D.C. Cook 2
3Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: FIN Finding
Operator Feedwater Control Error Resulted in Unit 2 Reactor Trip
The inspectors identified a finding of very low safety significance associated with an error by a control room reactor operator during main feedwater system flow adjustments that resulted in a Unit 2 reactor trip. This finding did not constitute a violation of NRC requirements. Corrective actions included: the revision of the operating procedure to require the in-service main feedwater pump controller to be maintained in automatic, rather than manual control; a revision to the conduct of operations procedure to require that anytime a controller is operated in manual and the controlled parameter deviates outside the normal band, the reactor operator shall notify the Unit Supervisor; the requirement to make a control room announcement any time a controller is placed in manual, notifying all team members; and the implementation of the Human Performance Scorecard for the evaluation of individuals' performance in the course of simulator evaluations.

The inspectors determined that the finding was of more than minor significance because continued human performance errors causing plant transients would become a more significant safety concern if left uncorrected. The inspectors also concluded that this finding was associated with the Human Performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective. Specifically, the human performance error upset plant stability (caused a reactor trip). The inspectors concluded that this finding was a licensee performance deficiency of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available
Inspection Report# : 2004006*(pdf)*

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: FIN Finding
Operator Breaker Manipulation Error Resulted in Unit 2 Reactor Trip
The inspectors identified a finding of very low safety significance associated with an error by an auxiliary equipment operator while racking a reactor trip bypass breaker that resulted in a Unit 2 reactor trip. This finding did not constitute a violation of NRC requirements. Corrective actions included performing an evaluation of all auxiliary equipment operators in DB-50 breaker racking, permitting individuals to perform DB-50 racking operations only after demonstrating competency, implementing new peer checking requirements for DB-50 breaker racking activities by a qualified operator, reviewing operational activities that have a significant potential for adversely impacting plant safety or operation to determine if peer checking beyond the existing requirements is needed, and a continued emphasis on operations standards.

The inspectors determined that the finding was of more than minor significance because continued human performance errors causing plant transients would become a more significant safety concern if left uncorrected. The inspectors also concluded that this finding was associated with the Human Performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective. Specifically, the human performance error upset plant stability (caused a reactor trip). The inspectors concluded that this finding was a licensee performance deficiency of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.
Inspection Report# : 2004006*(pdf)*

Significance: N/A May 21, 2004
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection Summary for Two White Performance Indicators
The U.S. Nuclear Regulatory Commission performed this supplemental inspection to assess the licensee's evaluation of two White performance indicators in the Unplanned Scrams Per 7000 Critical Hours and the Scrams With Loss of Normal Heat Removal areas of the Initiating Events cornerstone.

This inspection was conducted in accordance with Inspection Procedure 95002, "Inspection For One Degraded Cornerstone Or Any Three White Inputs In A Strategic Performance Area," and evaluated the licensee's actions to address these White performance indicators. The inspectors concluded that the licensee performed a comprehensive evaluation of the issues, both individually and collectively. The licensee identified the underlying causal factors as an ineffective corrective action program, an ineffective equipment reliability program, and ineffective human performance improvement initiatives. The licensee's planned corrective actions were identified in the associated Common Cause Evaluation and tracked for implementation in the D. C. Cook Recovery Plan.

The inspectors did not identify any findings during their review of the licensee's evaluation; however, some disparities between the corrective

actions prescribed in the Common Cause Evaluation and the D. C. Cook Recovery Plan which were relied upon to implement these corrective actions were identified. The inspectors concluded that these disparities could impact the successful implementation of actions necessary to address the identified root causes and contributing causes which resulted in the White performance indicators. Although none of the issues identified represented a finding or violation of regulatory requirements of more than minor significance, each represented a weakness within the licensee's corrective action process.
Inspection Report# : 2004004*(pdf)*

Significance: SL-IV Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Unplanned Scrams with Loss of Normal Heat Removal Performance Indicator Reporting Failure
The inspectors identified a Severity Level IV Non-Cited Violation of 10 CFR 50.9 because the licensee failed to accurately report two Unit 2 reactor trips in the performance indicator for Unplanned Scrams with Loss of Normal Heat Removal, which resulted in the performance indicator crossing the Green-to-White threshold. The licensee subsequently counted the reactor trips in the performance indicator.

The inspectors concluded that this issue was not suitable for evaluation by the Significance Determination Process; however, it was reviewed using the guidance in Section IV of the NRC Enforcement Policy because the licensee's failure to accurately report performance indicator data impacted the NRC's ability to carry out its statutory mission. The inspectors reviewed Supplement VII of the NRC Enforcement Policy and determined that this issue was a Severity Level IV Violation.
Inspection Report# : 2004002*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: FIN Finding
Unit 2 Trip Due to Steam Flow/Feed Flow Mismatch
The inspectors identified a finding of very low safety significance associated with a human performance error by a maintenance craftsman that resulted in a Unit 2 reactor trip. This finding did not constitute a violation of NRC requirements. Corrective actions included the establishment of enhanced controls for the disconnecting and connecting of electrical leads.

The inspectors concluded that this finding was associated with the Human Performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability during power operation since the human performance error caused a reactor trip. The inspectors concluded that this finding was a licensee performance deficiency of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.
Inspection Report# : 2004002*(pdf)*

Significance: N/A Nov 21, 2003
Identified By: NRC
Item Type: FIN Finding
Supplemental Inspection Summary for White Performance Indicator
The NRC performed this supplemental inspection in accordance with Inspection Procedure 95001, "Inspection For One Or Two White Inputs In A Strategic Performance Area," to assess the licensee's evaluation associated with a White performance indicator in the Scrams With Loss of Normal Heat Removal area of the Initiating Events cornerstone. During this supplemental inspection, the inspector determined that the licensee's overall evaluation of the Scrams With Loss of Normal Heat Removal performance indicator was acceptable. The licensee utilized a structured approach to evaluate the circumstances of the individual plant trips and the collective significance of the three trips which led to the White performance indicator to identify potential common causes.

The licensee's corrective actions for each of the plant trips contributing to the White performance indicator were determined to correspond with the root and contributing causes identified by the root cause evaluations. At the conclusion of the inspection, the corrective actions were either completed or were being tracked for completion. The licensee had also established a process for performing reviews to assess the effectiveness of these corrective actions.

Inspection Report# : 2003014*(pdf)*

Mitigating Systems

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Acceptance Criteria for Heat Exchanger Tube Blockage

A finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," was identified for the failure to include adequate acceptance limits in the procedure for inspecting and cleaning the component cooling water system heat exchangers. This finding was more than minor because, if left uncorrected, the issue could become a more significant safety concern. Specifically, the testing acceptance limit deficiencies could have designated a component cooling water heat exchanger as acceptable, when the heat exchanger heat removal capability had actually degraded below its design requirements. The issue was of very low safety significance since the licensee had recently cleaned all four component cooling water system heat exchangers and operability limits were not challenged.

Corrective actions to address this issue included revising testing acceptance limits to adequately define what constituted a blocked heat exchanger tube.
Inspection Report# : 2004006*(pdf)*

Significance: G Mar 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Correct Conditions Causing Repetitive Load Swings on the Plant's Emergency Diesel Genertators
The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." The licensee failed to take effective corrective action to address obsolete and degrading emergency diesel generator (EDG) governing system components to prevent repetitive load swings on the plant's EDGs. Specifically, following engine load swings affecting the Unit 2 'CD' EDG on November 2, 2002, and on January 23, 2003, the licensee did not implement effective corrective actions to preclude recurrence of engine load swings on the Unit 2 'AB' EDG on December 7, 2003, for the same cause. The licensee subsequently restored the Unit 2 'AB' EDG to an operable status by replacing a failed electronic governing module.

The inspectors concluded that this issue was associated with the Mitigating Systems cornerstone and adversely affected the cornerstone objective. Specifically, the repetitive EDG governor control failures affected the availability, reliability, and capability of a system that responds to initiating events to prevent undesirable consequences. Although this finding represented an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, a Phase 3 Significance Determination Process analysis was performed in support of an emergency license amendment on December 9, 2003, which concluded that there was no net increase in risk associated with extending the allowed outage time for Technical Specification 3.8.1.1.b an additional 72 hours for a total of 144 hours.
Inspection Report# : 2004002*(pdf)*

Significance: G Nov 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Concurrent Performance of Emergency Operating Procedures
A finding of very low safety significance was identified by the inspector when licensee personnel failed to adhere to a procedure and closed main steam isolation valves prematurely following a reactor trip. The primary cause of this finding was related to the cross-cutting area of Human Performance.

The finding was more than minor, because the finding was associated with the Human Performance 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. This finding was of very low safety significance, since it did not impact equipment operability, did not represent an actual loss of safety function of a system or train of safety-related or risk-significant equipment, and was not potentially risk significant due to external events. Corrective actions to address this issue included revising emergency operating procedures to reduce reactor coolant system cooldown by means that did not result in the loss of the normal heat removal path to the main condenser. One Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified.
Inspection Report# : 2003014*(pdf)*

Significance: G Nov 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Address Excessive Reactor Coolant System Cooldown
A finding of very low safety significance was identified by the inspector when licensee personnel failed to take prompt and adequate corrective actions to address excessive reactor coolant system cooldown following a reactor trip. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.

The finding was more than minor because the finding was associated with the Procedure Quality 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. This finding was of very low safety significance, since it did not impact equipment operability, did not represent an actual loss of safety function of a system or train of safety-related or risk-significant equipment, and was not potentially risk significant due to external events. Corrective actions to address this issue included revising emergency operating procedures to reduce reactor coolant system cooldown by means that did not result in the loss of the normal heat removal path to the main condenser. One Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified.
Inspection Report# : 2003014*(pdf)*

Significance: G Nov 21, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Reactor Trip Emergency Operating Procedure
A finding of very low safety significance was identified by the inspector when licensee personnel failed to have an adequate reactor trip response procedure. The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution.

The finding was more than minor because the finding was associated with the Procedure Quality 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. This finding was of very low safety significance, since it did not impact equipment operability, did not represent an actual loss of safety function of a system or train of safety-related or risk-significant equipment, and was not potentially risk significant due to external events. Corrective actions to address this issue included revising emergency operating procedures to reduce reactor coolant system cooldown by means that did not result in the loss of the normal heat removal path to the main condenser. One Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified.
Inspection Report# : 2003014*(pdf)*

Barrier Integrity

Significance: G Dec 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Non-Code Calibration Block Used For Examination of Vessel-to-Flange Welds
The inspector identified a Non-Cited Violation of 10 CFR 50.55a(g)(4) associated with use of a non-Code calibration block for calibration of equipment used in ultrasonic examinations of the reactor vessel-to-flange welds for Unit 1 and Unit 2. Specifically, the calibration block exceeded the American Society of Mechanical Engineers Code specified thickness, did not have reflectors (side drilled holes) located at the required locations and did not contain square notch type reflectors.

This finding was more than minor because it could have become a more significant safety concern if not corrected. Specifically, the licensee had scheduled an ultrasonic examination of the vessel-to-flange weld during the current outage and intended to use the non-Code calibration block. Had this issue not been identified, it would have resulted in a non-Code examination, which could have resulted in undetected weld flaws remaining in-service (e.g., a degraded reactor coolant system boundary). The finding was of very low safety significance because other examinations of the reactor vessel-to-flange welds had been conducted in accordance with the Code. To address this issue, the licensee planned to generate procedures to better control the process for these types of inspections.
Inspection Report# : 2003012*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Jan 08, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to Follow the Radiation Work Permit and the Procedure Governing Radiation Worker Practices During Reactor Coolant Filter Change-Out Work
A self-revealed finding of very low safety significance and an associated Non-Cited Violation were identified when an individual continued to work through both accumulated dose and dose rate electronic dosimetry (ED) alarms, and failed to fully utilize intended radiation shielding while changing-out the Unit 2 reactor coolant filter. As a result, the worker received unintended dose for the work activity.

The finding was more than minor because the failure to stop work upon receiving ED dose and dose rate alarms, the failure to adequately use time, distance and shielding fundamentals in the execution of the filter change-out work coupled with inadequate radiation protection technician job coverage were associated with the "Human Performance" attribute of the Occupational Radiation Safety Cornerstone. The finding affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. The finding was of very low safety significance because the worker's radiation exposure was low relative to regulatory limits, and because there was not a

substantial potential for a worker overexposure; nor was the licensee's ability to assess worker dose compromised. To address this issue, the licensee implemented several corrective actions to ensure improved in-field oversight of work in high radiological risk areas, and to ensure workers better understand their responsibilities as radiation workers.
Inspection Report# : 2003016*(pdf)*

Significance: SL-IV Jun 30, 2003
Identified By: NRC
Item Type: VIO Violation
Deliberate Failure to Follow Radiation Protection Requirements
Severity Level IV Violation. On May 16, 2003, the NRC issued a Notice of Violation to the licensee associated with an incident that occurred at the D. C. Cook Nuclear Power Plant on January 28, 2002. The incident involved an employee of the Framatome Corporation, a contractor at the D. C. Cook plant, that failed to follow the instructions of a radiation protection technician and subsequently failed to immediately exit the work area in the Unit 2 Containment Building when the employee's electronic dosimetry alarmed. The NRC Office of Investigations investigated the matter and concluded that the individual deliberately failed to follow radiation protection requirements.

Since the violation was determined to be deliberate, the NRC did not assign a significance to the violation using the Significance Determination Process. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation was categorized at Severity Level IV.
Inspection Report# : 2003006*(pdf)*

Public Radiation Safety

Significance: W Jan 08, 2004
Identified By: NRC
Item Type: VIO Violation
Failure to Prepare a Shipment of Radioactive Waste to Satisfy Department of Transportation External Package Radiation Level Limits
A self-revealed finding preliminarily assessed to be greater than Green and an associated apparent violation were identified for the failure to prepare a package of radioactive material for shipment, so that under conditions normally incident to transportation, the radiation level does not exceed 200 millirem/hour at any point on the external surface of the package. Package surface radiation levels in excess of 200 millirem/hour were identified by a waste processing contractor upon receipt of the shipment from the licensee.
The finding was more than minor because it was associated with the "Program and Process" attribute of the Public Radiation Safety Cornerstone, and affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain. Also, the issue involved an occurrence in the licensee's radioactive material transportation program that was contrary to NRC and Department of Transportation regulations. The finding was determined preliminarily to be of low to moderate safety significance because the transportation problem involved an external package radiation level that exceeded limits by 25 percent and because the area of elevated radiation on the package was determined to be accessible to a member of the public during conditions normally incident to transportation. To address this issue, the licensee planned to revise procedures to require load plans and to specify which survey instrumentation is to be used for package surveys, and to provide training to its staff involved in radioactive material shipments.

Final Significance Determination for a White Finding and Notice of Violation Letter Issued on March 12, 2004, EA-04-006.

The NRC performed this supplemental inspection to assess the licensee's evaluation of a White performance issue in the Public Radiation Safety Cornerstone. Specifically, the supplemental inspection assessed the adequacy of the licensee's evaluation, extent of condition/cause review and corrective actions associated with one White input in the public radiation safety cornerstone which resulted from a radioactive waste shipment problem in October 2003. Radiation Protection Inspection Report No. 05000315/2003016(DRS); 05000316/2003016(DRS) provided the details of the shipment problem. This problem was characterized as a White finding and was determined to involve a violation of Department of Transportation regulations, as documented in the NRC's final significance determination report (Inspection Report No. 05000315/2004005(DRS); 05000316/2004005(DRS)) dated March 12, 2004.

During this "Inspection for One or Two White Inputs in a Strategic Performance Area," performed in accordance with Inspection Procedure 95001, the inspector determined that the licensee performed an adequate evaluation of the specific performance issue and that comprehensive corrective actions were completed to address each of the specific causes. The licensee identified the specific causes as inadequate loading of the package and inadequate radiation surveys, precipitated by organizational/programmatic failures and deficiencies with worker skills/knowledge. Corrective actions included procurement of additional instrumentation, procedural changes, the development of a new procedure, expanded supervisory involvement/oversight in shipment activities and training for staff involved in shipments.

The inspector did not identify any findings or significant concerns associated with the licensee's evaluation of the specific performance issue; however, deficiencies with the scope of the licensee's overall evaluation and the depth of its extent of cause review were disclosed. In particular, the licensee's evaluation failed to explore the potential for programmatic causes or look for indications of higher level problems with those processes or systems intended to identify issues at an early stage such as the corrective action and oversight programs.

Given the licensee's progress in evaluating and correcting the problems with the radioactive material transportation program that resulted in the

White finding, this public radiation safety cornerstone performance issue will not be held open beyond the normal four quarters provided in NRC Manual Chapter 0305, "Operating Reactor Assessment Program."
Inspection Report# : 2004005*(pdf)*
Inspection Report# : 2004008*(pdf)*
Inspection Report# : 2003016*(pdf)*

Significance: G Oct 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conduct an Adequate Radiological Survey
A finding of very low safety significance was self-revealed when a second survey of a valve that was previously surveyed and unconditionally released from the radiologically controlled area identified that the valve was contaminated. The primary cause of this finding was related to the cross-cutting area of Human Performance.

The finding was more than minor because this finding was associated with the Human Performance and Program and Process attributes of the Public Radiation Safety cornerstone and adversely impacted the cornerstone objective of ensuring adequate protection of the public health and safety from exposure to radioactive materials released or potentially released into the public domain. The finding was of very low safety significance because the public radiation exposure resulting from the problem was low and the finding was not repetitive. To address this issue, the licensee performed a thorough extent of condition evaluation to ensure that contaminated residue was identified which included radiation surveys in offsite areas and of personal items located outside the radiologically controlled area. One Non-Cited Violation of Technical Specification 6.8.1 regarding licensee procedures that govern the unconditional release of radioactive material was identified.
Inspection Report# : 2003010*(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: SL-III Jun 04, 2004
Identified By: NRC
Item Type: VIO Violation
Failure to Provide Complete and Accurate Information to the NRC Which Impacted A Licensing Decision.
D. C. Cook management personnel informed NRC Region III by letter dated March 24, 2004, that one senior reactor operator had a pre-existing medical condition (since 1996) that required the presence of another qualified individual (i.e., "no solo") when performing licensed duties and requested a "no solo" license restriction for the individual. The letter from the company physician also described a medication the individual was taking for the medical condition. The medical condition described by the physician was considered a disqualifying condition in accordance with American National Standards Institute/American Nuclear Society (ANSI/ANS)-3.4 - 1983, "American National Standard Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants." On December 28, 1999, the licensee provided information to the NRC regarding the medical status of the same individual applying for a renewal of the individual's senior reactor operator license with no recommendation for a "no solo" license. The individual's license was renewed by the NRC on February 1, 2000, based on the information provided by the licensee on December 28, 1999. Again, the medical condition was considered a disqualifying condition in accordance with ANSI/ANS-3.4 - 1983, and should have been reported to the NRC on NRC Form 396 for the renewal of the applicant's license requesting a "no solo" restriction on the individual's license. Therefore, the information provided to the NRC on December 28, 1999, was material to the NRC licensing action. [Note: The information concerning the individual's specific medical condition is considered medical privacy information under 10 CFR 2.390(2)(6) and is not specifically discussed here.]

As noted above, Region III received a letter from the D. C. Cook Nuclear Power Plant dated March 24, 2004, requesting a "no solo" license restriction for the individual. Region III received another letter from the D. C. Cook Nuclear Power Plant dated May 20, 2004, notifying the NRC that the recommendation of the "no solo" license condition for the individual not be implemented. The letter stated that upon further review of the individual's medical records, the company physician determined that the individual met ANSI/ANS-3.4 - 1983 to work as an operator in a multi-person facility; therefore, no license condition for solo operation was required. The NRC's medical officer again determined on May 26, 2004, that the operator required a "no solo" restriction to the operator's license. Since NRC intervention was required to identify the requirement for the operator to have a "no solo" restriction, this apparent violation was considered NRC identified.

Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process. The finding was determined to be of low safety significance because the operator had not acted in a solo capacity prior to the license being amended. However, the regulatory significance was important because the incorrect information was provided under a signed statement to the NRC and impacted a licensing decision for the individual. The issue was preliminarily determined to be an apparent violation of 10 CFR 50.9.

AV Closed. Notice of Violation Issued September 29, 2004.
Inspection Report# : 2004007*(pdf)*

Significance: N/A Dec 19, 2003
Identified By: NRC
Item Type: FIN Finding
Summary Conclusion PI&R Inspection
The inspectors concluded that the licensee's corrective action program attributes enabled timely problem identification commensurate with the significance level and that the threshold for problem identification was low. Performance Assurance and self assessment reports identified issues for the plant to resolve, including issues with corrective action implementation. The significance level of identified problems was appropriately characterized in most cases.

Root cause evaluations were thorough and appropriate corrective actions for significant conditions adverse to quality were identified. However, several examples were identified by the licensee where corrective actions to prevent recurrence of significant conditions adverse to quality were not effective. An adverse performance trend in the areas of root cause identification and corrective action implementation was identified during the previous Problem Identification and Resolution inspection. The inspectors determined that corrective action program performance issues continued to occur in the areas.
Inspection Report# : 2003015*(pdf)*

Last modified : December 29, 2004