

# D.C. Cook 1

## 1Q/2009 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Mar 31, 2009

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to Follow the Work Control Process**

A finding of very low safety significance was identified by the inspectors for the failure to follow the work control process during the execution of a work order associated with the Unit 1 turbine repair project. Specifically, failure to follow established processes resulted in workers cutting into a pressurized control air system line. The primary cause of this finding was related to the cross cutting area of Human Performance because licensee personnel failed to appropriately coordinate work activities by incorporating actions to address the impact of changes to the work scope (H.3(b)).

The finding was determined to be more than minor because the failure to follow the work control process could under different circumstances adversely affect safety related systems and personnel safety. The issue was of very low safety significance because the safety function guidelines for core heat removal, inventory control, power availability, containment integrity, and reactivity control were satisfied. No violation of NRC requirements occurred.

Inspection Report# : [2009002](#) (*pdf*)

**Significance:**  Oct 17, 2008

Identified By: NRC

Item Type: FIN Finding

#### **Failure to Provide Adequate Operator Response Procedures for Fire Protection System Operation**

A finding of very low safety significance was identified by the team for the failure to have appropriate procedures for control room operator actions. Specifically, a control room annunciator response procedure for a fire protection alarm panel failed to provide appropriate guidance for diagnosing a fire protection system failure as evidenced by the simultaneous operation of all three fire pumps. The licensee entered the issue into their corrective action program and planned to revise the procedure.

The finding was determined to be more than minor because the failure to provide adequate procedural guidance contributed towards operators failing to recognize that a fire protection system pipe break had occurred. The issue was of very low safety significance because there was sufficient pumping capacity to maintain system pressure for a substantive period of time.

Inspection Report# : [2008009](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to identify unacceptable interference between the Unit 1 safety injection system piping and the remote strainer waterway in the annulus.**

The inspectors identified a finding of very low safety significance with an associated Non-cited Violation of 10 CFR

50, Appendix B, Criterion XVI, "Corrective Action." Licensee personnel failed to identify unacceptable interference between the Unit 1 Safety Injection (SI) system piping and the remote strainer waterway in the annulus, rendering the emergency core cooling system (ECCS) for Unit 1 in a degraded condition. For corrective actions, licensee personnel planned to install additional supports to the SI piping during the next scheduled Unit 1 refueling outage in the fall of 2009.

This finding was more than minor because it could become a more significant safety concern if left uncorrected. Specifically, the close proximity of the SI piping to the remote strainer waterway resulted in the ECCS being in a degraded condition because the SI piping would contact the strainer during an operating basis earthquake event concurrent with a loss of cooling accident. This finding was of very low safety significance because no actual loss of safety function occurred. This finding was associated with a cross-cutting aspect in the area of problem identification and resolution regarding corrective action program. (IMC 0305, P.1(c))

Inspection Report# : [2008003](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to review emergency operating procedures to determine if they were impacted by plant modification.**

The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criteria V, "Instructions, Procedures and Drawings." Licensee personnel failed to review the Unit 1 emergency operating procedures to determine if the procedures were impacted by the plant modification that removed the check valves from the essential service water (ESW) cooling water supplies to the emergency diesel generators. Consequently, the emergency operating procedures were not revised to include appropriate guidance when aligning ESW cooling to the emergency diesel generators after the modification was installed. As an interim corrective action, caution tags were placed on the control room switches utilized for aligning ESW to the emergency diesel generators to provide appropriate guidance to the operators. Licensee personnel also planned on revising the emergency operating procedures.

This finding could become a more significant safety concern if left uncorrected and therefore was more than minor. Specifically, the emergency operating procedures contained inadequate guidance that could result in opening both the normal and alternate ESW supply valves to the emergency diesel generators. Consequently, the design function of the valves to isolate one train of ESW from the other would be adversely impacted. This finding was of very low safety significance because no actual loss of safety function occurred. This finding was associated with a cross-cutting aspect in the area of problem identification and resolution regarding corrective action program. (IMC 0350, P.1(a))

Inspection Report# : [2008003](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to adequately implement surveillance test inspection requirements for the Unit 1 ECCS recirculation sump.**

The inspectors identified a finding of very low safety significance and a Non Cited Violation of 10 CFR 50, Appendix B, Criteria V, "Instructions, Procedures, and Drawings." The licensee failed to adequately implement surveillance test inspection requirements for the Unit 1 ECCS recirculation sump. The inspectors identified instances where the licensee did not correctly implement procedural requirements for conducting the recirculation sump inspection or where the sump inspection procedure lacked sufficient detail to ensure that the sump would support ECCS operability. In addition, procedural controls were inadequate to ensure that the main strainer bottom panel back rail was properly installed with all of the bolts torqued when installation of the remote strainer and waterway plant modification was completed. The licensee corrected the inspector identified problems with the recirculation sump prior to Unit 1 entering Mode 4.

This finding could become a more significant safety concern if left uncorrected and was therefore more than a minor

concern. The failure to adequately perform surveillance testing could result in the failure to identify degraded or inoperable safety-related equipment. This finding was of very low safety significance because the recirculation sump was not required to be capable of performing a safety-related function immediately following the inadequate surveillance. This finding was associated with a cross-cutting aspect in the area of human performance regarding resources (IMC 0305, H.2(c))

Inspection Report# : [2008003](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Comply with TS SR 3.6.1.1. Failure to perform and as-found LLRT for containment isolation valves**

The inspectors identified a finding of very low safety significance with an associated Non Cited Violation of Technical Specification Surveillance Requirement 3.6.1.1. Licensee personnel failed to perform an as-found local leak rate test as required for containment isolation valves 2-WCR-922 and 2-WCR-923 (Train 'A' and Train 'B' non essential service water return from upper containment ventilation unit #1) prior to performing maintenance that affected the valves' leak tightness. This condition prohibited by Technical Specifications was subsequently reported to the NRC in accordance with 10 CFR 50.73(a)(2)(i)(B) and as left leak rate tests were completed satisfactorily.

This finding was of more than minor significance because the Barrier Integrity 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 was adversely affected since the as-found condition of containment isolation valves 2-WCR-922 and 2-WCR-923 was unknown and could not be evaluated. This finding was of very low safety significance because it did not involve a failure to maintain the capability to close containment and did not involve the hydrogen igniters. This finding was associated with a cross-cutting aspect in the area of problem identification and resolution regarding corrective action program (IMC P.1(d)).

Inspection Report# : [2008003](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Jun 30, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

### **Failure to effectively implement dose reducing radiological and engineering controls associated with modifications to the reactor recirculation sump strainer during U2C17.**

A self-revealed finding of very low safety significance was identified for the failure to effectively implement dose reducing radiological and engineering controls consistent with maintaining occupational doses as-low-as-is-reasonably-achievable (ALARA). The failure resulted in an actual dose outcome that was not consistent with the planned, intended dose for work associated with modifications to the reactor recirculation sump strainer during Refuel Outage U2C17. Corrective actions were implemented to address organization and programmatic deficiencies, as well as capturing lessons learned to support the detailed planning necessary for the installation of the modification on Unit 1.

The finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone

attribute of ALARA planning/dose projection, and affected the cornerstone objective of programs and processes for ensuring adequate protection of worker health and safety from exposure to radiation, in that, ineffective work control and ALARA planning deficiencies contributed to an actual increase in worker doses in excess of five person-rem and exceeded the licensee's initial intended dose estimates by more than 50 percent. This finding was of very low safety significance because it did not involve: (1) an overexposure; (2) a substantial potential for an overexposure; or (3) an impaired ability to assess dose. It did involve ALARA planning and controls; however, the 3-year rolling average for DC Cook Plant is less than SDP threshold of 135-person-rem for Pressurized Water Reactors. The finding was determined to be associated with a cross-cutting aspect in the area of human performance regarding work controls (IMC 0305 H.3(a)).

Inspection Report# : [2008003](#) (*pdf*)

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## Public Radiation Safety

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### Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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### Miscellaneous

**Significance:** N/A Aug 29, 2008

Identified By: NRC

Item Type: FIN Finding

#### PI&R Inspection Summary

The inspection team concluded that, based on the samples reviewed, the corrective action (CA) program was capable of effectively identifying, evaluating, and resolving issues. The licensee staff's actions were in compliance with the facility's CAP and 10 CFR Part 50, Appendix B requirements. Specifically, the inspectors concluded that licensee personnel were identifying plant issues at a low threshold, entered the plant issues into the station's CA program in a timely manner, performed an adequate evaluation of the issue and implemented corrective actions in an effective manner. Minor examples of inadequate implementation of the processes were observed and the inspection record indicated that several issues were self-revealed or identified by external organizations. Licensee performance with operating experience, self assessments, audits and maintaining a safety conscious work environment was effective.

Inspection Report# : [2008007](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### Failure to Comply with TS 5.2.2.d, Overtime Restrictions

The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of TS 5.2.2.d. The licensee failed to adhere to the TS overtime restrictions for personnel performing safety related work during the Unit 1 Cycle 22 refueling outage specified in NRC Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours." The licensee approved blanket overtime requests for several hundred workers performing outage work activities. Licensee personnel entered this issue into its corrective action program for evaluation.

This finding was of more than minor significance because the excessive work hours would increase the likelihood of human errors during refueling outage activities, which if left uncorrected could become a more significant safety

concern. Consistent with the guidance in Inspection Manual Chapter (IMC) 0612, Section 05.04.c, this finding was reviewed by NRC management and was determined to be a finding of very low safety significance because there were no actual adverse plant or equipment conditions identified that were attributed to worker fatigue. This finding was associated with a cross-cutting aspect in the area of human performance regarding resources. (IMC 0305 H.2(c))

Inspection Report# : [2008003](#) (*pdf*)

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