision DRN-10-5699, Charging Pump 31 Low Oil Pressure Trip Calibration
379-100166603, Solidstate Controls, Inc., Instruction/Technical Manual, Revision A

Section 1R22: Surveillance Testing

Completed Procedures
3-PT-OL3B18, Safety Injection Pump #32 Load Sequencer Calibration, dated January 5, 2012
3-PT-Q116B, 32 Safety Injection Pump, dated January 6, 2012
3-PT-Q092B, 32 Service Water Pump, dated January 11, 2012
0-SOP-Leakrate-001, RCS Leakrate Surveillance, Evaluation and Leak Identification, dated March 11, 2012
3-PT-V2, IR Analog Channel Functional Test, dated March 29, 2012
3-PT-M13A1, Reactor Protection Logic Channel Functional Test (Reactor Power Greater than 35% - P8), dated February 6, 2012

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedures
IPEC-EP, Indian Point Energy Center Emergency Plan, Revision 12

Section 1EP6: Drill Evaluation

Procedures
3-E-0, Reactor Trip or Safety Injection, Revision 3
3-E-1, Loss of Reactor or Secondary Coolant, Revision 4

Miscellaneous
I3SX-LOR-SES005, NI-42 Fails Low, Main Generator Trip, MSL Break, Reactor Auto-Trip Failure, MSIVs Fail to Auto Close, Auto SI Failure and PRZR Safety Fails Open, Revision 2

Sections 2RS1: Radiological Hazard Assessment and Exposure Controls

Miscellaneous
RWP 20122518; 20122520; 20122521; 20122534

Section 2RS2: Occupational ALARA Planning and Controls

Miscellaneous
ALARA Plan Nos. 20122532; 20122539

Section 4OA1: Performance Indicator Verification

Completed Procedures
EN-LI-114, Performance Indicator Process – Unplanned Scrams per 7,000 Critical Hours, dated April 5, 2011

EN-LI-114, Performance Indicator Process – Unplanned Scrams per 7,000 Critical Hours, dated July 12, 2011
EN-LI-114, Performance Indicator Process – Unplanned Scrams per 7,000 Critical Hours, dated October 4, 2011
EN-LI-114, Performance Indicator Process – Unplanned Scrams per 7,000 Critical Hours, dated January 3, 2012
EN-LI-114, Performance Indicator Process – Unplanned Scrams with Complications, dated April 5, 2011
EN-LI-114, Performance Indicator Process – Unplanned Scrams with Complications, dated July 12, 2011
EN-LI-114, Performance Indicator Process – Unplanned Scrams with Complications, dated October 4, 2011
EN-LI-114, Performance Indicator Process – Unplanned Scrams with Complications, dated January 3, 2012
EN-LI-114, Performance Indicator Process – Unplanned Power Changes per 7,000 Critical Hours, dated April 5, 2011
EN-LI-114, Performance Indicator Process – Unplanned Power Changes per 7,000 Critical Hours, dated July 12, 2011
EN-LI-114, Performance Indicator Process – Unplanned Power Changes per 7,000 Critical Hours, dated October 4, 2011
EN-LI-114, Performance Indicator Process – Unplanned Power Changes per 7,000 Critical Hours, dated January 3, 2012

Section 4OA2: Problem Identification and Resolution

Procedures
EN/ENN-DC-148, Vendor Manuals and the Vendor Re-Contact Process, Revisions 0/4
EN-LI-102, Corrective Action Process, Revision 16
EN-LI-118, Root Cause Analysis Process, Revision 13
EN-LI-119, Apparent Cause Evaluation (ACE) Process, Revision 11

Maintenance Orders/Work Orders

52259462	52252663	287823	0028723
52262270	52263384		

Miscellaneous
Revisions DRN-11-03272/11-03286, Inspection, Lubrication, and Testing of Westinghouse 480V DS 532/632 Breakers
EPRI Report NP-7410, Volume 1, Part 4, Circuit Breaker Maintenance, Low-Voltage Circuit Breakers, Westinghouse DS Models, December 1992
EPRI Report 1000246, Routine Preventive Maintenance Guidance for Westinghouse DS Circuit Breakers, September 2000
Westinghouse Flysheet, NS-ES-0196, New DS Breaker Motor Cutoff Switch
Westinghouse Vendor Manual, MPM-DS Breaker, Maintenance Program Manual for Safety Related Type DS Low Voltage Metal Enclosed Switchgear, Revisions 1 and 2
Procurement Engineering Evaluation 96808
IP3-DBD-308, Design Basis Document for Component Cooling Water System, Revision 2
Westinghouse Evaluation INT-92-541, Component Cooling Water Maximum Flow Evaluation
Westinghouse Evaluation INT-92-543, Component Cooling Water Maximum Flow Evaluation Calculation Summaries

Westinghouse Evaluation INT-97-687, Justification of Past Operation with Reduced Service Water Flow to the CCW Heat Exchangers

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

Procedures
3-POP-2.1, Operation At Greater Than 45% Power, Revision 55
3-POP-3.1, Plant Shutdown From 45% Power, Revision 45
3-POP-1.3, Plant Startup From Zero to 45% Power, Revision 57
3-PT-V053B, Power Reduction Surveillance Requirements, Revision 4
3-SOP-EL-005, Operation Of On-Site Power Sources, Revision 40

Condition Reports (CR-IP3-)
2012-00688 2012-00686 2012-00685 2012-00684

Miscellaneous
EN-RE-302, PWR Reactivity Maneuver, Attachment 9.1, Reactivity Plan Form, Revision 2

LIST OF ACRONYMS

ABFP	auxiliary boiler feed pump
ADAMS	Agencywide Document Management System
AFW	auxiliary feedwater
ALARA	as low as is reasonably achievable
CA	corrective action
CAP	corrective action program
CCW	component cooling water
CFR	Code of Federal Regulations
CR	condition report
CS	containment spray
DRA	Deputy Regional Administrator
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EC	engineering change
EDG	emergency diesel generator
ENTERGY	Entergy Nuclear Northeast
EPD	electronic personnel dosimeter
EPRI	Electric Power Research Institute
FCV	flow control valve
FZ	fire zone
IAD	instrument air dryer
IMC	Inspection Manual Chapter
IPEC	Indian Point Energy Center
IR	inspection report
LER	licensee event report
MCC	motor control center
MCO	motor cutoff
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
OE	operating experience
PI	performance indicator
PM	preventive maintenance
RA	regional administrator
RCS	reactor coolant system
RI	resident inspector
RWP	radiation work permit
SDP	significance determination process
SRA	senior risk analyst
SRI	senior resident inspector
SSC	structure, system, and component
SW	service water
TRM	Technical Requirements Manual
TS	technical specification
UAT	unit auxiliary transformer