Clinton
3Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE OF THE ELECTRICAL CIRCUIT CARD RESULTED IN A LOSS OF SAFETY FUNCTION FOR THE MAIN TURBINE BYPASS VALVES.
A finding of very low safety significance involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, was self revealed when a low main condenser vacuum alarm was recieved in the main control room. The alarm was caused by the failure of an electronic circuit card. This circuit card failure also resulted in the main turbine bypass valves being interlocked closed (loss of safety function). The inspectors determined that the cause of this issue was inadequate instructions contained in the licensee's Performance Centered Maintenance (PCM) process.

The finding was greater than minor because failure to have adequate instructions to implement an effective preventive maintenance program could be reasonably viewed as a precursor to a more significant event. Additionally, this finding could affect the mitigating systems cornerstone in that it is associated with a degraded condition that could concurrently influence mitigation equipment and the operator's response to an initiating event. This finding was of very low safety significance because the exposure time was of short duration, less than 3 days.
Inspection Report# : 2007002 *(pdf)*

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
FAILURE TO PERFORM AN ADEQUATE CONFIGURATION CONTROL RISK EVALUATION WAS A PERFORMANCE DEFICIENCY WARRANTING A SIGNIFICANCE EVALUATION.
A finding of very low safety significance was self-revealed following the loss of the division 3 shutdown service water (SX) system on August 17, 2006. The loss of division 3 of SX occurred when a security guard bumped an SX circuit breaker hand switch for the cross tie valve, 1SX014C, with a piece of protective equipment. This finding resulted from the licensee's failure to do an adequate inadvertent contact configuration control risk assessment during the implementation of a 2005 requirement for security personnel to carry new equipment on their person.

The finding was more than minor because it impacted the mitigating systems cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events. With the circuit breaker in the OFF position, 1SX014C would remain opend uring a loss of offsite power event. In this configuration, the SX system could not perform its safety function of supplying cooling water to both the division 3 diesel generator and the high pressure core spray pump room cooling system. This finding was of very low safety significance due to the short duration exposure time, less than three days, and credit for operator actions to restore the system back to service. This finding affected the work practices component of the cross-cutting area of human performance. Licensee management failed to ensure the proper management and oversight of security personnel rounds activities.
Inspection Report# : 2007002 *(pdf)*

Significance: G Nov 17, 2006
Identified By: NRC
Item Type: NCV NonCited Violation

POTENTIAL INOPERABILITY OF RCIC DUE TO VORTEXING
A finding of very low safety significance was identified by the inspectors for an Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control” requirements. Specifically, in Calculation IP-M-0384, “Evaluation of Vortex in the RCIC [Water] Storage Tank,” Revisions 0 and 1, the licensee failed to adequately demonstrate that the RCIC pump would be capable of performing its safety function prior to swapping suction paths from the RCIC tank to the suppression pool. As an immediate corrective action, the licensee aligned the suction path of the RCIC system to the suppression pool.

The finding was greater than minor because the calculation of record was not adequate and there was reasonable doubt of the successful outcome of a re-analysis. The finding was determined to be of very low safety significance because the inspectors answered “no” to all five screening questions in the Phase 1 Screening Worksheet under the Mitigating Systems column. After further analysis, the inspectors concluded that the RCIC pump was operable.
Inspection Report# : 2006011 *(pdf)*

Significance: W Aug 12, 2006
Identified By: NRC
Item Type: VIO Violation
HPCS OPERABILITY QUESTIONED DUE TO VORTEXING
White. A finding of low to moderate safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control” requirements. Specifically, the licensee failed to adequately address vortexing in the reactor core isolation cooling (RCIC) water storage tank. As a result, the setpoint for the high pressure core spray (HPCS) pump suction source to swap from the RCIC tank to the suppression pool may be too low and result in significant air entrainment such that the HPCS pump would not be capable of completing its safety function. As a corrective action, on December 1, 2005, the licensee shifted the HPCS and RCIC inventory source to the suppression pool as a conservative measure. Vortexing from the suppression pool should not occur due to the depth of the HPCS and RCIC suction lines and the use of the suppression pool as a qualified inventory source was allowed per Clinton’s Updated Safety Analysis Report (USAR) and Technical Specifications (TS).

The finding was greater than minor because if left uncorrected, could result in the HPCS system becoming inoperable due to air entrainment as the water level in the RCIC water tank decreased toward the swapover setpoint. This finding affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage)

Based on the discussion during the regulatory conference, the NRC determined that operators would be directed to throttle HPCS in response to transient (i.e., non- Loss of Coolant Accidents and non- Anticipated Transient Without a Scram) scenarios. If operators successfully throttle the HPCS injection valve, the system flow rate will be low enough that air entrainment during suction swap-over to the suppression pool would no longer be a concern. For the final significance determination, the NRC assumed that HPCS would fail in response to transient initiating events only if the operator failed to properly throttle the HPCS injection valve. For all other initiating events, HPCS was assumed to fail during the suction transfer, consistent with the assumption in the preliminary significance determination. Given the inherent uncertainty in estimating human error probabilities, the NRC used its best estimate of 2.6E-2 for the human error probability in the final significance determination.
Inspection Report# : 2006011 *(pdf)*
Inspection Report# : 2007006 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE PROCUREMENT SPECIFICATION FOR CHARCOAL RESULTS IN INOPERABLE CONTROL ROOM VENTILATION SUBSYSTEM.
A performance deficiency involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion IV,

"Procurement Document Control," was self revealed following receipt of laboratory results that showed that Division 1 control room ventilation system charcoal filter penetration values were higher than allowed by Clinton's Technical Specifications. This issue occurred because the licensee failed to establish proper purchase specifications for charcoal used in the control room ventilation system. Additionally, this issue led to Division 1 control room ventilation subsystem being inoperable from May 9 through May 14, 2005. Licensee corrective actions included entering the issue into the corrective action program, revising the charcoal purchase specifications, and adding limitations to work orders to prevent scheduling work that could impact the operability of redundant systems.

This issue was more than minor because it affected the objective of the Barrier Integrity cornerstone of assuring that physical design barriers protect the public from radionuclide releases caused by accident or events. Additionally, this issue is associated with the barrier perfromance attribute of maintaining Radiological Barrier functionality of the control room. Failure to ensure adequate purchase specifications resulted in there being a period where both trains of control room ventilation were inoperable without the knowledge of the operators. The issue was of very low safety significance because it only represented a degradation of the radiological barrier function provided for the control room.
Inspection Report# : 2007004 *(pdf)*

Significance:  Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO COMPLY WITH TECHNICAL SPECIFICATION 3.4.5 FOR RCS PRESSURE BOUNDARY LEAK
The inspectors identified a performance deficiency involving a Non-Cited Violation of Technical Specifications when the licensee failed to meet the required completion time for an action statement in Technical Specification 3.4.5. Specifically, Technical Specification 3.4.5 does not allow reactor coolant system pressure boundary leakage and requires a shutdown to Mode 3 within 12 hours if pressure boundary leakage is discovered. Upon entry into the drywell following a shutdown of the reactor on June 19, 2007, the licensee discovered the existence of reactor coolant system pressure boundary leakage. Indications of the leakage had been discovered at 0433 on June 18, 2007, but the plant was not placed in Mode 3 until approximately 31 hours later at 1125 on June 19, 2007. Licensee corrective actions included replacing the leaking flexible hose, scheduling replacement of other flexible hoses, and establishing a preventive maintenance replacement frequency for the flexible hoses.

This issue was more than minor because oeprating with a degraded pressure boundary affected the reactor coolant system equipment and barrier performance attribute of the Barrier Integrity cornerstone, in that, reactor coolant system pressure boundary leakage results in a reduction in the reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The issue was of very low safety significance because the potential maximum size of the leak was well within the capability of the available mitigating equipment. The finding is related to the cross-cutting area of Human Performance (Decision Making) in the operators had initially entered TS 3.4.5 for pressure boundary leakage, but later chose not to treat the leakage as pressure boundary leakage, and treat it as unidentified leakage until the actual location could be determined.
Inspection Report# : 2007004 *(pdf)*

Significance:  Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE PROCEDURE RESULTS IN SPENT FUEL BUNDLE INCIDENT
A performance deficiency involving a Non-Cited Violation of 10 CFR Part 50 Appendix B, Criteria V, "Instructions, Procedures, and Drawings," was self-revealed following an event on August 17, 2007, where a spent fuel bundle being moved to a temporary storage location came in contact with and rested upon another fuel bundle seated in its storage location. The licensee procedure that governs spent fuel pool movement failed to provide adequate guidance on how high to lift the fuel bundle prior to traversing across the spent fuel pool. Licensee corrective actions included revising the fuel handling procedure to provide specific instructions regarding how high to lift a fuel bundle during spent fuel pool movements.

This issue was more than minor because it affected the barrier integrity objective of assuring that physcial design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors determined that

this issue only degraded the Fuel Cladding Barrier and its associated cornerstone, therefore, this issue was of very low safety significance. This finding is related to the cross-cutting are of Human Performance (Resources) because the licensee did not provide complete and accurate procedures. Specifically, the procedure relied on the skills of the operator, did not provided specific values on how high to life a fuel bundle, and did not require independent verification
Inspection Report# : 2007004 *(pdf)*

Significance:  Mar 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW CLINOTN PROCEDURE 1019.05, "TRANSIENT EQUIPMENT/MATERIALS," RESULTED IN VIOLATION OF 10 CFR PART 50, APPENDIX B, CRITERION V.
The inspectors identified an NCV of 10 CFR Part 50, Appendix V, "Instructions, Procedures, and Drawings," for failure to assure that activites affecting quality be accomplished in accordance with prescribed documented instructions, procedures, or drawings. Contrary to CPS procedure 1019.05, "Transient Equipment/Materials," step 8.5.3, four radiation protection stanchions were secured to the 755' elevation in the containment building with ty-raps instead of metal grating clips. The licensee removed the stanchions, performed a walkdown of containment to ensure there were no other improperly installed stanchions, and entered the performance deficiency into the CAP for resolution.

The finding was associated with the Barrier Integrity Cornerstone. The finding was more than minor because the finding was viewed as a presursor to a significant event. If left uncorrected, the stanchions could become missiles during a suppression pool swell event, potentially damaging containment isolation valves. The inspectors assessed the significance of this finding as very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of the reactor containment. The finding was associated with cross-cutting aspect P.1c, thoroughly Evaluate Problems, of the problem identification and resolution cross-cutting area, in that, the licensee's initial reviews of the issue failed to evaluate the potential design basis impact.
Inspection Report# : 2007007 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Last modified : December 07, 2007