Arkansas Nuclear 1
3Q/2007 Plant Inspection Findings

Initiating Events

Significance: G 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)*

Mitigating Systems

Significance: G 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: G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Identify the Preconditioning of Reactor Building Spray Pumps
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to prompty identify and correct a practice of unacceptable preconditioning prior to American Society of Mechanical Engineers Code inservice testing of the Unit 1 reactor building spray pumps. The licensee’s corrective action program (via Condition Report ANO-C-1997-0288) failed to identify and correct the practice of venting the reactor building spray pump casing prior to conducting the quarterly surveillance test, which continued from 1997 through 2007. This issue was entered into the licensee's corrective action program as Condition Report ANO-1-2007-1645.

The finding was determined to be more than minor because it affected the procedure quality attribute of the barrier integrity cornerstone, and affected the associated cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to have very low safety significance because it did not involve an actual reduction in defense-in-depth for the atmospheric pressure control function of the reactor containment
Inspection Report# : 2007003 *(pdf)*

Significance: G 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

Significance: G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Conspicuously Post a Radiation Area
The inspectors identified a noncited violation of 10 CFR 20.1902(a) because the licensee failed to conspicuously post a radiation area. On May 2, 2007, during a tour of the auxiliary building, the inspectors observed that the radiological posting to the entryway of the Unit 1 Decay Heat Vault B was not conspicuously posted. An operations' "protected train" sign obscured the radiological posting. The licensee's immediate corrective action was to re-post the operations' sign to prevent obscuring the radiological posting.

The finding was greater than minor because it was associated with the occupational radiation safety cornerstone attribute of program and process and affected the cornerstone objective to ensure the adequate protection of a worker's health and safety from exposure to radiation because it could have resulted in workers being exposed to higher radiation levels. When processed through the occupational radiation safety significance determination process, the finding was determined to be of very low safety significance because it was not an as low as reasonably achievable finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. In addition, this finding had a crosscutting aspect associated with the human performance component of work practices (H.4(a)) because personnel failed to use human error prevention techniques such as self-checking or peer checking to verify that the radiation area was conspicuously posted.
Inspection Report# : 2007003 *(pdf)*

Significance: G Jun 23, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to use an Engineering Control as Required by a Radiation Work Permit
The inspectors reviewed a self-revealing noncited violation of Technical Specification 5.4.1.a. because of a failure to use an engineering control as required by a radiation work permit. On April 25, 2007, four workers were unable to clear the personnel contamination monitors after working near the Unit 1 Steam Generator A. The licensee conducted an investigation and determined the steam generator high-efficiency particulate air ventilation (a radiation work permit required engineering control) had been rendered inoperable due to an incorrect line-up. The licensee's immediate corrective actions were to counsel the workers and brief associated personnel on the correct method for verifying high-efficiency particulate air ventilation.

The finding was greater than minor because it was associated with the occupational radiation safety cornerstone attribute of program and process and affected the cornerstone objective to ensure the adequate protection of a worker's health and safety from exposure to radiation because it resulted in workers being exposed to higher radiation levels. When processed through the occupational radiation safety significance determination process, the finding was determined to be of very low safety significance because it was not an as low as reasonable achievable finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. In addition, this finding had a crosscutting aspect associated with the human performance component of resources (H.2(c)) because the high-efficiency particulate air ventilation verification procedure was not adequate in that it did not have sufficient detail.
Inspection Report# : 2007003 *(pdf)*

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

Significance: N/A Apr 03, 2007
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team reviewed 299 condition reports, several work orders, engineering evaluations, associated root and apparent cause evaluations, and other supporting documentation to assess problem identification and resolution activities. The team concluded that the licensee effectively identified, evaluated and prioritized corrective actions for conditions adverse to quality. The licensee improved in their ability to use the condition report process to track adverse conditions documenting abnormal configurations or potential challenges to the normal station processes. Also the licensee improved in their coordination among plant processes when closing condition reports to other corrective action or work control documents. However, the team concluded that the licensee, generally, implemented timely, effective corrective actions, although some examples, including one violation, indicate continuing weakness in this area.

With minor exceptions, the licensee appropriately evaluated industry operating experience for relevance to the facility and had entered applicable items in the corrective action program. The licensee appropriately used industry operating experience when performing root cause and apparent cause evaluations. The licensee performed effective quality assurance audits and self-assessments, as demonstrated by self-identification of poor corrective action program performance and identification of ineffective corrective actions. The team concluded that the licensee established an acceptable and improving safety conscious work environment. Management took action to address the write-in comments from the 2006 safety culture survey. The team concluded from interviews that, although no safety conscious work environment concerns existed, the complaints related to general culture factors, if not addressed, might result in safety conscious work environment concerns.
Inspection Report# : 2007007 *(pdf)*

Last modified : December 07, 2007