Surry 1
1Q/2005 Plant Inspection Findings

Initiating Events

Significance: N/A Apr 28, 2004
Identified By: NRC
Item Type: FIN Finding
Results of Supplemental Inspection for White Performance Indicator
This supplemental inspection was conducted to assess the licensee's evaluation associated with a White performance indicator in the initiating events cornerstone. The Unplanned Scrams per 7,000 Critical Hours Performance Indicator crossed the threshold from Green to White in the third quarter of calendar year 2003. Specifically, the licensee experienced two reactor trips during the first quarter of 2003, one reactor trip during the second quarter of 2003, and one reactor trip in the third quarter of 2003. The first reactor trip, which occurred on January 14, 2003, was a manual trip from approximately 100 percent reactor power due to high temperature and shaft vibration alarms on the C reactor coolant pump. The second reactor trip, which occurred on January 25, 2003, was an automatic trip from approximately 27 percent reactor power due to problems associated with manually controlling steam generator water level. The third reactor trip, which occurred on June 13, 2003, was a manual trip from less than one percent reactor power due to a control rod misalignment. The fourth reactor trip, which occurred on September 18, 2003, was a manual reactor trip from approximately 79 percent reactor power due to inclement weather conditions and a loss of the 1G and 2G buses which supplied power to all the circulating water pumps for both units.

The licensee's problem identification, root cause and extent-of-condition evaluations, and corrective actions for the four reactor trips were adequate. Common cause aspects linking the four reactor trips from a risk perspective were not evident.
Inspection Report# : 2004009*(pdf)*

Mitigating Systems

Significance: G Mar 31, 2005
Identified By: NRC
Item Type: FIN Finding
Failure to Provide a Power Supply for Turbine Building Flood Instrumentation and Circulating Water Condenser Inlet Valve Logic Which Would be Available Following a Loss of offsite power
The inspectors identified a finding in that the turbine building flood control system did not provide adequate protection for all licensing basis flooding scenarios. Specifically, portions of the flooding detection and mitigation circuitry, turbine building flood level detection instrumentation, and circulating water (CW) condenser inlet valve closure logic, would not be available for some flooding scenarios involving a loss of offsite power. The licensee's completed corrective actions include installation of a design change which provides redundant, vital bus powered detection and warning of flooding in the turbine building basement which alarms in the control room.

The finding is greater than minor because it affects the design control attribute of the mitigating systems cornerstone objective. A Phase 3 risk analysis determined that this finding was of very low safety significance. This was primarily due to the low frequency of an earthquake of sufficient magnitude to fail offsite power and the circulating water piping connected to the condenser, but of insufficient magnitude to cause catastrophic failure of the turbine building. (Section 4OA5.2)
Inspection Report# : 2005002*(pdf)*

Significance: N/A Dec 10, 2004
Identified By: NRC
Item Type: FIN Finding
95002 Supplemental Inspection Resulta for Degraded Mitigating Systems Cornerstone
This supplemental inspection was performed by the NRC to assess the licensee's problem identification, root cause evaluation, extent of condition determination, and corrective actions associated with a White performance indicator (PI) and a White inspection finding. These two issues, which were in the Mitigating Systems Cornerstone, placed the performance of Surry Units 1 and 2 in the Degraded Cornerstone Column of the NRC's Action Matrix for the first quarter 2004. The PI, Safety System Unavailability - Emergency AC Power, crossed the threshold from Green to White in the fourth quarter 2001 for both units and remained through the first quarter 2004 for Unit 2, and through the third quarter 2004 for Unit 1. The White PI was evaluated in Supplemental Inspection Report 05000280,281/2002008. The White inspection finding involved Surry fire response procedures that were not effective in ensuring safe shutdown for a fire in Emergency Switchgear and Relay Room Numbers 1 or 2, of Surry Power Station Units 1 and 2 respectively. Specifically, the procedures may not have precluded an extended loss of reactor coolant pump (RCP) seal injection flow, resulting in an RCP seal loss of coolant accident. The performance issue associated with this inspection finding was previously characterized as having low to moderate risk significance (White) in NRC "Final Significance Determination" letter dated September 15, 2004.

During this supplemental inspection, which was performed in accordance with Inspection Procedure 95002, the inspectors utilized the results from Supplemental Inspection Report 05000280,281/2002008 to address the White PI, Safety System Unavailability - Emergency AC Power. The combined assessment of the White PI and the White inspection finding that resulted in the degraded Mitigating Systems cornerstone is summarized below.

As indicated in Supplemental Inspection Report 05000280,281/2002008, the licensee's formal root cause evaluations (RCE) for the White PI, Safety System Unavailability - Emergency AC Power, was acceptable. The licensee implemented adequate corrective actions to prevent recurrence based upon their RCEs.

The licensee performed a Category 1 RCE, S-2003-1490, to address the fire response procedure finding associated with restoration of seal injection flow to the RCPs. This RCE was considered by the inspectors to be independent and consistent with the prescribed charter. However, the inspectors noted that the licensee's extent of condition reviews lacked thoroughness with regard to the RCE findings. Additionally, the licensee performed Common Cause Evaluation (CCE) S-2004-1504 in January 2004 to assess Surry Power Station Units 1 and 2 performance in the NRC's Reactor Oversight Process. The licensee also performed CCE S-2004-3295 in October 2004 to address the degraded Mitigating Systems cornerstone for Surry Units 1 and 2. The inspectors considered that, although CCE S-2004-3295 did not possess the attributes of an extent of condition evaluation, this CCE determined, through review of various corrective action system documents, that there was a common cause for these White issues. During this 95002 supplemental inspection, the licensee performed more comprehensive extent of condition related actions through additional reviews of external information programs and processes, and reviews of various management committees' charters/procedures for dispositioning technical concerns. These additional extent of condition and extent of cause related reviews, combined with the efforts in CCE S-2004-3295, were considered to be appropriately focused based on the inspectors' independent extent of condition review.

Although corrective actions appeared to be appropriately prioritized and tracked, the inspectors noted that the licensee was still evaluating long-term corrective action options for resolving the White inspection finding related to restoration of RCP seal injection flow. Consequently, the licensee had not identified all of the corrective actions for this finding and a completion date was not available. Overall, corrective actions related to this White inspection finding adequately addressed compliance restoration and the identified root causes and causal factors. While the inspectors considered that the appropriate root causes were identified by the licensee in RCE S-2003-1490, the contributing cause identified in this RCE was not considered to be the most appropriate. Specifically, the licensee identified that the failure to install Westinghouse (W) high temperature O-rings in the RCP seals in a timely manner was a contributing cause to the failure to revise the Surry Fire Contingency Action (FCA) procedures once the difference between the FCAs and the emergency response guidelines (ERG) was identified. The inspectors noted that the RCE did not recommend any corrective actions for this identified contributing cause. However, the inspectors considered that this contributing cause identified in the RCE was not the most appropriate one. The inspectors considered that the more appropriate contributing cause should have been the unclear responsibilities and inaccurate perception of who had ownership of the FCA procedures. This determination was based on the inspectors' review of RCE S-2003-1490, Potential Problem Report (PPR) 2000-004, and the meeting minutes of the Management Problem Review Team (MPRT) related to PPR 2000-004. The inspectors noted that the licensee had implemented corrective actions to address ownership of the FCA procedures by revising Virginia Power Administrative Procedure (VPAP)-0502, Procedure Process Control.
Inspection Report# : 2004011*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Sep 25, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement and maintain a respiratory protection program that includes written procedures regarding training of respirator users in the change out of SCBA air cylinders
The inspectors identified a violation of 10 CFR 20.1703(c)(4)(ii) which requires the licensee to implement and maintain a respiratory protection program that includes written procedures regarding training of respirator users. In addition, this was related to the emergency planning standards of 10 CFR 50.47(b) (10). Specifically, procedures were not in place to ensure that all Control Room staff had demonstrated proficiency in changing Self Contained Breathing Apparatus (SCBA) air cylinders during emergencies.

This finding is greater than minor because emergency workers who are required to use respiratory protective equipment are not trained to use that equipment. This finding is of very low safety significance because an adequate number of SCBA qualified plant personnel/staff, which were designated emergency responders, would have been available to respond in the event of an actual emergency.
Inspection Report# : 2004004*(pdf)*

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : June 17, 2005