

Harris 1

2Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Jun 30, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERROR DURING ESSENTIAL SERVICES CHILLED WATER (ESCW) TRAIN SWAP

Green. A self-revealing non-cited violation (NCV) of TS 6.8.1, which requires written procedures to be implemented for plant operations, was identified for failure to properly implement an essential services chilled water (ESCW) system procedure. A control room operator using the incorrect section of an ESCW procedure, cross-connected the two trains of the system. This led to depressurization of the running train, pressurization of the standby train, and lifting of a relief valve in the standby train resulting in volume loss. Failure of the relief valve to reseal led to additional water volume loss and depressurization of the standby train.

The finding is greater than minor because if left uncorrected it would become a more significant safety concern due to the loss of water from the ESCW system. The finding is associated with the configuration control attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding is considered to have very low safety significance (Green) because the safety functions of the ESCW trains were not lost at the same time and the safety function of neither train was lost for greater than the allowed technical specification outage time. The finding was related to the cross-cutting area of human performance because the operator used the incorrect section of the plant operating procedure resulting in the depressurization of one train of ESCW.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correct a TDAFW Pump Condition Adverse to Quality

Green. An inspector-identified finding and non-cited violation of 10CFR50, Appendix B, Criterion XVI, "Corrective Action" was identified for failure to promptly correct a condition adverse to quality. The licensee had identified, but did not implement prompt corrective action for a known condition adverse to quality. Specifically, although the design application of specific resistor in the turbine-driven auxiliary feedwater (TDAFW) pump speed control circuitry was determined to be deficient in March 2004, the resistor was not upgraded. The inspectors identified that the licensee did not evaluate this additional information to implement the upgrade sooner. Not reacting to the March 2004 information and not correcting the problem sooner, contributed to the failure of the TDAFW pump on January 5, 2005. The finding is more than minor because it affects the Mitigating Systems Cornerstone attribute of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The finding is also associated with the cornerstone attribute of equipment availability and reliability. NRC Inspection Manual Chapter 0609, Appendix A was used to evaluate this finding. Phase 2 and Phase 3 Significance Determination Process analyses determined that this finding is of very low safety significance (Green) because of an exposure time of 3.5 days and that, following the failure of the TDAFW to start, the pump could be started and controlled by plant operators. This finding is related to the cross-cutting area of problem identification and resolution due to the failure to promptly resolve a known condition adverse to quality.

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

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: FIN Finding

Unnecessary Increase in Risk of Losing the Decay Heat Removal Key Safety Function

Green. The inspectors identified a finding involving the management of maintenance activities during a refueling outage resulting in an unnecessary increase in risk of losing the decay heat removal key safety function. Work conducted during the refueling outage unnecessarily increased the risk of a loss of core shutdown cooling by conducting intrusive electrical maintenance on the 1A-SA vital electrical bus while the 'A' residual heat removal pump was being used for core cooling. Concurrently, the reactor coolant system was depressurized, rendering steam generators unavailable for natural circulation cooling and time to core boiling was relatively low. This finding is more than minor because it is associated with the Mitigating Systems Cornerstone attribute of configuration control of shutdown equipment used to mitigate the

consequences of accidents, and the objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Therefore, the issue was assessed using the Significance Determination Process (SDP). NRC Inspection Manual Chapter 0609, Appendix G, "Shutdown Safety SDP" figure 1 and checklist 3 were applicable for the phase 1 evaluation of this issue. Although the finding increased the likelihood that a loss of decay heat removal would occur, the event's significance is bounded by the Phase 2 and 3 evaluations performed in response to NCV 05000400/2004006-02. The evaluation determined that the interruption of decay heat removal event was of very low safety significance (Green). Therefore, this finding, which involved increasing the likelihood of an interruption, is also of very low safety significance (Green).

Inspection Report# : [2004006\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Failure to Provide an Adequate Isolation for the Disassembly of CVCS Valve 1CS-243

Green. A self-revealing non-cited violation of Technical Specification 6.8.1 was identified for failure to adequately implement work control procedures, leading to draining approximately 1250 gallons of contaminated water from the refueling water storage tank and the volume control tank to the reactor auxiliary building during a refueling outage. The water drained due to an inadequate boundary clearance hung for work on a chemical and volume control system valve. This finding is more than minor because, if left uncorrected, it would become a more significant safety concern due to the potential to damage plant equipment, and drain the refueling water storage tank. The finding was associated with the configuration control attribute of the Mitigating Systems Cornerstone. NRC Inspection Manual Chapter 0609, Appendix G was used to evaluate this finding. The finding did not require quantitative analysis and was of very low safety significance because it did not affect the ability of the licensee to maintain shutdown event mitigation capability. The finding was also related to the cross-cutting area of human performance because failure to adhere to both a valve isolation and a clearance boundary procedure contributed to initiating the draindown.

Inspection Report# : [2004006\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Promptly Identify and Correct Flow Paths Which Bypassed the Containment Sumps' Screens

Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, for failure to promptly identify and correct a condition adverse to quality. The condition adverse to quality was the presence of flow paths in the top of the containment recirculation sump structures which bypassed the containment sumps' screens and had the potential to adversely impact emergency core cooling system (ECCS) performance during containment recirculation. This finding is more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events (loss-of-coolant-accident) to prevent undesirable consequences (core damage). The finding was associated with the design control attribute of the cornerstone. NRC Inspection Manual Chapter 0609, Appendix A was used to evaluate this finding. The finding is considered to be of very low safety significance (Green) because the bypass flow paths did not result in a loss of safety function. This finding was also related to the cross-cutting area of problem identification and resolution because the condition of the sumps had not been properly identified and corrected by the licensee during previous containment walkdowns.

Inspection Report# : [2004006\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Failure to Follow the Procedure for Taping Leads Lifted From Time Delay Relay 2-1/1711

Green. A self-revealing non-cited violation of Technical Specification 6.8.1 was identified for a failure to adequately implement maintenance procedures for electrical maintenance on the 1A-SA switchgear during a refueling outage. During relay calibration, technicians failed to adequately tape the relay leads in order to prevent the leads from short-circuiting and causing the loss of the 1A-SA vital bus and 'A' residual heat removal pump. The 'A' residual heat removal pump was in service, providing core cooling, at the time the bus was lost. This finding is more than minor because it affected the Mitigating Systems Cornerstone safety function of core decay heat removal and increased the likelihood that a loss of decay heat removal would occur due to the loss of power to the 1A-SA bus. NRC Inspection Manual Chapter 0609, Appendix G was used to evaluate this finding. Phase 2 and 3 analyses determined that this finding is of very low safety significance (Green) because decay heat removal was only temporarily interrupted, power to the 1A-SA bus was restored automatically by the 1A EDG, the 'A' RHR train was restarted promptly (four minutes), and the 'B' RHR train was continuously available for decay heat removal if it was needed. The finding was also related to the cross-cutting area of human performance because the performance deficiency was identified as the failure of maintenance personnel to adequately tape the lifted leads.

Inspection Report# : [2004006\(pdf\)](#)

G**Significance:** Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Inadequate Design Results in FWIV's Being Unable to Provide Containment Isolation

Green. A self-revealing finding and non-cited violation of 10CFR50, Appendix B, Criterion III, "Design Control," was identified for the implementation of an inadequate design change, Engineering Service Request (ESR) 97-0233. The inadequate design change resulted in damage to the seats of all three feedwater isolation valves (FWIV). The damaged seats existed for a period of time greater than the allowed inoperability time specified in Technical Specification 3.6.3. The finding is more than minor because it affects the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radio nuclide releases caused by accidents or events, and is associated with the cornerstone attribute of design control. The finding also affected the Initiating Events cornerstone attribute of design control due to the increased likelihood of FWIV stem separation and reactor trip at higher reactor power. NRC Inspection Manual Chapter 0609, Appendix A and Appendix H were used to evaluate this finding. A Phase 2 Significance Determination Process analysis determined that this finding is of very low safety significance (Green) because the upstream feedwater valves were available for feedwater isolation and the loss of the power conversion system was not considered because the valve stems in the A and B FWIV were not degraded. Inspection Report# : [2005002\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

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

Miscellaneous

Significance: N/A Oct 29, 2004

Identified By: NRC

Item Type: FIN Finding

Special Inspection : Haris Loss of Shutdown Cooling Event Review

The inspectors determined that the exact circumstances surrounding the initiating event could not be conclusively determined. The most probable cause was a failure to adequately insulate leads lifted from a degraded grid voltage time delay relay. A subsequent short circuit caused the loss of power to a 6.9 KV emergency bus and the operating residual heat removal (RHR) pump. The licensee adequately evaluated both the initiating event and the subsequent safety-related equipment responses. The operators correctly diagnosed the event and restored core cooling in accordance with procedures. RHR flow to the core was secured for a total of four minutes, and the primary temperature rose approximately six degrees F. The 'B' RHR pump was operable and immediately available for service had the 'A' pump failed to restart. Communications deficiencies were noted between plant work control organizations and within the electrical work groups. Neither the work control center nor the control room were fully cognizant of some important work activities occurring in the plant. Also, deficiencies were noted in the work scheduling process and work activities reduced the defense in depth for protection against a loss of core cooling during a period of relatively high level of decay heat production. The electrical power supply for the 'A' RHR pump was undergoing testing, control of the 'B' RHR pump was shifted between the control room and the remote shutdown panel, and the plant had been depressurized which complicated the availability of natural circulation cooling using the steam generators.

Inspection Report# : [2004009\(pdf\)](#)

Last modified : August 24, 2005