Clinton
2Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW APPROVED FIRE PROTECTION PROGRAM PROCEDURES CONCERNING CONTROL OF TRANSIENT COMBUSTIBLE MATERIAL.
The inspectors identified a performance deficiency involving a Non-Cited Violation (NCV) of Clinton Power Station Operating License NPF-62, Section 2.F for failure to implement the fire protection program in accordance with program requirements. The inspectors identified multiple instances of the licensee's failure to follow approved fire protection program procedures concerning control of transient combustible material. Corrective actions for this issue included removing the unattended combustible material, initiating transient combustible permits, and/or initiating compensatory measures.

The inspectors determined that this issue was more than minor because the identified transient combustibles were in a combustible free zone required for separation of redundant trains. This finding was of very low safety significance because the transient combustible materials identified by the inspectors were not combustibles of significance. The inspectors determined that this finding was cross-cutting in the area of Problem Identification and Resolution. Specifically, the licensee implements a corrective action program with a low treshold for identifying issues. The licensee identifies such issues completely, accurately, and in a timely manner commensurate with their safety significance (P.1(a)).
Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: FIN Finding
THE LICENSEE DISCOVERED THAT THE WRONG COMPONENT WAS INSTALLED IN THE B TURBINE DRIVEN REACTOR FEED PUMP OIL PRESSURE SENSING LOGIC.
A finding of very low safety significance was self-revealed by the automatic runback of the turbine driven reactor feed pump during post outage power ascension. The licensee discovered that the wrong component was installed in the B turbine driven reactor feed pump oil pressure sensing logic. The inspectors determined that the licensee failed to perform an adequate post maintenance test in accordance with procedures. This issue resulted in an unexpected power change from 54 percent power to 46 percent power. The licensee entered the issue into the corrective action program, performed tailgate discussions with technicians and work planners on the oil pressure switches were up to date in the materials and work management computer system.

The inspectors determined this issue was more than minor because it was associated with the Human Performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the frequency of those events that upset plant stability. Specifically, the failure to perform adequate post maintenance testing of pressure switch 1PS-FW 135 permitted the wrong component to be installed and placed in service. This deficiency ultimately resulted in an unplanned plant transient. The finding was of very low safety significance because this issue did not increase the likelihood that mitigation equipment or fundctions would not be available. The inspectors also concluded that the failure of the technician to properly follow calibration procedure 8801.01 during the initial calibration of this switch represented a cross-cutting issue in the area of Human Performance, Work Practices (H.4(b)), because licensee personnel failed to follow procedures in regard to pressure switch calibration.
Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 31, 2008
Identified By: NRC

Item Type: NCV NonCited Violation
DURING THE PERFORMANCE OF NRC FINAL DRYWELL CLOSEOUT, THE INSPECTORS NOTED THAT FOREIGN MATERIAL/HOUSEKEEPING SOCK HAD NOT BEEN REMOVED FROM THE DRYWELL FLOOR DRAINS.
The inspectors identified a finding and an associated NCV of 10 CFR Part 50, Appendix B, Criteria V, "Instructions, Procedures, and Drawings," having a very low safety significance during drywell closeout inspections. Specifically, during the performance of the NRC final drywell closeout, the inspectors noted that foreigh material/houskeeping socks had not been removed from the drywell floor drains. This issue could have resulted in the drywell leak detection system being inoperable following a reactor event. The licensee proecdures for drywell closeout directed licensee staff to remove all loose material and devices associated with the licensee material condition and housekeeping program. The licensee's corrective actions for this issue included removing the floor drain socks and incorporating a work activities item for sock removal in the outage schedule template.

The inspectors determined that this issue was more than minor because, if left uncorrected, it could result in a more significant safety concern. Failure to remove drain socks from drywell floor drains could result in the inability to readily detect and tract unidentified leakage following a reactor event. the finding was of very low safety significance because this finding didi not result in exceeding the Technical Specification limit for reactor coolant system (RCS) leakage nor did it affect other mitigating systems resulting in a ttal loss of their safety function. The inspectors also concluded this this issue was a result of no work tiem in the outage schedule to remove the socks, and therefore represented a cross-cutting issue in the are of Human Performance, Work Control (H.3(b)).
Inspection Report# : 2008002 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement fire protection program in accordance with program requirements
Identified a performance deficiency involving a NCV of Clinton Power Station Operating License NPF-62, Section 2.F for failure to implement fire protection program in accordance with program requirements. Inspectors identified multiple instances of the licensee failure to follow program procedures concerning control of Transient Combustible Material and Fire Protection Impairment Reporting. Corrective actions included removing the unattended combustible material and repairing latches on the fire doors.
This issue was more than minor because it could be a precursor to a significant event. A fire had potential of impacting safety related equipment used for safe shutdown purposes. This finding was of very low safety significance because the transient material identified by the inspectors were not combustibles of significance, and the licensee maintained fire suppression systems in the areas where the fire door latches were not functional. This finding was cross-cutting in the area of P.1(a) because the licensee failed to identify these issues in their corrective action program.
Inspection Report# : 2007005 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PERFORM POST MODIFICATION TESTING TO SHUTDOWN SERVICE WATER VACUUM BREAKERS
Identified a NCV of 10 CFR Part 50, App B, Crit XI, Test Controls, having a low safety significance for failure to properly test a permanent plant modification to the Div 1 & 2 SX. This resulted in two of four vacuum breakers that failed the minimal design specification during testing.
It was determined that the issue was more than minor because it is viewed as a precursor to a significant event. Failure to perform modification testing could lead to components within safety-related systems that do not work as designed. Through detailed analysis the licensee concluded that the hydraulic experience with the vacuum breaker not meeting the minimal design specification would not make the shutdown service water system inoperable. This finding had a cross-cutting aspect in the area of H.4(c) because there were multiple opportunities for the licensee engineering staff to identify the need for this testing.

Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 19, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Continuously Submerged Cables Design Deficiency
The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving inadequate cable design. Specifically, the team identified that the licensee failed to incorporate appropriate licensing and design basis requirements reflecting worst case environmental conditions for power and control safety related cables. Incorporation of these requirements would have ensured that the cables were designed for the continuous submerged conditions that are experienced at Clinton. The issue was entered into the licensee's corrective action program to initiate a review of the current cable monitoring programs, and to initiate long-term corrective actions. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because the licensee did not thoroughly evaluate problems such as the resolutions, address causes, and extent of condition (P.1 (c)). (Section 1R21.3.b.1)

Inspection Report# : 2007008 *(pdf)*

Significance: G Dec 19, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Division 3 Emergency Diesel Generator Neutral Ground Resistor Design Inadequacy
The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving inadequate equipment design. Specifically, the Division 3, emergency diesel generator (EDG) neutral ground resistor was found to be in a non-ventilated enclosure contrary to the USAR, which called for a ventilated housing. The issue was entered into the licensee's corrective action program to address this non-conforming condition and develop a design change to enhance ventilation for the resistor. The team determined that there was no cross-cutting aspect to this finding. (Section 1R21.3.b.2)

Inspection Report# : 2007008 *(pdf)*

Significance: G Dec 19, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design of Emergency Diesel Generator Exhaust
The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving inadequate design of the emergency diesel generator (EDG) exhaust sub-systems. Specifically, the licensee failed to properly account for severe weather in the design of the exhaust ducts for the EDGs. Consequently, during severe weather conditions, icing or glazing could potentially result in blockage of the exhaust ducts screens located at the duct outlet and in exceeding the backpressure requirements of the ducts. Once identified, the licensee initiated a prompt operability evaluation to verify system operability and an Issue Report which included appropriate compensatory actions. The team determined that there was no cross-cutting aspect to this finding. (Section 1R21.3.b.3)

Inspection Report# : 2007008 *(pdf)*

Significance: G Dec 19, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Residual Heat Removal Pipe Support Calculation Deficiencies
The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving a temporary installation that added lead shielding to the Unit 1 residual heat removal (RHR) piping. Specifically, the team identified numerous non-conservative technical errors and calculation omissions in seismic design basis analysis calculations that supported this temporary installation. Once identified, the licensee initiated a prompt operability evaluation to verify system operability and an Issue Report which included appropriate

compensatory actions. The cause of the finding is related to the cross-cutting element of Human Performance Resources, because the licensee did not provide complete, accurate and up-to-date design documentation to assure nuclear safety (H.2(c)). Specifically, the licensee had the temporary installation of lead shielding in place since 2002 and did not formally update the associated pipe support calculations in a timely manner. (Section 1R21.3.b.4)

Inspection Report# : 2007008 *(pdf)*

Significance: G Dec 19, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inappropriate SX Pump Test Acceptance Criteria
The team identified an NCV of 10 CFR Part 50, Appendix B, Criterion XI, ATest Control,@ having very low safety significance, in that, the shutdown service water (SX) pump tests conducted did not appropriately demonstrate that the SX pumps met design basis accident requirements. Specifically, the pump test acceptance criteria allowed the pump performance to degrade below the performance assumed by the design analysis. Once identified, this finding was entered into the licensee's corrective action program and the licensee completed an evaluation and retesting that demonstrated the pumps' capacity to perform required safety functions. The team determined that there was no cross-cutting aspect to this finding. (Section 1R21.3.b.5)

Inspection Report# : 2007008 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO EVALUATE HYDRAULIC POWER UNIT PIPING FOR IMPACT WITH CONTAINMENT ATMOSPHERE MONITORING LINE.
The inspectors identified a finding and an associated NCV of 10 CFR Part 50, Appendix b, Criterion XVI, "Corrective Actions," having very low safety significance, in that, inevaluating whether the reactor recirculation flow control valve "A" hydraulic power unit (HPU) piping was adequately supported in response to concerns raised in two condition reports, the licensee did not adequately address that the as-build support configuration had not been properly verified from a design standpoint. In particular, the licensee did not consider the safety related classification of nearby containment/drywell atmosphere monitoring tubing and that this tubing could be impacged if the HPU piping failed during a postulated design basis seismic event. Hence, the licensee did not implement the additonal evaluation/calculations required to demonstrate the HPU piping met more stringent design requirements and was adequately supported. The primary cause of the violation was related to the cross-cutting component of Human Performance, Resources (H.2(c)) because the licensee failed to maintain complete, accurate, and up-to-date design documentation. Subsequently, the licensee performed evaluations/calculations demonstrating that the HPU piping will not adversely impact the safety related containment monitoring tubing during a design basis seismic event. The licensee entered the finding in the corrective action program as Action Request 723620.

The finding was more than minor because it was associated with the Barrier Integrity Cornerstone and affected the cornerstone objective of maintaining functionality of containment due to the potential impact on the safety related containment atmosphere monitoring system which was needed to monitor and to take actions to mitigate challenges to containment integrity. The finding was of very low safety significance because the licensee's preliminary results based on sonservative calculation indicated that the design basis requirements were met, and hence field modifications were not necessary.
Inspection Report# : 2008002 *(pdf)*

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: G 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: G 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)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO BARRICADE AND LOCK A LOCKED HIGH RADIATION ARE.
The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification 5.7.2 for failure to barricade, lock, or continuously guard a high radiation area with dose rates greater than 1000 millirem per hour. On January 24, 2008, licensee staff failed to properly barricade and lock or guard three entrances to the under vessel area of the drywell. As corrective actions, the licensee suspended access to the Radiologically controlled Area (RCA) for the personnel involved and initiated a prompt investigation, including assessment of the extent of conditon plant-wide. The licensee entered the issued into the corrective action program as IR 726499.

The finding was more than minor because it was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure worker health and safety from exposure to radiation, in that, failure to follow procedures for control of locked high radiation areas could result in unplannec exposure. the finding was determined to be of vey low safety significance because the finding did not involve As-Low-As-Is-Reasonably-Achievable (ALARA) planning, collective dose was not a factor, it did not involve an overexposure, there was not a substantial potential for a worker overexposure, and the licensee's ability to assess worker dose was not compromised. Additionally, this finding has a cross cutting aspect in the the area of Human Performance because radiation protection staff did not appropriately follow procedures (H.4(b)) which governed control of access into locked high radiation areas.
Inspection Report# : 2008002 *(pdf)*

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 : August 29, 2008