

Indian Point 2

2Q/2005 Plant Inspection Findings

Initiating Events

Significance:  Dec 31, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

INADEQUATE CAUSAL ANALYSIS ASSOCIATED WITH STATOR WATER COOLING PRESSURE SWITCH

The inspector identified a self-revealing Green finding involving poor causal analysis associated with the main generator stator water cooling (SWC) system. The ineffective causal analysis was associated with the settings of the generator protection trip pressure switch (63-P79). The finding resulted in an automatic reactor trip due to a low inlet pressure condition on the main generator SWC system.

The finding is more than minor since it impacts the Initiating Event cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions, and is associated with the equipment performance attribute. Specifically, the finding affects the likelihood of a reactor trip and challenges the critical safety function of auxiliary feedwater (AFW) initiation. The finding is of very low risk significance (Green) since it does not contribute to both the likelihood of a reactor trip and the likelihood of mitigation equipment functions being unavailable. The finding is associated with the cross-cutting area of problem identification and resolution (PI&R) based on the ineffective causal analysis for previously identified deficiencies affecting the SWC system.

Inspection Report# : [2004012\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

IMPROPER INSTALLATION OF REACTOR COOLANT SYSTEM LOOP FLOW TUBING RESULTING IN REACTOR COOLANT SYSTEM LEAKAGE

The inspector identified a self-revealing Green non-cited violation of 10 CFR 50 Appendix B, Criterion V "Instructions, Procedures and Drawings." Maintenance personnel did not verify that the length of tubing between the RACK 20 bulkhead connection and the existing 21 Reactor Coolant Loop Flow (FT-416) Hi side impulse tubing was sufficient for a proper Swagelok connection pursuant to procedure IP-SMM-MA-108.

The finding is more than minor since it impacts the Initiating Event cornerstone objective of limiting the likelihood of those events that upset plant stability and challenges critical safety functions, and is associated with the procedural quality attribute. Specifically, the finding affects the likelihood of a reactor coolant system (RCS) leak that upsets plant stability and challenges critical safety functions. This finding is of very low risk significance (Green) since worst case degradation would not result in exceeding the technical specification (TS) limit for identified leakage (10 gpm) and it does not affect the mitigation system's safety functions.

Inspection Report# : [2004012\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW RCS DRAINDOWN PROCEDURE DUE TO INAPPROPRIATE APPROACH

The inspector identified a self-revealing Green non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings" associated with a reactor vessel water level control issue during the drain down for the reactor vessel head re-installation on November 11, 2004. Specifically, an inappropriate level reduction rate existed by procedure, such that when communications to field operational personnel were temporarily lost and manual valve manipulations to reduce the rate were delayed, a two foot lower reactor vessel water level resulted.

This finding is more than minor, because it potentially affects the Initiating Events cornerstone objective of limiting the likelihood of events that challenge critical safety functions during shutdown, and is associated with the procedural quality attribute. This finding is considered to be of very low safety significance (Green), because residual heat removal (RHR) shutdown cooling remained operable and gravity re-flood of the reactor without operator action would have limited the consequences of any potential loss of shutdown cooling.

Inspection Report# : [2004012\(pdf\)](#)

Significance:  Sep 30, 2004

Identified By: NRC

Item Type: FIN Finding

INADEQUATE CAUSAL ANALYSIS FOR 22 FEEDWATER REGULATING VALVE

The inspectors identified a finding involving ineffective causal analysis for feedwater flow perturbations that led to a manual reactor trip on September 1, 2004. Ineffective causal analysis between September 1 - 5, resulted in two power escalation attempts without successfully identifying the direct cause of the feedwater flow perturbations. The effectiveness of Entergy's causal analysis was affected by informal troubleshooting and a variety of corrected equipment problems that did not support the underlying direct cause of the feedwater flow problem.

This finding is more than minor since if left uncorrected the finding would become a more significant safety concern. Specifically, if the effectiveness of Entergy's approach to causal analysis were not addressed, recurring plant transients and safety system challenges would result in a more significant safety concern. This finding affects the Initiating Event cornerstone since the two subsequent power changes did increase the likelihood of a reactor trip due to challenging reactor protection system (RPS) set points on steam generator level. The issue is considered to be of very low safety significance since the finding did not impact mitigation equipment availability or function. This issue was placed in Entergy's corrective action program (CAP) as CR-IP2-2004-04291. This finding is considered relevant to problem identification and resolution (PI&R) since it relates to Entergy's effectiveness in resolving problems.

Inspection Report# : [2004008\(pdf\)](#)

G

Significance: Sep 30, 2004

Identified By: Self Disclosing

Item Type: FIN Finding

FAILURE TO PROMPTLY IDENTIFY DEGRADED CONDITIONS ASSOCIATED WITH THE 23 FEEDWATER REGULATING VALVE

A self-revealing Green finding related to the failure to promptly identify a degraded condition between September 2 - September 24 associated with the 23 feedwater regulating valve (FWRV) solenoid SOV-E. The failure to promptly identify and correct deficiencies associated with SOV-E resulted in a manual reactor trip on September 24, 2004. Entergy's actions were ineffective in that feedwater (FW) piping walkdowns following several feedwater transients failed to identify degradation of the solenoids' L-shaped conduit bracket. Furthermore, on September 20, 2004, when degradation of the L-shaped bracket for SOV-E was identified, it was not entered in Entergy's CAP. Subsequently, the degraded L-shaped bracket for SOV-E led to a manual reactor trip on September 24.

This finding was greater than minor since it adversely affected the Initiating Events cornerstone objective of limiting the likelihood of those events that upset plant stability (manual reactor trip) and challenge critical safety functions (initiation of auxiliary feedwater due to a partial loss of main FW flow) during power operations. The finding was associated with the cornerstone attribute of equipment performance since the solenoid valve for the 23 FWRV impacted the reliability of an FW isolation signal. The finding is of very low safety significance because the failure of the FW isolation solenoid contributed to the likelihood of a reactor trip; however, it did not affect the likelihood that other mitigation systems would not be available. On September 24, 2004, this issue was placed in Entergy's CAP as CR-IP2-2004-04522. This finding is considered relevant to PI&R since it relates to Entergy's effectiveness in identifying problems.

Inspection Report# : [2004008\(pdf\)](#)

Mitigating Systems**G**

Significance: May 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

NON-CONSERVATIVE POST-ACCIDENT RECIRCULATION PUMP MOTOR LOADING CONDITIONS USED TO DETERMINE OVERLOAD TRIP SETTINGS FOR 480 VOLT TYPE DB CIRCUIT BREAKERS

The team identified a finding where Entergy had used non-conservative post-accident recirculation pump motor loading conditions in an analysis that determined overload trip settings for the associated 480 Volt circuit breakers. This finding was determined to be a violation of 10 CFR 50, Appendix B, Criterion III (Design Control).

This finding is greater than minor because it is associated with the Equipment Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. This finding is of very low safety significance because it is a design deficiency that did not result in a loss of function.

Inspection Report# : [2005006\(pdf\)](#)

W

Significance: May 17, 2005

Identified By: NRC

Item Type: AV Apparent Violation

FAILURE TO ADEQUATELY EVALUATE AND CORRECT NITROGEN GAS MIGRATION AND ACCUMULATION IN PORTIONS OF THE SAFETY INJECTION SYSTEM

An apparent violation of 10 CFR 50, Appendix B, Criterion XVI (Corrective Action) and station procedures were identified associated with the failure to evaluate and correct a condition adverse to quality. Specifically, the condition adverse to quality involved the leakage of water from

the No. 24 safety injection accumulator past several closed valves, allowing water containing absorbed nitrogen to reach other portions of the safety injection emergency core cooling system (including the common suction supply piping for the safety injection pumps and the 23 safety injection pump casing). As the water moved from a higher to lower system pressure, the nitrogen gas was released from the water, thereby challenging the performance of the safety injection pumps. In addition, Entergy's initial evaluation of this condition did not appropriately consider available industry operating experience relative to gas migration into emergency core cooling system piping.

This issue is greater than minor because it is associated with the Equipment Performance attribute of the Mitigation Systems cornerstone and affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The Significance Determination Process (SDP) Phase 1, Phase 2, and Phase 3 were used to determine that this issue represented a finding with preliminarily low to moderate safety significance. The analysis used the NRC's best functionality estimates for the three safety injection pumps over a 17-day period when it was judged that adverse gas accumulation conditions existed. Specifically, the 23 safety injection pump was not functional due to the pump casing being filled with gas. The team concluded that the 21 and 22 pumps, given the accumulated gas in the pump suction piping, would not have functioned 75% of the time (assigned a 75% failure probability) for high flowrate and low discharge pressure conditions in response to a medium break loss of coolant accident; and 25% of the time for low flowrate and high discharge pressure conditions in response to other initiating events. The Phase 1 screening identified that a Phase 2 analysis was needed because the 23 safety injection pump train was not functional for longer than the technical specification allowed outage time of 72 hours. Given the uncertainty in the Phase 2 analysis, a Phase 3 analysis was necessary to improve the accuracy of the result. The Phase 3 analysis for internal and external initiating events, using the above assumptions and licensee risk information, identified an increase in core damage frequency of approximately 1 in 900,000 years of operation (low E-6 per year range); and an increase in large early release frequency of approximately 1 in 3,000,000 years of operation (low E-7 per year range).

Inspection Report# : [2005006\(pdf\)](#)

G

Significance: Apr 02, 2005

Identified By: NRC

Item Type: FIN Finding

FAILURE TO PERIODICALLY VERIFY THE CAPABILITY OF CITY WATER BACKUP COOLING SAFETY FUNCTION

The inspectors identified a Green finding associated with a loss of city water to the primary auxiliary building on January 26, 2005. Specifically, Entergy failed to periodically verify the capability of a backup cooling water supply for the charging pumps, safety injection pumps and the residual heat removal pumps.

The finding is greater than minor since it affected the Mitigating Systems cornerstone objective of availability of backup cooling to safety pumps in response to a loss of all component cooling water and/or loss of service water event. This finding impacted the procedural quality attribute since no periodic verification existed since 2003 to verify the availability of backup cooling water source, city water. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the Region I Senior Reactor Analyst (SRA) performed a Phase 3 analysis and determined that this finding was of very low risk significance (Green). No violations of NRC requirements were identified.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Apr 02, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IMPLEMENT ADEQUATE INTERIM COMPENSATORY MEASURES FOR FIRE BARRIER IMPAIRMENTS

The inspectors identified a Green non-cited violation of license condition 2.K between November 26, 2004 - March 9, 2005, due to inadequate compensatory actions for a degraded 3-hour rated fire barrier (3M Interam) for penetration H20 concurrent with a degraded hose station nearest to the fire barrier H20. Penetration H20 houses electrical cables needed for the Alternate Safe Shutdown System.

The finding is more than minor since, if left uncorrected, the finding would become a more significant safety concern. The finding affects the Mitigating Systems cornerstone, and its objective of ensuring availability, reliability and capability of systems that respond to initiating events, since both deficiencies contributed to plant risk by decreasing the endurance of the fire barrier and affecting the ability to manually (no automatic suppression capability) fight fires in the electrical penetration room. This issue was of very low risk significance (Green) using phase 1 of the Fire Protection SDP, MC 0612 Appendix F because the barrier was judged to afford greater than 20 minutes of fire endurance protection and low combustible loading was found in the fire area. This finding is associated with the cross-cutting area of human performance (personnel) in that fire protection engineering did not document or implement adequate compensatory measures for the degraded fire barrier and inoperable hose station.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IMPLEMENT ADEQUATE PROCEDURES FOR EMERGENCY CORE COOLING SYSTEMS OPERATIONS

The inspector identified a Green non-cited violation of TS 5.4.1 associated with Entergy's failure to properly implement procedure 2-COL 10.0, "Locked Safeguards Valves." Residual heat removal recirculation valve AC-1863 was left in the shut position during the restart from IP2

refueling outage No. 16 (2RF16). The valve was not locked open in accordance with 2-COL 10.0 prior to entering Mode 4 due to the sequence of procedures performed at the end of the refueling outage.

The finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of configuration control and adversely affects the capability of systems that respond to initiating events to prevent undesirable consequences. The finding involves the unavailability of a design feature described in the Final Safety Analysis Report (FSAR) that would ensure the capability to continue high-head recirculation after a loss of coolant accident (LOCA) in the event of certain system failures. This finding is of very low safety significance (Green), because the normal flow paths for establishing flow to the safety injection (SI) pump suction during high-head recirculation remained available for the duration of the period that valve AC-1863 was shut. This finding is associated with the cross-cutting area of human performance, in that, operators did not adequately assess a change in the sequence of procedures performed during the refueling outage. Inspection Report# : [2004012\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE MAINTENANCE PROCEDURE RESULTING IN ALL EDG'S BEING DECLARED INOPERABLE DUE TO DEFEATING SBO LOGIC

The inspector identified a self-revealing Green non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings." A maintenance procedure for trip checks associated with the 345KV electrical feeder was inadequate since it did not provide appropriate directions for the test set-up. As a result, technicians unintentionally reset the main generator lock-out relays by using test stabs which defeated the station blackout (SBO) relays associated with the emergency diesel generators (EDGs) starting logic.

The finding is more than minor since it affects the procedure quality attribute of the Mitigating Systems cornerstone and impacts the cornerstone objective of ensuring availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) due to low exposure time, credit for manual actions in the abnormal operating procedures (AOPs) to restore power to the safety-related 480 volt buses and start the required loads to stabilize plant conditions, and the availability of other mitigating equipment (ie. steam driven AFW pump and gas turbines 1 and 2).

Inspection Report# : [2004012\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE PREVENTATIVE MAINTENANCE PROCEDURE IMPLEMENTATION RESULTING IN A LOSS OF SAFEGUARDS BUS 6A

The inspector identified a self-revealing Green, non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The finding involved improper maintenance on a 480 volt cross-tie breaker (52/3AT6A). Maintenance personnel did not install the main line contactors for breaker (52/3AT6A) consistent with maintenance procedure BRK-P-003-A, "Westinghouse Model DB-75 Breaker - Preventative Maintenance."

The finding is greater than minor since it affects the Mitigating Systems cornerstone objective of ensuring the availability of the RHR system and to prevent undesirable consequences such as core damage due to lack of core cooling during plant shutdown. The performance finding affects the Mitigating Systems cornerstone attribute of procedural quality (breaker preventative maintenance (PM) procedure). This finding is considered to be of very low safety significance since it did not degrade Entergy's ability to terminate a leak path or add reactor coolant inventory when needed, or degrade Entergy's ability to recover RHR once it was lost. This finding is associated with the cross-cutting area of human performance, in that maintenance personnel did not implement a 480 volt breaker PM procedure correctly.

Inspection Report# : [2004012\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

MULTIPLE DEFICIENCIES IN SURVEILLANCE PROCEDURES ASSOCIATED WITH ITS CONVERSION

The inspectors identified a Green non-cited violation of 10 CFR 50 Appendix B, Criterion VI, "Document Control." Inadequate document control resulted in multiple surveillance procedures not meeting the criteria of the Improved Technical Specifications (ITS) surveillance requirements (SRs) or the applicable ITS basis document.

The finding is more than minor since, if left uncorrected, it would become a more significant safety concern potentially impacting multiple SRs of safety-related equipment and equipment important to safety. The performance finding affects the Mitigating Systems cornerstone attribute of procedural quality. This finding is considered to be of very low risk significance (Green) since it had not resulted in a loss of safety function or in any inoperable equipment.

Inspection Report# : [2004012\(pdf\)](#)

G**Significance:** Jul 20, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement appropriate and timely corrective actions for known deficiencies in the control program(s) and installation of safety related electrical cables and raceways.

Green. The team identified three examples of a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for Entergy's failure to promptly take actions to address conditions adverse to quality concerning one example of resolution of Data Verification Transfer Report (DVTR) Items/Operability Assessments; and two examples of configuration control of electrical raceways and cables.

Inspection Report# : [2004009\(pdf\)](#)**G****Significance:** Jul 20, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement appropriate design controls for electrical cable and raceway installations.

Green. The team identified three examples of a non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for Entergy's failure to implement appropriate design controls for the installation of safety related electrical cables and raceways.

Inspection Report# : [2004009\(pdf\)](#)**G****Significance:** Jul 20, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to properly control cable separation program documents.

Green. The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVII, Quality Assurance Records, for Entergy's failure to properly control the cable separation program documents. These documents include some reports never being reviewed, approved, and signed off as well as documents used in part for design specifications and DBD work not entered into the document control program to ensure retrieveability.

Inspection Report# : [2004009\(pdf\)](#)

Barrier Integrity

G**Significance:** Apr 02, 2005

Identified By: NRC

Item Type: FIN Finding

INEFFECTIVE CAUSAL ANALYSIS ASSOCIATED WITH A ROD CONTROL FAILURE

The inspectors identified a Green finding associated with ineffective causal analysis for a rod control system problem which resulted in the unexpected insertion of control rod H-8, and power reductions to less than 75 percent, on February 9 and 10. The inspectors determined that the causal analysis was ineffective since it failed to identify that the current traces taken during troubleshooting were ten to fifteen percent below the expected values, even after short-term action to install the original style regulation cards.

The finding is more than minor since it affected the Barrier Integrity cornerstone objective (fuel cladding). The barrier integrity cornerstone objective provides reasonable assurance that physical design barriers protect the public from radionuclide release caused by accidents or events. This finding impacted the configuration control attribute since it led to the licensee's inability to maintain the rod alignment criteria prescribed in the Technical Specifications (TS). A Phase 1 SDP screening determined that the inadequate causal analysis and subsequent rod drops were of very low risk significance (Green) since the required actions for rod misalignments prescribed by the TS were performed within the allowed time and in-core flux maps verified that local power limits were met. No violations of NRC requirements were identified. This finding is associated with the cross-cutting area of problem identification and resolution, specifically, an ineffective evaluation of rod control system problems resulted in the unexpected insertion of control rod H-8 and power reductions to less than 75 percent, on February 9 and 10.

Inspection Report# : [2005002\(pdf\)](#)**G****Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INEFFECTIVE CORRECTIVE ACTIONS INVOLVING LEAKAGE FROM A CANOPY SEAL WELD ONTO THE REACTOR

VESSEL HEAD IN NOVEMBER 2002

The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," for Entergy's failure to properly address a condition adverse to quality involving leakage from a canopy seal weld in November 2002. The ineffective corrective actions for this conoseal leak led to boron accumulation on the reactor vessel head (RVH).

The finding is considered to be more than minor since, if left uncorrected, it could have led to a more significant problem. Specifically, the boric acid, if re-wetted, could have led to accelerated corrosion of the RVH. The finding is of very low significance since the RVH integrity was not affected by this problem. The finding is associated with the cross-cutting area of PI&R related to the ineffective corrective actions for the conoseal leak.

Inspection Report# : [2004012\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE ADEQUATE INSPECTION CRITERIA AND GUIDANCE TO EVALUATORS PRIOR TO THE INSPECTION OF THE REACTOR VESSEL LOWER HEAD PENETRATION NOZZLES

The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion IX, "Control of Special Processes," for Entergy's failure to provide adequate inspection criteria and guidance to evaluators prior to the inspection of the reactor vessel lower head penetration nozzles. In particular, Entergy personnel performed visual inspections of the reactor vessel bottom mounted instrumentation annulus area without adequate procedural guidance to define potential problems or indications.

This finding is considered to be more than minor since inspection program deficiencies could allow a degraded component to remain in-service undetected. Specifically, the failure to develop adequate inspection guidance could result in a failure to detect a degraded lower RVH penetration boundary. The finding is of very low significance since the lower RVH integrity was not affected.

Inspection Report# : [2004012\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance:  Apr 02, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

ENERGY IP2 DID NOT PROPERLY PACKAGE RADIOACTIVE WASTE FOR DISPOSAL TO CONFORM WITH THE WASTE DISPOSAL FACILITY LICENSE

A Green self-revealing non-cited violation of 10 CFR 20.2001 was identified associated with the transfer of waste, by Entergy's Indian Point Energy Center, for disposal, that did not meet Barnwell Low-Level Waste Disposal facility license requirements as required by 10 CFR 30.41. Specifically, a shipment (0205-12578) of low-level radioactive waste, from the Indian Point Energy Center, was identified on February 11, 2005, at the Barnwell Low-level Waste Disposal Facility, to have loose radioactive waste material inside the shipping cask (and outside of the waste disposal container) contrary to the disposal facility's site operating license (License No. 097, Amendment 47, Condition 61).

This finding is considered to be more than minor because Entergy failed to meet a waste disposal facility license requirement that was reasonably within its ability to foresee, correct, and prevent. This radioactive material control transportation finding was evaluated against criteria specified in NRC Manual Chapter 0609, Appendix D, and determined to be of very low safety significance (Green) because: 1) no external radiation or contamination limits were exceeded; 2) no package breach was involved; 3) no failure to make a notification was involved; and 4) although a low-level burial ground non-conformance was involved, burial ground access was not denied and no 10 CFR 61.55 waste classification issue was involved. In addition, although the finding did involve a certificate of compliance issue; the finding was a minor contents deficiency with low risk significance relative to causing a radioactive release to the public or public or occupational exposure. The small quantity of waste material was contained within the NRC approved shipping cask. Entergy temporarily suspended this type of shipment from the Indian Point Energy Center and placed the issue in the corrective action program.

Inspection Report# : [2005002\(pdf\)](#)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : August 24, 2005