

Turkey Point 3

1Q/2007 Plant Inspection Findings

Initiating Events

Significance:  Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Comply with Core Alteration Procedures for Handling of Irradiated Fuel

The inspectors identified a Green non-cited violation of Technical Specification 6.8.1 for failure to implement procedures during core alterations when operators failed to maintain reliable communications and to place irradiated fuel in a safe storage location when communications were lost between the refueling personnel and the control room. When identified to the licensee, the issue was entered into the corrective action program and actions to brief fuel handling personnel on procedure requirements were taken prior to resuming fuel movement.

The finding was more than minor because technical specification requirements to implement core alterations procedures were not being met. Using the NRC Manual Chapter 0609, Attachment 1, Checklist 4, a Phase 2 analysis was not required (conditions not met) and the finding was determined to be of very low safety significance. The Initiating Events cornerstone was affected because reliable communications and placement of the irradiated fuel assembly in a safe location on loss of communications would permit prompt protection of personnel and emergency response should a loss of the refueling water seal occur. The finding affects the cross cutting area of Human Performance - Work Practices because the licensee had not defined and effectively communicated expectations regarding procedural compliance and personnel did not follow procedures. (Section 1R20)

Inspection Report# : [2006005](#) (*pdf*)

Significance:  Aug 18, 2006

Identified By: NRC

Item Type: VIO Violation

Failure to assess and manage maintenance risk during shutdown operations

A violation of 10 CFR Part 50.65(a)(4) was identified for failure to adequately assess and manage the increase in risk of performing maintenance on the A-train 480 volt 3C load center while Unit 3 was operating in decay heat removal mode with one operating A-train residual heat removal (RHR) pump. The licensee elected to move up restoration maintenance on the A-train 480 volt 3C load center and proceeded without implementation of procedurally required measures to reduce the risk during the activity. During the maintenance activity the licensee installed a breaker associated with 3C 480 volt load center that was later determined to be defective, which caused a loss of the operating A-train RHR pump. This resulted in a loss of all decay heat removal for seven minutes, which caused reactor coolant temperature to increase from 113 F to 140 F. The finding affected the cross cutting area of Human Performance, specifically the Work Control component because the licensee did not appropriately plan work activities using risk insights. The licensee entered this issue in the Corrective Action Program as condition report (CR) 2006-7036.

The finding was greater than minor because the risk assessment failed to account for the loss of decay heat removal during shutdown operations. The Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capacity of systems that respond to initiating events to prevent undesirable consequences was affected by the finding. This finding was evaluated in accordance with NRC Inspection Manual Chapter 0609 Shutdown Appendix G Phase 1 and 2 Significance Determination Process (SDP) templates and determined to be greater than Green. Subsequently, a Phase 3 assessment was performed and determined that there were two dominant core damage sequences. One sequence involved failure of operators to start either RHR train A or B before boiling began. In this scenario, the operators were assumed to successfully initiate feed and bleed cooling but failed to maintain a long term inventory source to the refueling water storage tank (RWST) (recirculation requires the RHR pumps). The conditional core damage probability for this scenario was estimated as 3.5E-06. The other sequence involved failure of operators to start either RHR train A or B before boiling and the operators fail to initiate feed and bleed cooling before core damage, which was estimated to be 3E-6. Therefore, the risk

significance of this finding was determined to be White. (IR 05000250, 251/2006015 dated August 24, 2006)

The Final Significance Determination for A White Finding and Notice of Violation letter was issued on November 22, 2006. For administrative purposes, this letter is issued as a separate NRC Inspection Report (No. 05000250/2006016) and the above violation is identified as VIO 05000250/2006016-01, White Finding - Failure to Assess and Manage Maintenance Risk During Shutdown Operations. Accordingly, Apparent Violation (AV) 05000250/2006015-01 is closed.

The NRC performed a supplemental inspection to assess the adequacy of the licensee's evaluation, extent of condition/cause review and associated corrective actions. The licensee's problem identification, root cause and extent-of-condition evaluations, and corrective actions for this White inspection finding were generally adequate. Therefore, the White finding is considered closed. Given the licensee's performance in addressing this issue, the White finding will only be considered in assessing plant performance for a total of four quarters (from the third quarter of 2006) in accordance with the guidance in NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program." (IR 05000250, 251/2007007 date May 31, 2007)

Inspection Report# : [2006015](#) (*pdf*)

Inspection Report# : [2007007](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to implement adequate corrective actions to prevent recurring deficiencies in flood protection barriers

The inspectors identified a Green, non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion XVI, Corrective Actions, for failure to take actions to prevent repeated deficiencies with external flood protection equipment. Although deficiencies with wooden stoplogs had been identified and left uncorrected at the start of hurricane season in 2005, corrective actions were not sufficient to prevent recurring problems that extended into the hurricane season in 2006. The licensee entered the issue in their corrective action program and planned to replace the vulnerable wooden stoplogs with an aluminum design.

The finding is more than minor because it was repetitive and affected protection against external factors of systems in the Mitigating Systems Cornerstone. The finding screens to be of very low safety significance (Green) because the inspectors judged that the licensee would have successfully prevented loss of one or more trains of a system that supports a safety function had a maximum hurricane and flood occurred. The cause of the finding is related to the Problem Identification and Resolution cross-cutting area in that the licensee did not take appropriate corrective actions in a timely manner, following problems with flood barriers in 2005, to prevent recurring degraded barriers during the hurricane season in 2006

Inspection Report# : [2006004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Physical Protection

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

Miscellaneous

Significance: N/A May 19, 2006

Identified By: NRC

Item Type: FIN Finding

Supplemental Inspection 95001

This supplemental inspection was conducted in accordance with Inspection Procedure 95001, to assess the licensee's evaluation associated with; (1) the performance indicator for excessive safety system unavailability for the heat removal system (due to a degraded auxiliary feedwater pump) crossing the threshold from Green (very low risk significance) to White (low to moderate risk significance) for Units 3 and 4 in the fourth quarter of 2005, and (2) the White finding for the auxiliary feedwater pump B being out of service for greater than the technical specification allowed outage time due to an incorrectly installed bearing and subsequent inadequate corrective actions, NOV 05000250,251/2006010. Specifically, the Unit 3 and 4 shared "B" turbine driven auxiliary feedwater pump was discovered in a degraded condition on November 7, 2005. The licensee determined the pump had an incorrectly installed bearing which resulted in inadequate lubrication of the inboard pump bearing. The pump was determined to be inoperable and unable to meet its expected mission time from December 14, 2004 until November 11, 2005.

The licensee's problem identification, root cause and extent-of-condition evaluations, and corrective actions for the degraded pump were generally adequate. However, several deficiencies were identified by the inspector relating to the thoroughness and quality of the root cause evaluation and subsequent corrective actions. Of note, the root cause evaluation did not identify that an evaluation required by the ASME code was not completed when the auxiliary feedwater pump B was returned to service with high vibrations on September 3, 2003. Therefore, the White finding, NOV 05000250,251/2006010, will remain open pending development of corrective actions to address these NRC-identified weaknesses.

Inspection Report# : [2006013](#) (*pdf*)

Last modified : June 01, 2007