

D.C. Cook 2

1Q/2005 Plant Inspection Findings

Initiating Events

G**Significance:** 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\(pdf\)](#)**G****Significance:** 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\(pdf\)](#)

Mitigating Systems

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Inadequate Test Procedure for Testing the Unit 2 West Centrifugal Charging Pump Discharge Check Valve

The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with a self-revealed event. The licensee failed to perform testing of the Unit 2 West centrifugal charging pump discharge check valve with a procedure that was appropriate to the circumstances. This resulted in operators over-pressurizing the low pressure side of the charging pump and a portion of the pump's suction piping up to and including the isolation valve. The licensee replaced the entire pump and the suction piping up to and including the suction valve and implemented appropriate changes to the test procedure to prevent a recurrence. This finding affected the cross-cutting issue of human performance (personnel).

The inspectors determined that this finding was more than a minor safety concern because it was associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences since the West charging pump was rendered unavailable for an extended period of time to correct the problem. Although this issue affected the availability of the West charging pump, the inspectors concluded that because the East charging pump remained operable and because additional sufficient mitigating capability existed, this issue was of very low safety significance.

Inspection Report# : [2005002\(pdf\)](#)

Significance:  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\(pdf\)](#)

Barrier Integrity

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Unit 2 Containment Ventilation Isolation Function Rendered Inoperable During Core Alterations

The inspectors identified a Non-Cited Violation of Technical Specifications (TS) 3.0.4, 3.9.4.c, and 3.9.9 associated with a self-revealed event. The licensee failed to maintain both trains of the Unit 2 containment purge and exhaust isolation valves' automatic isolation function operable during core alterations and commenced core alterations without meeting the applicable TS Limiting Conditions for Operation associated with the automatic isolation function. The licensee restored both trains of the automatic isolation function to an operable status upon discovery and implemented appropriate process controls to prevent a recurrence. This finding affected the cross-cutting issue of human performance (personnel/organization).

The inspectors determined that this issue could become a more significant safety concern if left uncorrected and was therefore more than a minor concern. Specifically, the failure to correctly implement the above TS requirements could reasonably result in a release of radioactivity in the event of a fuel handling accident in the Containment Building prior to identification of the inoperability of the automatic isolation function and manual closure of the valves. Although this issue affected the integrity of the reactor containment during core alterations, the inspectors concluded that because the Unit 2 containment purge and exhaust isolation valves could have been manually closed by operators in the Control Room and because the Containment Building radiation monitors and high radiation alarm function remained operable during this time, this issue was of very low safety significance.

Inspection Report# : [2005002\(pdf\)](#)

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Significance: Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Unit 2 Containment Integrity and Automatic Isolation Function for Non-Essential Service Water Supply and Return Lines to Containment Instrument Room East Ventilation Until Rendered Inoperable

The inspectors identified a Non-Cited Violation of TS 3.0.4, 3.6.1.1, 3.6.1.2, and 3.6.3.1 associated with a self-revealed event. The licensee failed to maintain drain valves between redundant containment isolation valves in the non-essential service water supply and return lines for the Unit 2 containment instrument room east ventilation unit closed as required to meet containment integrity, containment leakage, and containment isolation valve requirements. In addition, the licensee changed operational modes without meeting the applicable TS Limiting Conditions for Operation associated with TS 3.6.1.1 and 3.6.3.1. The licensee restored compliance with the above requirements by closing the inboard containment isolation valves and affected drain valves upon discovery and implemented corrective actions to prevent a recurrence, which included procedure changes to assure continuity of configuration control. This finding affected the cross-cutting issue of human performance (personnel/organization).

The inspectors determined that this issue could become a more significant safety concern if left uncorrected and was therefore more than a minor concern. Specifically, the failure to correctly implement the above TS requirements could reasonably result in a release of radioactivity to the environment in the event of an accident in the Containment Building. Although this issue affected the integrity of the reactor containment, the inspectors concluded that the issue was of very low safety significance because the very small diameter holes in the ventilation unit cooling coils and the small diameter drain lines would be a very small leakage path and would not have a significant impact on the Large Early Release Frequency.

Inspection Report# : [2005002\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

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Significance: Dec 17, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure To Promptly Correct Radiological Survey Maps

A finding of very low safety significance was identified by the inspectors when licensee personnel failed to adequately address repetitive radiological posting errors. The issue was more than minor since it was associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation.

The finding was of very low safety significance since the issue did not directly impact As Low As Reasonably Achievable (ALARA) planning or work controls, was not associated with an overexposure or a substantial potential for an overexposure, or compromise the licensee's ability to assess dose. As part of the licensee's immediate corrective actions, areas with survey maps which were outdated were immediately updated to reflect the most recent survey results. One Non-Cited Violation of Technical Specification 6.8.1 was identified.

Inspection Report# : [2004014\(pdf\)](#)

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

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Dec 17, 2004

Identified By: NRC

Item Type: FIN Finding

Problem Identification and Resolution

The inspectors concluded that the licensee's corrective action program was adequately identifying, prioritizing, evaluating and resolving problems. The conclusion of inspectors, largely born out in the opinions of the licensee staff who were interviewed, was that the identification of issues was good, but that problem resolution, though improved, needed further improvement. Licensee efforts through a Recovery Plan appeared to have a positive effect on problem resolution and the issues identified by the inspectors were of very low significance. The inspectors also concluded, based on the activities performed, that there was no evidence to support that management did not foster an environment where workers felt free to raise safety issues.

Inspection Report# : [2004014\(pdf\)](#)

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\(pdf\)](#)

Last modified : June 17, 2005