D.C. Cook 2
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Jun 29, 2006
Identified By: NRC
Item Type: FIN Finding
Inadequate Preventive/Corrective Maintenance on Turbine Building Sump Overflow Check Valve 12-DR-129
The inspectors identified a finding of very low safety significance. The licensee failed to perform adequate preventive and corrective maintenance on Turbine Building sump overflow check valve 12-DR-129. As a result, the valve was found in a significantly degraded condition such that it would not function to mitigate the consequences of a design basis seiche event. No violation of regulatory requirements was identified. Immediate corrective actions to address this finding included replacing the check valve and implementing a preventive maintenance activity to ensure that it would function.

This finding was of more than minor significance because it was associated with the Protection Against External Factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during power operations since inadequate preventive and corrective maintenance led to the significantly degraded condition of 12-DR-129. Although this issue affected the ability of the check valve to mitigate the consequences of a design basis seiche event, the Regional Senior Reactor Analyst determined that this finding was of very low safety significance during a Phase 3 Significance Determination Process evaluation because considering the seiche initiating event frequency, the change in core damage frequency for this finding was calculated to be well below 1.0E-6. This finding affected the cross-cutting area of problem identification and resolution because the licensee failed to identify and correct the degraded valve condition. Corrective actions that were taken were not timely, were not commensurate with the significance of the issue, and early corrective actions were ineffective.
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 29, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadvertent Loss of Reactor Coolant System Inventory While Placing Emergency Core Cooling Systems in Standby Readiness
A finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings" was self-revealed. With Unit 2 in Mode 4 (Hot Shutdown), using an inadequate procedure, plant operators performed procedural steps to vent the residual heat removal system piping while the system was still connected to the reactor coolant system (RCS). As a result, the charging pump suction safety valve (2-SV-56) unexpectedly lifted and discharged approximately 120 gallons of water to the pressurizer relief tank. Corrective actions included revising the procedures for placing emergency core cooling systems in standby readiness and an engineering evaluation was completed to ensure that the charging pump suction header piping did not exceed its design pressure.

This finding was of more than minor significance because it was related to the Procedure Adequacy attribute of the Initiating Events cornerstone, and adversely impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the finding resulted in an unintended loss of RCS inventory with the plant shut down in Mode 4. The finding was not greater than Green because adequate mitigation capabilities were maintained, and the finding did not represent a loss of control in that less than 2 feet of RCS inventory was lost from the pressurizer. The primary cause of this finding was related to the cross-cutting area of human performance because the procedure that was used was not complete.
Inspection Report# : 2006004 *(pdf)*

Mitigating Systems

Significance: G Jun 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Potential External and Internal Flooding Impact on Safe Shutdown Equipment in the Lake Screen House
The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criteria III, "Design Control." The licensee failed to correctly translate the design basis into specifications for the essential service water (ESW) system by ensuring that ESW system components in the Lake Screen House would be protected to the 595' elevation as described in Section 10.6 of the Updated Final Safety Analysis Report, in the event of flooding due to a design basis seiche event. The licensee was evaluating corrective actions for this issue at the end of the inspection period. No immediate actions were necessary due to the present low lake level.

This finding was of more than minor significance because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences since the failure to maintain adequate design control for the affected ESW system components in the Lake Screen House could possibly have resulted in damage to safe shutdown plant equipment during a design basis seiche event. The finding was of very low safety significance because it was a design or qualification deficiency confirmed not to result in loss of operability.
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 29, 2006
Identified By: NRC
Item Type: FIN Finding
Inadequate Functionality Evaluation for Degraded Check Valve Condition
The inspectors identified a finding of very low safety significance. The licensee did not adequately evaluate the functionality of Turbine Building sump overflow check valve 12-DR-129, while the valve was in a significantly degraded condition such that it would not function to mitigate the consequences of a design basis seiche event. No violation of regulatory requirements was identified. Immediate corrective actions to address this finding included a detailed calculation to determine the potential for flooding in the emergency diesel generator (EDG) rooms to support a past operability evaluation for the EDGs.

This finding was of more than minor significance because if left uncorrected, the failure to properly evaluate the functionality of equipment important to safety could result in incorrectly concluding that the equipment was functional. The inspectors determined that this finding was related to the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Consistent with the Phase 3 Significance Determination Process evaluation performed in Section 1R06.b.2, this finding was determined to be of very low safety significance. This finding affected the cross-cutting area of problem identification and resolution because the licensee did not apply appropriate rigor and detail to its evaluation of the non-functional check valve; and as a result, the potential impact on safe shutdown equipment was not evaluated and timely corrective actions were not taken.
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Appropriate Technical Specification Surveillance Acceptance Criteria for the Emergency Diesel Generators
The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criteria III, "Design Control." The licensee failed to establish appropriate Technical Specification (TS) surveillance acceptance criteria for full load rejection testing of the emergency diesel generators with its implementation of Improved Standard Technical Specifications. An emergency TS amendment was required to revise the acceptance criteria.

This finding was of more than minor significance based on programmatic concerns identified with the issue that could lead to worse errors if not corrected. This finding was not suitable for an evaluation using the Significance Determination Process, but has been reviewed by NRC management and was determined to be a of very low safety significance. The finding was determined not to be greater than Green because there was no actual adverse impact to plant equipment. This finding affected the cross-cutting area of human performance because the licensee did not apply appropriate rigor and detail to its evaluation of the new TS surveillance acceptance criteria; and as a result, the engines could not meet the criteria when tested.
Inspection Report# : 2006004 *(pdf)*

Significance: SL-IV Jun 21, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inappropriate Deletion of Technical Requirements Manual Sections
The inspectors identified a Severity Level IV Non-Cited Violation of 10 CFR 50.59(d)(1) for the licensee's failure to perform a safety evaluation for the deletion of four sections of the Technical Requirements Manual (TRM). Specifically, the licensee deleted Sections 8.4.7, Tavg Lower Limit, 8.6.1, Ice Bed Temperature Monitoring System, and 8.6.2, Inlet Door Position Monitoring System, and 8.3.7, Post Accident Monitoring (PAM) Instrumentation, Table 8.3.7-1 without evaluating these changes per the requirements of 10 CFR 50.59.

Because the issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors, at the time of the inspection, could not reasonably determine that the Updated Final Safety Analysis Report change, which adversely affected equipment important to safety, would not have ultimately required NRC approval. The inspectors completed a significance determination of the underlying technical issue using NRC's inspection manual chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and answered "no" to the Mitigating Systems screening questions in the Phase 1 Screening Worksheet. Specifically, even though these TRM sections along with their associated surveillance requirements were deleted, the licensee was able to show that all deleted surveillance requirements had been performed satisfactorily and within their prescribed frequency in spite of the deletion. This issue was entered into the licensee's corrective action program.
Inspection Report# : 2006009 *(pdf)*

Significance: SL-IV Jun 21, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform 10 CFR 50.59 Evaluation for Modification to the 2-East Centrifugal Charging Pump
The inspectors identified a Severity Level IV Non-Cited Violation of 10 CFR 50.59(d)(1) for the licensee's failure to perform a safety evaluation for the modification of the 2-East Centrifugal Charging Pump (CCP). Specifically, the licensee performed modifications to the 2-East Centrifugal Charging Pump that required more restrictive frequency requirements to be established than were already in the Technical Specifications. Had a 10 CFR 50.59 evaluation been performed, as required, the evaluation should have shown that a change to the Technical Specifications (TS) was required so that the new required frequency value could be incorporated into the applicable TS Surveillance Requirements. This issue was entered into the licensee's corrective action program.

Because the issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors could not reasonably determine that the modification of the 2-East CCP would not have ultimately required NRC approval. The inspectors evaluated the finding using IMC 0609, Appendix A, Phase 1 screening for the mitigating systems cornerstone and determined that the finding was of very low safety significance because they were able to answer "no" to the Mitigating Systems screening questions in the Phase 1 Screening Worksheet. Specifically, while the 10 CFR 50.59 evaluation, and ultimately the required license amendment, were not performed as required, administrative controls were put into place after the modification was performed such that the CCP would always be able to perform its function.
Inspection Report# : 2006009 *(pdf)*

Significance: G Jun 21, 2006
Identified By: NRC
Item Type: NCV NonCited Violation

Non-Conservative Verification of Containment Average Air Temperature
The inspections identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” that was of very low safety significance. Specifically, verification of containment lower compartment average temperature per Surveillance Requirement 3.6.5.2 was being performed using temperature readings that were not representative (and non-conservative) of the true average temperature in the lower containment. The issue was entered into the licensee’s corrective action program.

The issue was more than minor because it was associated with the Mitigating System Cornerstone attribute of “Design Control,” and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the methodology for determining lower containment average temperature was non-conservative and did not account for the heightened temperatures that were experienced in the Steam Generator (SG) Enclosure Rooms. Had average temperature been above the TS limits, temperatures during a Design Basis Accident could have exceeded the ratings of safety related mitigating equipment thereby challenging the functionality of the equipment. This finding was of very low safety significance, because the inspectors answered “no” to all five questions under the Mitigating Systems Cornerstone column of the Phase 1 worksheet. Specifically, after performing a calculation that included the SG Enclosure Rooms, the licensee determined that under worst case historical conditions, average air temperature was 119.5 degrees which was still less than the TS requirement of 120 degrees F.
Inspection Report# : 2006009 *(pdf)*

Barrier Integrity

Significance: G Jun 29, 2006
Identified By: Self-Revealing
Item Type: FIN Finding
Heavy Load Dropped While Removing Vertical Bulkhead Blocks in Unit 2 Containment
A finding of very low safety significance was self-revealed, when the lift rig device failed and a 37 ton vertical bulkhead block dropped approximately 15 feet inside Unit 2 containment with the plant in Mode 5 (Cold Shutdown). The plant procedure utilized did not require a load cell while lifting the vertical bulkhead blocks and therefore adequate detection of load binding was not provided. Consequently, load binding during the lift was not detected and the lift rig assembly was overloaded and failed.

This finding was of more than minor significance because if left uncorrected, this issue could lead to a more significant safety concern in that a dropped heavy load could impact and adversely affect plant safety-related structures, systems or components. This finding was not suitable for an evaluation using the Significance Determination Process, but has been reviewed by NRC management and was determined to be a findings of very low safety significance. This finding was not greater than Green because no adverse consequences to plant safety-related or risk significant structures systems or components resulted from the dropped load. The primary cause of this finding was related to the cross-cutting area of human performance because the procedure that was used was not complete.
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform As-found Local Leak Rate Testing for a Containment Isolation Valve
The inspectors identified a finding of very low safety significance with an associated Non-Cited Violation of TS Surveillance Requirement 3.6.1.1. The licensee failed to perform an as-found local leak rate test (LLRT) for containment isolation valve 2-SI-189 (emergency core cooling system safety valves discharge to the primary relief tank containment isolation check valve) prior to performing maintenance that affected the valve's leak tightness as required by the plant's TSs. Immediate corrective actions to address this finding were to revise the planning and scheduling activities for testing this valve.

This finding was of more than minor significance because it was associated with the SSC [Structure, System and

Component] and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that the physical design barriers (e.g., containment) protect the public from radio-nuclide releases caused by accidents or events since the true as-found condition of 2-SI-189 for the previous operating cycle was unknown and could not be evaluated. This finding was of very low safety significance because Unit 2 was defueled at the time and containment integrity was not required. This finding affected the cross-cutting area of human performance because the licensee failed to properly sequence the valve's visual inspection activity after the as-found LLRT into its scheduling process.
Inspection Report# : 2006004 *(pdf)*

Significance: SL-IV Jun 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Submit a Required Licensee Event Report
The inspectors identified a Non-Cited Violation of 10 CFR 50.73(a)(1) because the licensee failed to submit a required Licensee Event Report within 60 days after discovery of an event requiring a report. The event involved the licensee's failure to meet Containment Leakage Rate Testing Program requirements in accordance with Technical Specification (TS) Surveillance Requirement 3.6.1.1, a condition prohibited by the plant's TSs. No immediate corrective actions were taken to address this finding; however, the issue was entered into the licensee's corrective action program.

This finding was of more than minor significance because the NRC relies on licensee's to identify and report conditions or events meeting the criteria specified in the TSs and the regulations to perform its regulatory function. Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated
with the traditional enforcement process. Consistent with the guidance in Section 7.10 and Supplement I, Paragraph D.4 of the NRC Enforcement Policy, this issue was determined to be a Severity Level IV violation. This finding affected the cross-cutting area of problem identification and resolution because the licensee incorrectly concluded that the failure to perform an as-found local leak rate test for containment isolation valve 2-SI-189 was not a condition prohibited by the plant's TSs.
Inspection Report# : 2006004 *(pdf)*

Emergency Preparedness

Significance: SL-III Oct 25, 2006
Identified By: NRC
Item Type: VIO Violation
Failure to Provide Complete and Accurate Information to the NRC Which Impacted a Licensing Decision
The inspectors identified an apparent violation of 10 CFR 50.54(q) involving 10 CFR 50.47(b)(4). Title 10, Part 50, Section 54(q) of the Code of Federal Regulations states in-part, “the nuclear power reactor licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to this part." Title10, Part 50, Section 47(b)(4) of the Code of Federal Regulations states in part, "a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee.” The licensee made and implemented a change to its emergency plan emergency action level (EAL) scheme on April 16, 2003, which appeared to decreased the effectiveness of the emergency plan without prior NRC approval.

Specifically, the licensee changed the EAL to remove the condition, “release of secondary coolant from the associated steam generator to the environment is occurring,” from the Fission Product Barrier Matrix EAL for a loss of containment barrier due to a steam generator secondary side release. The revised emergency action level, “secondary line break outside containment results in release (greater than 30 minutes) to the environment,” added a non-conservative 30 minutes before meeting this emergency action level. There is a potential that a release condition could have existed which would not have been declared, resulting in either no action or delayed action by off-site authorities when measures to protect the health and safety of the public were warranted. In a previous 1995 correspondence between the NRC and the licensee concerning a proposal to revise the licensee’s EALs, the licensee proposed to implement a similar change to its EALs; however, the NRC specifically provided a written response to the licensee which indicated that a revision to the EAL which included a 30 minute criteria was unacceptable.

The apparent violation was considered to be more than minor because the licensee made changes to the emergency plan and procedures that decreased the effectiveness of the plan without prior approval of the NRC. Because this apparent violation affected the NRC's ability to perform its regulatory function, it was evaluated using the traditional enforcement process. There were no actual emergency events associated with this EAL during the time the change was in effect; however, the failure of the licensee to meet an emergency planning standard involving assessment does have regulatory significance.

Notice of Violation Issued October 6, 2006, ML062790406.

The VIO was opened in NRC Inspection Report 05000315/316/2006502. Apparent violation AV 0500315/316/2006501-01 is updated to VIO 05000315/316/2006502-01 (Failure to Provide Complete and Accurate Information to the NRC Which Impacted a Licensing Decision).
Inspection Report# : 2006502 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Adequate Checks of the Automatic Gas Analyzer System Oxygen Monitor Channel
An inspector-identified finding of very low safety significance and an associated violation of NRC requirements were identified for the failure to perform adequate daily checks for the in-service oxygen monitor channel of the automatic gas analyzer system, as required by Technical Specifications.

The issue was more than minor because if left uncorrected the issue could become a more significant safety concern, since this monitor provides early indication of a potential explosive gas mixture in the waste gas decay system. The issue represents a finding of very low safety significance because alternate methods were available to assess the potential for an explosive gas mixture in the waste decay system, and, therefore, there was minimal actual risk to the public. A Non-Cited Violation of Technical Specification Surveillance Requirement 4.3.3.9 was identified for the failure to perform adequate daily checks for the in service oxygen monitor channel of the automatic gas analyzer system. Corrective actions planned by the licensee for this finding include enhancing the applicable procedure that governs the daily check of the oxygen monitor channel of the automatic gas analyzer to provide more specific direction to plant staff on equipment acceptance criteria.
Inspection Report# : 2006003 *(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Aug 18, 2006
Identified By: NRC
Item Type: FIN Finding

Problem Identification and Resolution

The team identified that the licensee was effective at identifying problems and incorporating them into the corrective action program. The licensee's effectiveness at problem identification was evidenced by the relatively few deficiencies identified by the team that had not been previously identified by the licensee during the review period. In general, the licensee was effectively prioritizing, evaluating and resolving problems. However, the inspectors found several examples where the documentation of an issue did not clearly indicate whether it had been properly evaluated, what the status of the corrective actions were, or whether it had been effectively resolved.

Operating experience usage was also effective, but the team found several examples where operating experience, primarily issued by the NRC, was not screened by the station or was not properly evaluated by the assigned department.

Licensee audit and self-assessments were generally through, probing, and made good use of outside resources to maintain independence. On the basis of interviews conducted during this inspection, workers at the site felt free to input safety findings into the corrective action program.

Inspection Report# : 2006008 *(pdf)*

Last modified : March 01, 2007