Harris 1
3Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Adequate ESCW Design Change
Green. An NRC-identified non-cited violation of 10CFR50, Appendix B, Criterion III, "Design Control" was identified for failure to ensure that adequate design control measures were implemented on an ESCW system design change (Engineering Change 51444). The inadequate design change resulted in both trains of the essential services chilled water (ESCW) system being inoperable for a period of time greater than allowed in Technical Specification 3.7.13. The ESCW system was inoperable because check valves were installed in the service air supply lines to the expansion tanks which were incapable of maintaining expansion tank pressure upon loss of the non-safety service air system pressure. The inadequate design change of the ESCW system is more than minor because it affects the Mitigating Systems Cornerstone objective 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 Mitigating Systems Cornerstone attribute of design control. The significance determination process (SDP) of NRC Inspection Manual Chapter 0609, Appendix A was used to determine the safety significance of the finding. Since the degradation of the ESCW system represented a loss of system safety function, a Phase 2 SDP analysis was required. The Phase 2 SDP analysis determined that the significance of the finding was potentially greater than green because the degradation of the ESCW system existed for more than 30 days, and the ESCW system is a support system for the high head safety injection (HHSI) system, which affects several core damage sequences. Therefore, a Phase 3 evaluation for the finding was performed. Based upon data which showed that the chillers' check valves leaked at a low enough rate that the chillers would operate for at least 24 hours before causing loss of function of the systems they support, the finding was considered to have very low safety significance. The cause of the finding is related to the organization aspect of the human performance cross-cutting area. Specifically, the engineering organization's lack of understanding of design control requirements with regard to manual actions led to implementation of the inadequate ESCW system modification.
Inspection Report# : 2005004*(pdf)*

Significance: G Jul 01, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROMPTLY CORRECT CONDITION ADVERSE TO QUALITY AFFECTING EDGs
Green. The inspectors identified a non-cited violation of 10 CFR 50 Appendix B Criterion XVI for failure to promptly correct a condition adverse to quality related to operational indicator lights on the emergency diesel generator (EDG) local engine control panel. The approved modification to fix the condition has been rescheduled five times. Indicator light changeout has resulted in several trips of EDG dc control power breakers, causing partial loss of dc control power to the effected EDG. In February 2005, an EDG pneumatic control system problem was identified that compounded the effect on the EDGs from the indicator light changeout problem.

The issue is greater than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance because it involved a design deficiency which did not result in a loss of function. The two degraded conditions, the indicator light changeout problem and the EDG pneumatic control system problem, combined to increase the likelihood of an EDG failure. The cause of this finding is identified as a performance aspect of the problem identification and resolution cross-cutting area, in that the failure to promptly correct the light changeout problem resulted in additional partial losses of EDG control power.
Inspection Report# : 2005006*(pdf)*

Significance: G Jun 30, 2005
Identified By: Self-Revealing
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 reseat 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: G 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: G Dec 31, 2004
Identified By: Self-Revealing
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)*

Significance: G 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)*

Significance: G Dec 31, 2004
Identified By: Self-Revealing
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 IA-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)*

Significance: G 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)*

Barrier Integrity

Significance: G Mar 31, 2005
Identified By: Self-Revealing
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 Signficance 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

Significance: G Sep 30, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain an Acceptable Program for Periodic Calibration of Emergency Plan ARMs in Accordance with 10CFR20.1101
Green. An NRC-identified non-cited violation of 10 CFR 20.1101 was identified for failure to maintain an acceptable program for periodic calibration of Area Radiation Monitor (ARM) detectors as required by 10 CFR 20.1501(b). For seven ARM detectors that are referenced in the Emergency Plan, the licensee eliminated the periodic calibrations and designated the equipment as 'run to failure'.

The identified issue is more than minor in that the failure of the specific ARM equipment could impair licensee actions to support emergency response activities. This finding involving radiological monitoring is related to the Emergency Preparedness Cornerstone. The change from a periodic calibration frequency to no calibration frequency (i.e. 'run-to-failure') would not ensure that equipment and instrumentation needed to support emergency response activities were being properly maintained. This finding was evaluated using the Emergency Preparedness SDP and was determined to be of very low safety significance based on the identified ARM detectors still being within the calibration frequency that was previously established.
Inspection Report# : 2005004*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jul 01, 2005
Identified By: NRC
Item Type: FIN Finding
IDENTIFICATION AND RESOLUTION OF PROBLEMS
The inspectors determined that the licensee was effective in identifying problems and entering them into the CAP. The threshold for problem evaluation was low based on observed samples, independent walkdowns and staff interviews. The inspectors determined that the licensee properly prioritized issues and performed evaluations that were technically accurate and sufficiently detailed. Formal root cause evaluations were thorough and well documented. One example was noted where a safe shutdown molded case circuit breaker failure was not evaluated for potentially generic concerns. Corrective action implementation was generally timely, effective and appropriate to the problem. In the sample reviewed, the inspectors noted frequent investigation extensions and several examples where corrective action timeliness goals were not met, which was consistent with observations within the last licensee Self Evaluation Unit program assessment. The vendor quality initiative and modification timeliness initiative were examples where detailed self-critical evaluation identified improvements to CAP implementation problems. Management emphasized the need for staff to identify and resolve issues using the CAP. A safety conscious work environment was evident.

Inspection Report# : 2005006*(pdf)*

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 : November 30, 2005