D.C. Cook 1
2Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Dec 28, 2002
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to Provide an Appropriate Procedure for Testing the Unit 1 Pressurizer Power Operated Relief Valves Causing an Uncontrolled Release of Reactor Coolant System Inventory
A Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed. The licensee failed to provide an appropriate procedure for testing the Unit 1 pressurizer power operated relief valves (PORVs), causing an uncontrolled release of reactor coolant system inventory to the pressurizer relief tank. This issue was self-revealed on June 5, 2002, when pressurizer PORV 1-NRV-153 inadvertently opened while testing actuation logic circuitry for pressurizer PORV 1-NRV-151. The surveillance test procedure failed to provide adequate control of 1-NRV-151 and 1-NRV-153, which have a common automatic opening signal. The release rate exceeded the 25 gallons-per-minute limit established for declaring an Unusual Event in accordance with the licensee's Emergency Plan. The inspectors assessed this finding using the Significance Determination Process (SDP). The inspectors concluded that this issue could be reasonably viewed as a precursor to a significant event and was therefore more than a minor concern. The inspectors also concluded that this finding was associated with the initiating events cornerstone and adversely affected the cornerstone objective. Specifically, the uncontrolled release of reactor coolant system inventory upset plant stability and challenged the inventory control safety function. Because Unit 1 was in a shutdown mode during this period, the inspectors performed a Phase 1 SDP review of this issue using the guidance provided in NRC Inspection Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process." Based on the plant conditions at the time, the inspectors concluded that the most appropriate Appendix G checklist to use for this issue was the checklist for "Pressurized Water Reactor Hot Shutdown Operation - Time to core boiling less than 2 hours." Because, operator intervention was required to manually close the affected PORV block valve, the inspectors concluded that the unit was in a configuration where a single active failure or personnel error could have resulted in a rapid loss of reactor coolant system inventory as described in Section II.B.(2) of the checklist. Consequently, the inspectors concluded that this issue increased the likelihood of a loss of reactor coolant system inventory and therefore required a Phase 2 SDP analysis. The inspectors discussed the safety significance of this issue with the Regional Senior Reactor Analyst (SRA). The SRA reviewed the finding and determined that the drain path could be easily isolated, accurate reactor coolant system level indication was available, all steam generators were available for cooling, and all trains of standby injection were available and not impacted by the finding. Based on these factors the finding was determined to be of very low safety significance.
Inspection Report# : 2002009*(pdf)*

Mitigating Systems

Significance: G Mar 03, 2003
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Take Corrective Action to Ensure That Only Turbine Trip Throttle Valve Latch Hooks with the Correct Geometry Would be Installed in the Turbine-Driven Auxiliary Feedwater Pumps
The licensee failed to take corrective action to ensure that only turbine trip throttle valve latch hooks with the correct geometry would be installed in the turbine-driven auxiliary feedwater pumps after determining that the incorrect part had been supplied by the manufacturer. This finding was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B Criterion XVI, "Corrective Action". This finding was of very low safety significance because failure to take corrective action did not result in parts of incorrect geometry being installed in the auxiliary feedwater system and therefore did not affect the operability or availability of the system.
Inspection Report# : 2003004*(pdf)*

Significance: G Mar 03, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Take Adequate Corrective Action to Revise Procedure 12-MHP-5021-056-007
The licensee failed to take adequate corrective action to revise procedure 12-MHP-5021-056-007, "Turbine-driven Auxiliary Feedwater Pump Trip and Throttle Valve Linkage Adjustment" to include the manufacturer's recommendations regarding the set-up of the turbine trip throttle valve. This finding was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B Criterion XVI, "Corrective Action". This finding was of very low safety significance because the inadequate corrective action in revising the procedure did not affect the operability or availability of the auxiliary feedwater system
Inspection Report# : 2003004*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Assure that Corrective Actions were Taken to Preclude Repetition of EDG Starting Air System Relay Failures
The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." The licensee failed to assure that corrective actions were taken to preclude repetition of emergency diesel generator (EDG) starting air system relay failures, a significant condition adverse to quality. This issue was self-revealed when the failure of a starting air system relay for the Unit 2 AB EDG occurred on October 16, 2002, causing the engine to roll without a valid start signal. The inspectors subsequently identified that appropriate corrective actions to prevent repetition had not been taken following two previous age-related EDG air start relay failures in January 1999 and September 2000. The inspectors assessed this finding using the Significance Determination Process (SDP). The inspectors concluded that this issue, if left uncorrected, would become a more significant safety concern and was therefore more than a minor concern. The inspectors also concluded that this finding was associated with the mitigating systems cornerstone and adversely affected the cornerstone objective. Specifically, the repetitive EDG air start relay failures affected the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors performed a Phase 1 SDP review of this finding using the guidance provided in NRC Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and determined that this finding was a licensee performance deficiency of very low safety significance because the finding: (1) was not a design or qualification deficiency; (2) did not represent an actual loss of safety function of a system; (3) did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time; (4) did not represent an actual loss of safety function of one or more Non-Technical Specification trains of equipment designated as risk significant; and (5) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.
Inspection Report# : 2002009*(pdf)*

Significance: W May 17, 2002
Identified By: NRC
Item Type: VIO Violation
Essential Service Water Strainer Maintenance Instructions Not Appropriate to the Circumstances
Documented instructions for essential service water (ESW) pump discharge strainer maintenance did not contain adequate detail regarding critical parameters for basket installation. Consequently, faulty strainer basket installation practices contributed to the failure of an ESW pump discharge strainer basket and created the potential for debris to bypass the strainer and enter the ESW system. On August 29, 2001, the failed Unit 1 East ESW pump discharge strainer, in conjunction with the ESW system alignment with all normal and alternate diesel generator (D/G) ESW supply valves open, caused significant debris fouling of the D/G heat exchangers. While operator actions prevented the debris fouling from causing a complete loss of the D/Gs ability to perform their emergency AC power safety function, the potential for a complete loss of all emergency AC power during a loss of offsite power was determined to exist. This finding was assessed using the applicable SDP as a potentially safety significant finding that was preliminarily determined to be of substantial safety significance. Final Significance Determination for a White Finding and Notice of Violation Letter issued on October 3, 2002, EA-01-286. SUPPLEMENTAL INSPECTION SUMMARY - INSPECTION REPORT 2003-04 The NRC performed this supplemental inspection to assess the licensee's evaluation of two White findings in the Mitigating Systems Cornerstone. The first White finding involved the failure to take appropriate corrective action to prevent the repetitive failure of the Unit 2 turbine-driven auxiliary feedwater (TDAFW) pump. The second White finding involved a failed essential service water (ESW) strainer basket, caused by inadequate strainer basket installation instructions, which permitted debris to bypass the strainer and enter the essential service water system, resulting in the debris intrusion event experienced at the D.C. Cook Nuclear Power Plant on August 29, 2001. During this supplemental inspection, a significant weakness was identified with regard to the licensee's evaluation of the findings. The licensee's evaluation adequately assessed the root causes, and appropriate corrective actions were initially assigned. The inspectors identified that two corrective actions assigned to perform important extent of condition reviews were not adequately completed. These reviews were to determine the extent of condition of the adequacy of maintenance procedures and to determine the extent of condition of equipment-related condition reports that were inadequately evaluated or closed. The failure to adequately complete the extent of condition reviews was determined to be a significant weakness in the licensee's evaluation. As a result, the two White performance issues associated with the Degraded Cornerstone will not be closed at this time. SUPPLEMENTAL INSPECTION SUMMARY - INSPECTION REPORT 2003009 The NRC performed a follow-up supplemental inspection to assess the licensee's extent of condition evaluation for the two White performance issues associated with the Degraded Cornerstone. The failure to perform an adequate extent of condition evaluation was identified during the initial supplemental inspection and was considered a significant weakness in the licensee's evaluation. This resulted in the two White findings remaining open pending the licensee's completion of the extent of condition evaluation and the NRC's inspection of the evaluation. The inspectors concluded during the follow-up supplemental inspection that the licensee had completed an adequate extent of condition evaluation. As a result, the two White findings will be closed as of the end of the second quarter 2003.
Inspection Report# : 2003009*(pdf)*
Inspection Report# : 2001017*(pdf)*

Barrier Integrity

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify and take Appropriate Corrective Actions to Preclude the Failure of Reactor Coolant System

Pressure Boundary Charging Line Check Valves which were at Risk of Common Cause Failure
The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." The licensee failed to identify and take appropriate corrective actions to preclude the failure of four Unit 1 reactor coolant system pressure boundary charging line check valves (Velan Model B10-3114B-13M), which were at risk of common cause failure due to industry identified design and manufacturing defects, a significant condition adverse to quality. This issue was self-revealed when the check valves were all found to be stuck in either the full or partially open position during radiographic nonintrusive testing in May 2002. The inspectors assessed this finding using the Significance Determination Process (SDP). The inspectors concluded that this finding was associated with the barrier integrity cornerstone and adversely affected the cornerstoneobjective, and as such it was more than a minor concern. Specifically, the charging line check valves perform a safety-related function of limiting the release of reactor coolant inventory should a charging line failure occur. The failure of the valves in the open position would prohibit the performance of this function and therefore affects the objective of the barrier integrity cornerstone. The inspectors performed a Phase 1 SDP review of this finding using the guidance provided in NRC Inspection Manual Chapter (IMC) 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Because this finding involved the integrity of the reactor coolant system barrier, the inspectors determined that this finding required a Phase 2 SDP analysis. After consulting with the Regional Senior Reactor Analyst, the inspectors determined that this issue was of very low safety significance because no actual loss of safety function occurred. The inspectors concluded that no actual loss of safety function occurred based on the reported minimal force required to shut the valves (indicating they would have shut given the differential pressure applied during accident conditions) and the redundancy provided by a third check valve (1-CS-321) in the charging line. In accordance with IMC 0609, Appendix A, Attachment 1, Step 2.6, the SDP results were not evaluated for potential risk contribution due to Large Early Release Frequency because the accident sequence result was less than 1E-7 per year.
Inspection Report# : 2002009*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : September 04, 2003