Indian Point 2
4Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: FIN Finding
Failure to Maintain Design Control of Control Rod Drive Mechanism Fans
The NRC identified a Green finding because Entergy did not maintain appropriate design control of the control rod drive mechanism fans. A modification to improve the reliability of these fans was incorrectly implemented, leading to an increased likelihood of a loss of lubrication to the fans' motor bearings. Incorrect implementation of this modification directly resulted in the failure of one of the fans during plant operation. In response, Entergy entered this issue into their corrective action program.

This finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of Equipment Performance, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the reliability of the control rod drive mechanism fans, which have a mitigating function in Indian Point 2's emergency operating procedures, was adversely affected. This finding is of very low safety significance because while equipment reliability was degraded, there was no actual loss of safety function. (Section 1R12)
Inspection Report# : 2005005*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedure for Control of Work on Safety-Related Components
The NRC identified a Green NCV of Technical Specification 5.4.1 because Indian Point's work control process inappropriately allowed maintenance to be conducted on a safety-related component prior to the completion of a modification package or analysis. Indian Point's procedures allowed maintenance to be declared "emergency work" if that work was necessary to avoid a forced shutdown or plant transient. This allowed the maintenance to be performed prior to the completion of work procedures, a modification package, and the associated engineering analysis. Entergy entered this issue into the corrective action program and took action to revise their work control procedure.

This finding was determined to be more than minor because if left uncorrected it would become a more significant safety concern. Failure to complete an appropriate evaluation prior to work on safety-related equipment could impact the operability of risk-significance components. This finding is of very low safety significance because the safety-related work performed without appropriate evaluation did not result in the actual loss of safety function of a system and did not impact fire, flooding, seismic, or severe weather initiating events. (Section 1R13)

This finding is associated with the Human Performance cross-cutting area in that the decision to implement the modification to FCV-447 without proper evaluation was based on inappropriate procedural guidance. This deficiency ultimately led to the violation of Indian Point 2's Technical Specifications. (Section 4OA4)

Inspection Report# : 2005005*(pdf)*

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
INCORRECT SETTING OF RELIEF VALVE SI-855 ABOVE SYSTEM DESIGN PRESSURE AND FAILURE TO SUBMIT REQUIRED CHANGES TO THE SAFETY ANALYSIS REPORT
The inspector identified a Green NCV for the licensee's failure to properly implement a design modification involving the Safety Injection pump discharge relief valve, SI-855. This was determined to be a violation of 10CFR50, Appendix B, Part III, Design Control.

The deficiency was more than minor because it affected the design control attribute of the Mitigating Systems cornerstone objective to ensure availability, reliability and capability of the SI system to prevent undesirable conditions. The issue was a design deficiency that did not result in loss of function per GL 91-18 (Rev. 1), and was determined to be of very low safety significance since revised calculations demonstrated the

system piping remained capable of performing its specified function.
Inspection Report# : 2005004*(pdf)*

Significance: G Jul 01, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate post work test resulting in a safety related system exceeding its AOT
The inspector identified a Green NCV of 10 CFR 50, App. B, Criterion XI "Test Control" involving an inadequate post work test following maintenance on auxiliary component cooling water discharge check valve 755A. This resulted in the failure to identify a condition which led to one train of the containment recirculation spray system being unavailable for greater than its technical specification (TS) allowed outage time.

The finding is associated with the cross-cutting issue of problem identification and resolution in that the licensee's evaluation for CR IP2-2005-00252 failed to identify the deficiencies in the post maintenance test therefore no corrective actions were written to address this issue until prompted by the inspectors.

This issue is greater than minor because the performance deficiency adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone objective associated with ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. A Phase 3 SDP analysis was used to assess the deficiency due to modeling limitations of the Phase 2 SDP tools. The Phase 3 evaluation, performed by a Region I Senior Reactor Analyst, confirmed that this issue was of very low safety significance.
Inspection Report# : 2005003*(pdf)*

Significance: G Jul 01, 2005
Identified By: NRC
Item Type: FIN Finding
Inadequate corrective actions associated with training, procedural adequacy and operator knowledge on methods to address degraded grid
The inspectors identified a green finding involving inadequate corrective actions associated with training and operator knowledge of plant procedures during degraded grid voltage conditions.

This finding was determined to be greater than minor because it impacted the Mitigating Systems Cornerstone Objective, and was associated with the cornerstone's procedure quality attribute. The inspectors conducted a Phase 1 SDP screening and determined that the finding was of a very low safety significance, since 138KV system voltage had been maintained greater than the minimum operating voltage throughout the year, therefore implementation of the procedure was not required.
Inspection Report# : 2005003*(pdf)*

Significance: G 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)*

Significance: W May 17, 2005
Identified By: NRC
Item Type: VIO Violation
FAILURE TO ADEQUATELY EVALUATE AND CORRECT NITROGEN GAS MIGRATION AND ACCUMULATION IN PORTIONS OF THE SAFETY INJECTION SYSTEM
A 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).

This deficiency was indicative of cross-cutting weaknesses in the area of problem identification and resolution (evaluation and corrective action).

Inspection Report# : 2005006*(pdf)*
Inspection Report# : 2005013*(pdf)*

Significance: G 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)*

Significance: G 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)*

Barrier Integrity

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedural Requirements During Modification of a Safety-Related Valve
The NRC identified a Green NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Entergy staff did not follow modification procedures when implementing a temporary alteration to FCV-447, the safety-related feedwater flow control valve to the 24 steam generator. Specifically, while implementing a modification to grind material from the valve actuator cap screw heads, maintenance personnel removed more material than allowed by the modification package, thus invalidating the associated structural integrity analysis. The licensee entered this issue into the corrective action program and completed an operability assessment to show that the affected valve remained operable.

This finding is greater than minor because it is associated with the Barrier Integrity cornerstone attribute of Barrier Performance, and affected the cornerstone objective of ensuring the availability and reliability of components used for containment isolation. Improper implementation of this modification could have resulted in the inability of this valve to perform its safety function. This finding is of very low safety significance because while the modification was incorrectly implemented, subsequent analysis showed that the valve remained operable. (Section 1R13)

This finding is associated with the Human Performance cross-cutting area because the failure to maintain design control was the result of a personnel error. (Section 4OA4)
Inspection Report# : 2005005*(pdf)*

Significance: G 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)*

Emergency Preparedness

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Facilities and Equipment to Determine Threshold for Emergency Action Level
A Green non-cited violation associated with emergency planning standard 10 CFR 50.47(b)(4) was identified because there was no instrumentation readily available to operators to provide indication at the service water intake structure to determine if the threshold was met for the declaration of an unusual event. Because this issue is of very low safety significance and has been entered into the corrective action program, it is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy Entergy entered this issue into the corrective action program as CR-IP3-2005-05380 and has taken corrective actions to install a temporary intake level indication until a permanent level indication can be installed.

This finding is greater than minor because it is associated with the Emergency Preparedness cornerstone attribute of Facilities and Equipment, and affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was determined to have very low safety significance (Green) because this deficiency would have precluded the declaration of a UE. This deficiency did not result in the risk significant planning standard function being lost or degraded. (Section 1EP4)

Inspection Report# : 2005005*(pdf)*

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: FIN Finding
Inadequate Corrective Actions for Frame Relay System Problems
The inspectors identified a Green finding for a failure to implement timely corrective actions for multiple frame relay system problems dating back to 2003. Specifically, for issues related to the reliability of the frame relay system, adequate actions to prevent recurrence were not implemented in a timely manner. Entergy's corrective actions in response to the August 2005 frame relay failures resulted in a more thorough assessment of this issue and reasonable actions to prevent recurrence.

This finding was determined to be more than minor because the finding is associated with the EP cornerstone attribute of facilities and equipment (ANS availability). It could affect the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding is not suitable for Significance Determination Process evaluation but has been reviewed by NRC management and is determined to be a finding of very low safety significance. This issue is not greater than Green because of the short periods that the frame relay system was unavailable and because the alert and notification system design included a secondary method (i.e., back-up radio system) to actuate the sirens. This finding was determined to involve a cross-cutting issue in the area of problem resolution.
Inspection Report# : 2005005*(pdf)*

Significance: SL-IV Dec 31, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a 10 CFR 50.72(b)(3)(xiii) Notification
A non-cited violation (NCV) of 10 CFR 50.72(b)(3)(xiii) was identified for not formally reporting a siren system problem that occurred on August 5, 2005. The inspectors noted the short duration of the siren system problem, the fact that the NRC was informally notified, that back-up route alerting was available, and also that the capability to actuate the sirens via a manual siren initiation method was not lost. Subsequent to this event, the licensee implemented corrective actions to formalize the manual siren system actuation method. Notwithstanding these circumstances, a formal notification to the NRC was required because the normal processes for actuation of the sirens were not available and the licensee did not have formal procedures for, and had limited experience with, a potential alternate siren actuation method.

This deficiency was evaluated using the traditional enforcement process since the failure to make a required report could adversely impact the NRC's ability to carry out its regulatory mission. The inspectors evaluated the severity of this violation using the criteria contained in Supplement I - Reactor Operations and Section VI.A.1 of the NRC's Enforcement Policy and determined that this finding met the criteria for disposition as a non-cited violation.
Inspection Report# : 2005005*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Apr 02, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
ENTERGY 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 : March 03, 2006