

D.C. Cook 2

2Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Prompt Corrective Actions for Conditions Adverse to Quality

The inspectors identified two examples of a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," associated with the review of operating experience information. Licensee personnel failed to take prompt and effective corrective actions to address asbestos-filled spiral wound gaskets subject to limited shelf life, which resulted in a steam leak from the Unit 2 pressurizer manway cover. The licensee also failed to take prompt and effective corrective actions to address tempered 414 stainless steel centrifugal charging pump shafts susceptible to high cycle fatigue cracking, which resulted in the failure of the Unit 1 west charging pump. The licensee subsequently replaced the failed components. The inspectors considered each of the two examples separately when completing the SDP review since each example occurred apart in time and neither one influenced the other.

The failure of the Unit 2 pressurizer manway gasket was associated with the equipment performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. Specifically, the manway gasket failure resulted in reactor coolant system (RCS) leakage that necessitated the reactor be shut down for repair. The inspectors determined that this example was of very low safety significance during a Phase 1 SDP evaluation because it would not likely result in exceeding the Technical Specification limit for identified RCS leakage and would not likely affect other mitigation systems, resulting in a total loss of their safety function. As part of the licensee's immediate corrective actions, the gasket was replaced.

The Unit 1 charging pump failure was associated with the equipment performance 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. The inspectors performed a Phase 1 SDP review of this finding. The inspectors determined that the additional outage time for the Unit 1 west charging pump was a degradation of the Mitigating System Cornerstone; however, this finding 1) was not a design deficiency or qualification deficiency confirmed to result in a loss of function per Generic Letter 91-18; 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 seismic, flooding, or a severe weather initiating event. Therefore, the finding was considered to be of very low safety significance. As part of the licensee's immediate corrective actions, the charging pump was replaced.

Inspection Report# : [2005004\(pdf\)](#)

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\(pdf\)](#)

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\(pdf\)](#)

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

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\(pdf\)](#)

Inspection Report# : [2005004\(pdf\)](#)

Last modified : August 24, 2005