

Arkansas Nuclear 1

2Q/2007 Plant Inspection Findings

Initiating Events

Significance:  Dec 31, 2006

Identified By: Self-Revealing

Item Type: FIN Finding

TRIP OF MAIN FEEDWATER PUMP DUE TO INADEQUATE DESIGN CONTROL

A self-revealing finding was identified when the Unit 1 main feedwater Pump A tripped, resulting in a plant run back to 40 percent reactor power. The trip occurred due to electromagnetic interference from an air conditioning unit recently installed on top of the main feedwater pump cabinet. This interference caused an overspeed trip signal on the digital speed monitor for the main feedwater pump turbine when no such actual condition occurred. This issue was entered into the licensee's corrective action program as Condition Report ANO-1-2006-1399.

The finding was determined to be more than minor because it affected the design control attribute of the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding is determined to have very low safety significance because the condition only affected the initiating events cornerstone and did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The finding had crosscutting aspects in the area of problem identification and resolution because of the failure of the licensee to recognize that there was a history of electromagnetic interference effects on the main feedwater pump turbine control system, and the failure to use industry operating experience concerning electromagnetic interference effects with digital equipment.

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

Significance:  Sep 23, 2006

Identified By: NRC

Item Type: FIN Finding

LOSS OF RUNNING INTERMEDIATE COOLING WATER PUMP DUE TO HIGH AMBIENT TEMPERATURES IN THE TURBINE BUILDING

The inspectors reviewed a self-revealing finding associated with inadequate turbine building ventilation procedures which failed to maintain design temperatures within the turbine building. As a result, on July 19, 2006, Unit 1 experienced a trip of the thermal overloads for Intermediate Cooling Water Pump P-33C caused by high ambient temperatures in the turbine building. Due to the co-location of all of the intermediate cooling water pump circuit breakers in the same area of the turbine building and similarly installed thermal overloads in the breakers, the inspectors considered the possibility of a loss of all intermediate cooling water system cooling due to high ambient temperatures. The licensee entered the deficiency into their corrective action program as Condition Report ANO-1-2006-0967 for resolution.

The finding is more than minor because it affected the initiating events cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions and affected the cornerstone attribute of procedure quality. The finding was determined to be of very low safety significance because the auxiliary feedwater pump and the emergency feedwater system would have remained available for mitigation of any plant transient combined with a loss of the intermediate cooling water system, and because weather conditions which could have possibly induced a loss of all intermediate cooling water pumps were present for less than 30 days. This finding had a human performance crosscutting aspect which affected the resources component. Specifically, the licensee's turbine building ventilation procedures did not assure a proper turbine building ventilation lineup under hot weather conditions.

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

Mitigating Systems

Significance:  Mar 08, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INEFFECTIVE CORRECTIVE ACTIONS RESULTS IN A FIRE IN MOTOR CONTROL CENTER 2B-53

The team reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for failure of the licensee to take effective corrective action for earlier events in 1991 and 2001. This failure to ensure positive engagement of 480 volt circuit breakers resulted, on October 30, 2006, in a fire in Motor Control Center 2B-53 and declaration of an alert. The licensee initiated Condition Report 2-2006-02444 to enter this issue into the corrective action program. In 1991, a fire occurred in Motor Control Center 2B-64 because misaligned breaker stabs created a high resistance connections that overheated when energized. For corrective action, the licensee trained electricians emphasizing the need to use care when installing breakers into breaker cubicles and proposed a revision to the maintenance procedure to inspect and ensure proper stab connections. In 2001, during inspections of Motor Control Center 2B-85, electricians discovered the center stab of one breaker in the breaker cubicle misaligned and found part of the spring clip burned away and part of the bus bar damaged. For corrective action, the licensee trained on proper insertion of a cubicle breaker into the motor control center and initiated a long-term action to perform a visual inspection of all Unit 2 motor control centers and their breakers.

The performance deficiency resulted from licensee personnel failing to take adequate corrective actions (e.g. revising procedures to include appropriate guidance). The finding is greater than minor because it is associated with the mitigating systems cornerstone attribute of protection against external factors and affects the associated cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The Phase 1 worksheets in Manual Chapter 0609, "Significance Determination Process," were used to conclude that a Phase 2 analysis was required because the initiating events, mitigating systems, and barrier integrity cornerstones were affected. The team performed a Phase 2 analysis using Appendix A, "Determining the Significance of Reactor Findings For At-Power Situations," of Manual Chapter 0609 and the Phase 2 worksheets for Arkansas Nuclear One. From the Phase 2 analysis results, the team determined this finding had very low safety significance (Green). The team concluded the cause of the finding had no definitive cross-cutting aspects.

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

Barrier Integrity

Significance:  Mar 24, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INADEQUATE MODIFICATION CONTRIBUTES TO FAILURE OF CONTROL ROOM ISOLATION DAMPER

A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified associated with the failure of the Unit 1 control room Damper CV-7907 to close on December 18, 2006. The licensee failed to control critical design parameters of the damper during a modification performed in 2004 to address a similar previous failure. This issue was entered into the licensee's corrective action program as Condition Report ANO-C-2006-2080.

This finding was greater than minor because it is associated with the barrier integrity cornerstone attribute of design control and affects the associated cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because the condition only represented a degradation of the radiological barrier function provided for the control room. The finding had crosscutting aspects in the area of human performance associated with decision making because the licensee did not use conservative assumptions in decision making and had failed to verify the validity of

the underlying assumptions that were used as justification.

Inspection Report# : [2007002](#) (*pdf*)

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 : August 24, 2007