

Surry 2

4Q/2010 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: TBD Dec 31, 2010

Identified By: NRC

Item Type: AV Apparent Violation

Failure to Correct Multiple Conditions Adverse to Fire Protection

A self-revealing apparent violation (AV) of Condition 1.B to the Surry Unit 1 and Unit 2 Updated Facility Operating Licenses, DPR-32 and DPR-37, was identified for the licensee's failure to take corrective action for degraded conditions adverse to the fire protection program. Specifically, in 2003-2004, three breakers with loads including the Unit 2 1B Refueling Water Storage Tank (RWST) chiller motor, the Unit 1 2B charging component cooling water pump, and the Unit 2 B hydrogen recombiner were identified as being oversized with respect to the Surry design standard for breaker sizing and cable protection. The failure to take corrective action on the affected breakers led to a fault on the Unit 2 RWST Chiller Motor 1B on October 11, 2010, and a resulting fire which damaged the electrical cable and motor controller. The fire was promptly extinguished by the fire brigade. The licensee entered this issue into the CAP (CR 398628) and isolated the remaining breakers to prevent additional failures.

The inspectors found that the failure to take action to correct multiple oversized breakers constituted a performance deficiency. The finding is more than minor because it adversely affected the external factors attribute (fire) of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the Unit 2 1B RWST chiller motor and the Unit 2 B hydrogen recombiner breakers were the most susceptible to fire due to their size; also a cable fault could potentially damage safety related cables routed nearby. In addition, the Unit 1 2B charging component cooling water pump is safety related and was also unprotected. The inspectors reviewed IMC 0609, Appendix F, Attachment 1, and determined the category of post fire safe shutdown was affected and the finding required a phase 3 analysis. The significance of this finding is to be determined pending completion of the phase 3 evaluation. This finding has a cross cutting aspect in the work control component in the Human Performance area because the licensee did not appropriately plan work activities by incorporating risk insights. Specifically, although work orders were planned in 2006 they were neither prioritized consistent with their safety significance nor scheduled and completed in a timely manner. (H.3(a)).

Inspection Report# : [2010005](#) (pdf)

Significance: TBD Dec 31, 2010

Identified By: NRC

Item Type: AV Apparent Violation

Inadequate Risk Evaluation for Leaving Common ESGR HELB Door Open

A licensee identified AV of 10CFR50.65 (a)(4), Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, was revealed after the licensee discovered that 2-BS-DR-21, common emergency switchgear room (ESGR) door was blocked open for two hours without clear communication to licensed operators. The licensee did not adequately assess the increase in operational risk that resulted in the required risk management actions of fire and environmentally qualified watches not being established. The licensee immediately corrected the condition by shutting the HELB door and having security control personnel access. The issue was entered into the licensee's CAP as CR397720.

The failure to adequately assess the increased risk associated with blocking open the common ESGR door and to take the required risk management actions is a performance deficiency. This finding is more than minor because it is

associated with the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, both Unit 1 and Unit 2 plant risk were not evaluated and risk management activities were not put in place when the common ESGR door was blocked open for maintenance and unable to perform its function as a fire barrier, a halon suppression pressure boundary, a main control room pressure boundary, and a HELB boundary. In accordance with IMC 0609, Appendix K, Maintenance Risk Assessment and Risk Management Significance Determination Process, this finding will require a phase 3 analysis. The significance of this finding is to be determined pending completion of the phase 3 evaluation. The inspectors determined that this finding had a cross-cutting aspect in the work control component of the human performance area because the licensee did not appropriately plan work activities by incorporating risk insights (H.3(a)).

Inspection Report# : [2010005](#) (*pdf*)

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Demonstrate that the Reliability of Systems or Components were effectively controlled per 10 CFR 50.65 (a)(2)

The NRC identified a Green Non-Cited Violation of 10CFR50.65 a(2) for the licensee's failure to demonstrate that the reliability of High Safety Significant (HSS) systems and Low Safety Significant (LSS) systems in stand-by was being effectively controlled through the performance of appropriate preventative maintenance, such that the systems or components remain capable of performing their function. Specifically, the licensee's MR program would not demonstrate that a system should remain in category a(2) as defined by regulatory requirements.

The inspectors determined the licensee's MR program could not demonstrate that reliability of High Safety Significant (HSS) systems and Low Safety Significant (LSS) systems in stand-by were being effectively controlled through the performance of appropriate preventative maintenance, such that the systems or components remain capable of performing their function is a performance deficiency. Specifically, the monitoring established by the license did not effectively demonstrate that systems in a(2) were being effectively controlled through performance of appropriate preventative maintenance. This masking of poor equipment performance does not allow the licensee to determine if a system should be in increased monitoring of a(1).

The finding was more than minor because it adversely affected the equipment performance attribute of the reactor safety mitigating systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of HSS and LSS systems to perform their functions when required. Specifically, multiple HSS and LSS systems could have a high probability of failure, because poor equipment performance would not be recognized by the licensee. This could prevent a poor performing system from being placed into the a(1) category when required and appropriate corrective action would not be taken.

The finding was evaluated using MC-0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," and determined to be of very low safety significance (Green), because the finding did not involve an actual failure of equipment. This finding had a crosscutting aspect in the area of human performance and resources because the licensee did not ensure that personnel, procedures, and other resources were available and adequate to assure proper implementation of MR program. The MR personnel did not have the training required to implement the program within the required industry regulations and guidelines (H.2.b).

Inspection Report# : [2010003](#) (*pdf*)

Significance:  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to identify a non-conservative error in the quarterly TS surveillance for the Unit 1 A battery

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" for failure to identify that a non-conservative error had been introduced into the Unit 1 A main station battery quarterly technical specification surveillance procedure (CR 366388). The licensee modified the procedure to eliminate the non-conservative error.

The inspectors determined the failure to identify a non-conservative error which was introduced into the TS quarterly surveillance procedure following the replacement of individual battery cells, was a condition adverse to quality and a performance deficiency which was reasonably within the licensee's ability to foresee and correct, and should have been prevented. The finding was more than minor because if left uncorrected the non-conservative error in 1-EPT-0103-01 would have the potential to lead to a more significant safety concern. Specifically, this is because the error was large enough to mask cell degradation and an inoperable cell. The finding was associated with the equipment performance attribute of the reactor safety mitigating systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of the safety related 125 VDC station batteries that provide class 1E backup power to risk significant components needed to prevent undesirable consequences during a loss of offsite power event. The finding was evaluated using MC-0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined to be of very low safety significance (Green) because operability of the Unit 1 A battery was not lost and the error was removed prior to the next quarterly surveillance. This finding had a cross cutting aspect in the area of problem identification and resolution because the licensee did not evaluate and communicate relevant external OE, including vendor recommendations, to affected internal stakeholders in a timely manner (P.2(a)). Specifically, the caveat to have cells on a float charge for 72 hours was not fully evaluated when the battery cells were replaced.

Inspection Report# : [2010002](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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.

Miscellaneous

Last modified : March 03, 2011