Arkansas Nuclear 2
1Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Sep 23, 2005
Identified By: Self-Revealing
Item Type: FIN Finding
INADEQUATE MAINTENANCE PROCEDURE RESULTS IN DROPPED CEA
The inspectors reviewed a self-revealing finding for an inadequate maintenance procedure, which resulted in Control Element Assembly 50 dropping into the core with Unit 2 operating at 100 percent rated thermal power. During troubleshooting efforts for a missing phase on the upper gripper for Control Element Assembly 56, power to the only gripper holding Control Element Assembly 50 fully withdrawn (the lower gripper) was removed by instrumentation and control technicians. The procedure failed to contain detailed guidance to ensure that Control Element Assembly 50 was properly being held by the upper gripper. The licensee performed a thorough root cause of the event to determine the short and long term corrective actions. The cause of the finding is related to the crosscutting element of human performance.

This finding is greater than minor because it affected the procedure quality attribute under the initiating events cornerstone objective of limiting those events that upset plant stability. Using the significance determination process, the finding was determined to have very low safety significance because this transient initiator does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.

Inspection Report# : 2005004*(pdf)*

Significance: G Jun 23, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
UNTIMELY CORRECTIVE ACTIONS TO ADDRESS REPETITIVE 4160 VAC CABLE FAILURES
The inspectors documented a self-revealing, noncited violation of 10 CFR 50, Appendix B, Criterion XVI, because the licensee failed to correct a 4160 VAC cable failure mechanism (a significant condition adverse to quality). In addition, the licensee failed to properly address industry operating experience on the same topic. The cables were submerged in water but they were not designed for submergence. Consequently, several 4160 VAC service water pump and fire pump motor cables failed in service between 1993 and 2003. The licensee replaced all the vulnerable cables in 2003. This issue had cross-cutting aspects associated with problem identification and resolution in that the licensee failed to adequately evaluate the condition.

The failure to take appropriate corrective measures to address a significant condition adverse to quality was a performance deficiency. This finding was more than minor because it affected the Initiating Events and Mitigating System cornerstone objectives of limiting the likelihood of initiating events and ensuring the availability of systems that mitigate plant accidents. The issue required a Phase 3 significance determination because it had screened out of the Phase 2 significance determination as potentially greater than Green. The Phase 3 significance determination concluded that the issue was of very low risk significance.
Inspection Report# : 2005003*(pdf)*

Mitigating Systems

Significance: G Mar 24, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ENSURE FIRE DOORS WERE LATCHED
Four examples of an NRC identified noncited violation of Unit 1 License Condition 2.C.(8), “Fire Protection,” and ANO Unit 2 License Condition 2.C.(3)(b), “Fire Protection,” were identified for the failure of licensee personnel to ensure fire doors were latched. On various days in January 2006, four fire doors were found unlatched. These four failures degraded the doors’ fire confinement capability assumed in the fire hazards analyses. This issue was entered into the licensee's corrective action program as Condition Report ANO-C-2006-0067.

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 to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the fire protection significance determination process, the finding was determined to have very low

safety significance because the fire areas adjacent to the unlatched doors either were covered by an automatic suppression system, did not contain redundant equipment, or were only unlatched for a very short time. The cause of the finding is related to the crosscutting element of human performance in that licensee personnel did not ensure fire doors were being maintained shut and latched.

Inspection Report# : 2006002*(pdf)*

Significance: G Jun 24, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE CORRECTIVE ACTION TO REPAIR DAMAGED STRUCTURE
The team identified a violation of 10 CFR 50, Appendix B, Criterion XVI (Corrective Action) for the failure to take prompt corrective actions to address a longstanding problem. In 1993, a design change incorporated an impermeable membrane fabric over the top of the ECP dam/spillway. On May 19, 2002 a Condition Report (CR-ANO-C-2002-00394) was written to document that the fabric was torn, missing in some areas and in need of replacement. At the time of this inspection, the licensee had not initiated any actions to repair or replace the damaged and missing portions of the fabric.

The failure to address this longstanding problem was a performance deficiency. The issue had more than minor safety significance because it impacted the Mitigating Systems cornerstone objective of ensuring the availability of systems that mitigate plant accidents and could have affected the ability of a safety-related structure to perform its design basis function. The finding was of very low safety significance because the structure remained operable consistent with Generic Letter 91-18, "Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions," Revision 1 and because it did not represent an actual loss-of-safety function.
Inspection Report# : 2005008*(pdf)*

Significance: G Jun 24, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO INCORPORATE DESIGN CHANGE INTO DESIGN BASIS AND TECHNICAL SPECIFICATIONS
The team identified a violation of 10 CFR 50, Appendix B, Criterion III (Design Control) for failing to assure that a design change to the Emergency Cooling Pond (ECP) was incorporated into the design basis and the associated Technical Specification surveillance requirements.

This finding was a performance deficiency because the licensee failed to recognize that the design change reduced the effective volume of the ECP and that the surveillance acceptance criteria needed to be revised. This finding was more than minor because the ECP capacity was degraded due to a reduced volume which was not detected during the design change nor during subsequent surveillances. ANO engineering staff had to perform reanalyses and operability evaluations to address this finding and the minimum required ECP level had to be increased to ensure operability. The finding was of very low safety significance because it did not represent an actual loss-of-safety function.
Inspection Report# : 2005008*(pdf)*

Significance: G Jun 24, 2005
Identified By: NRC
Item Type: FIN Finding
POTENTIAL DESIGN VULNERABILITY OF SERVICE WATER SYSTEM STRAINERS
The team identified a finding in that the licensee had failed to fully address a vulnerability in the design of the Unit 1 and Unit 2 Service Water system strainers. Specifically, the design did not include any provisions for bypassing or cleaning the strainers while in service, should they become clogged during system operation.

This finding was more than minor because it could affect the availability, reliability, and capability of the service water systems under accident conditions. This design condition was not contrary to any regulatory requirements or the Unit 1 or Unit 2 licensing bases. Consequently, it was not considered to be a violation of regulatory requirements. The finding was of very low safety significance because it did not represent an actual loss-of-safety function.
Inspection Report# : 2005008*(pdf)*

Significance: G Jun 23, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
INAPPROPRIATE MODE CHANGE WITHOUT ALL REQUIRED EQUIPMENT BEING OPERABLE
A self-revealing noncited violation of Unit 2 Technical Specification 3.0.4 was reviewed by the inspectors when the licensee made an inappropriate mode change without all required equipment being operable. On September 30, 2004, the licensee proceeded from Mode 4 to Mode 3 with an inoperable train of pressurizer proportional heaters. This issue involved problem identification and resolution crosscutting aspects in that operations, engineering, and management personnel did not identify, prioritize, nor evaluate the condition adverse to quality for many years.

The inspectors determined this finding was greater than minor because it affected the mitigating systems cornerstone objective of ensuring the availability and reliability of the pressurizer proportional heaters, such that, if left uncorrected, both banks of pressurizer proportional heaters could have become inoperable. Using the Phase 1 worksheets in Manual Chapter 0609, "Significance Determination Process," the finding was determined to have very low safety significance because mitigating systems were available and it did not affect the likelihood of an external initiating event.
Inspection Report# : 2005003*(pdf)*

Barrier Integrity

Significance: G Dec 31, 2005
Identified By: NRC
Item Type: FIN Finding
FOREIGN MATERIAL CAUSES LEAK IN A UNIT 2 SG
The inspectors reviewed a self-revealing finding which occurred when a Unit 2 steam generator developed a tube leak (February 2005). A metallic piece of foreign material fretted a hole in one steam generator tube and wore away some thickness of two others. The licensee identified several more pieces of foreign material after conducting more thorough searches in both of the Unit 2 steam generators. The licensee performed a thorough review of the event to determine the short and long term corrective actions.

This issue is more than minor because it affected the reactor coolant system barrier performance attribute under the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance after management review, because the affected tubes could have withstood three times the differential pressure across them during normal full power, steady state operation.
Inspection Report# : 2005005*(pdf)*

Significance: G Sep 23, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
INADEQUATE PROCEDURE LEADS TO REACTOR COOLANT PUMP SEAL DAMAGE
The inspectors reviewed a self-revealing noncited violation of Unit 2 Technical Specification 6.4.1, "Procedures," when reactor coolant pump seal injection flow was established with the reactor coolant pump uncoupled from its motor. This activity led to damage of the seal for Reactor Coolant Pump 2P-32C. This damage required conducting an additional reduced reactor coolant system inventory maintenance period to replace the seal. The licensee performed a thorough root cause of the event to determine the short and long term corrective actions. The cause of the finding is related to the crosscutting element of problem identification and resolution.

This finding is greater than minor because it affected the procedural quality attribute under the barrier integrity cornerstone objective of providing reasonable assurance that physical design barriers (reactor coolant pump seals) protect the puublic from radionuclide releases caused by accidents or events, such that the licensee had to enter a higher risk plant operating state to repair the seal. Using the shutdown operations Significance determination process, the inspectors determined the finding required a Phase 2 analysis. In the Phase 2 analysis, risk analysts determined the finding to be of very low safety significance because (1) the seal replacement activity required establishing reduced inventory conditions and not to midloop conditions and (2) the time needed to replace the seal was not extensive.

This entry was revised based on the letter from NRC to Entergy Operations dated April 13, 2006.

Inspection Report# : 2005004*(pdf)*

Significance: G Jun 24, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE CORRECTIVE ACTION TO INCLUDE VALVE IN TESTING PROGRAM
The team identified a violation of 10 CFR 50, Appendix B, Criterion XVI (Corrective Action) for failing to place the closing function of the containment sump isolation valve (2CV-5650-2) into the in-service testing program despite two opportunities to do so over an 11-year period.

This finding was a performance deficiency because a condition adverse to quality was examined in 1994 and in 1997, and was not identified as a deficiency and corrected until 2005. The finding is greater than minor because it had the potential to affect the Barrier Integrity cornerstone objective of ensuring that physical barriers protect the public from radionuclide releases in that failure of the valve to close could release radioactivity from containment following an accident. The violation was of very low safety significance because there was never an actual open pathway from the reactor containment building.
Inspection Report# : 2005008*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Dec 31, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO BARRICADE AND CONSPICOUSLY POST AN HRA
The inspector reviewed a self-revealing noncited violation of Technical Specification 6.7.1.a because the licensee failed to control a high radiation area by not barricading and conspicuously posting the area. Specifically, on March 15, 2005, the licensee removed a temporary barrier (scaffold boards) creating an entrance to a high radiation area without the proper radiological controls in place for a high radiation area. It was not until two radiaiton workers entered the area that a radiation protection technician identified the unposted entry and took appropriate actions to control the area. The finding was entered into the licensee's corrective action program as Condition Report ANO-2-2005-0574.

The failure to control a high radiation area as per Technical Specification requirements is a performance dificiency. The finding is greater than minor because it is associated with the Occupational Radiaiton Safety Cornerstone attribute of program and process and affected the cornerstone objective, to ensure the adequate protection of the worker health and safety from exposure to radiation, in that not controlling high radiaiton areas could increase worker exposure. The findng was evaluated using the Occupational Radiation Safety Significance Determination Process and is of very low safety significance because it does not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overposure , or (4) an impaired ability to assess dose. In addition, this finding has crosscutting aspects associated with human performance because poor coordination and communication between the scaffold crew and radiation protection personnel directly contributed to the finding.
Inspection Report# : 2005005*(pdf)*

Significance: G Jun 23, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO EVALUATE RADIOLOGICAL HAZARDS
The inspector reviewed a self-revealing noncited violation of 10 CFR 20.1501(a) resulting from the licensee's failure to evaluate radiological hazards. Because of an inadequate job planning procedure, the licensee did not evaluate the effect on dose rates caused by the lack of water in the cask loading pit during fuel movement. Consequently, when a fuel assembly was moved near the empty cask loading pit on March 20, 2005, higher than anticipated dose rates were experienced by workers on the spent fuel pool bridge. The licensee was alerted to the problem by workers' alarming electronic dosimeters which measured a maximum dose rate of 220 millirems per hour. This issue involved human performance crosscutting aspects associated with an inadequate job planning procedure.

The finding is more than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute of exposure control and affected the cornerstone objective, in that not adequately evaluating the radiological hazards could lead to inadequate radiological controls. Since this occurrence involved workers' unplanned, unintended dose or potential for such a dose that could have been significantly greater as a result of a single minor, reasonable alteration of circumstances, this finding was evaluated with the Occupational Radiation Safety significance determination process. The inspector determined that the finding was of very low safety significance (Green) because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. This finding was entered into the licensee's corrective action program.
Inspection Report# : 2005003*(pdf)*

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : May 25, 2006