Fermi 2
2Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: N/A Apr 23, 2004
Identified By: NRC
Item Type: FIN Finding
WHITE performance indicator in the Emergency Alternating Current (AC) Power System Unavailability
The U.S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee's evaluation for a White performance indicator in the Emergency Alternating Current (AC) Power System Unavailability area of the Mitigating Systems cornerstone. The inspectors concluded that the licensee performed a comprehensive evaluation of the unavailability of Emergency Diesel Generator (EDG) 12 from June 2, 2003, to November 8, 2003, which primarily contributed to the performance indicator crossing the Green-to-White threshold.

The licensee's evaluation identified inadequate maintenance procedures, an inadequate review of maintenance procedures, and inadequate communication as the primary causes. The licensee had planned corrective actions, including training and procedural changes, to address these root causes.

Based on the results of the inspection, the inspectors concluded that the licensee had adequately completed a root cause analysis of the event and had identified appropriate corrective actions.
Inspection Report# : 2004005*(pdf)*

Significance: G Apr 02, 2004
Identified By: Licensee
Item Type: FIN Finding
Oil Leak Caused by Lube Oil Vapor Extractor Failure
Green. A finding of very low safety significance was self-revealed during an event when the failure of the south main turbine lube oil vapor extractor caused an oil leak from the high pressure turbine bearings. The primary cause of this finding was related to the cross-cutting area of Human Performance. Despite vendor recommendations to periodically lubricate the vapor extractor motor bearings, the licensee did not lubricate the bearings.

This finding was more than minor because it increased the likelihood of a turbine trip as the large oil leak increased the likelihood of a fire which could have challenged equipment necessary to keep the turbine on-line. The finding was of very low safety significance because the duration of the leak was short and the oil did not come into contact with any equipment hot enough to ignite the oil. No violation of NRC requirements occurred. The licensee entered improvement plans for lubricating the main turbine lube oil vapor extractor motors into the corrective action program under CARD 04-20348. (Section 1R14)
Inspection Report# : 2004002*(pdf)*

Significance: G Apr 02, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Corrective Action Procedures
Green. A finding of very low safety significance was identified by the inspectors for the failure to follow approved corrective action procedures when identified corrective actions were not implemented. The licensee performed an engineering evaluation on November 15, 1999, wherein corrective actions identified in the evaluation were not tracked and therefore not implemented by the licensee. The primary cause of this violation was related to the cross-cutting area of Human Performance.
This finding was more than minor because of the licensee's failure to complete a required engineering analysis, or take appropriate compensatory actions to support a prompt operability evaluation, would be a more significant safety concern if not corrected. The issue was of very low safety significance because an actual loss of a safety function did not occur. This failure to follow procedures was a violation of 10 CFR 50, Appendix B, Criterion V, and is classified as a Non-Cited Violation. The licensee initiated CARD 04-21296 on March 25, 2004, and entered this issue into their corrective action program. Additionally, the licensee updated CARD 99-17607 by including a corrective action to perform the water hammer analysis if the modification is delayed beyond May 15, 2004. (Section 1R15.3)
Inspection Report# : 2004002*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC

Item Type: FIN Finding
Inadequate implementation of the modification process prevented CTG 11-1 from starting during the August 14, 2003 loss of offsite power
Green. A finding of very low safety significance was self-revealed during the August 14, 2003, blackout when station blackout combustion turbine generator (CTG) 11-1 failed to start. An improper modification process used in 1996 to install an inverter on CTG 11-1 did not include updating the design basis central component (CECO) database with the appropriate low voltage inverter trip set point. The low voltage trip set point was set too high and prevented CTG 11-1 from starting on demand during the blackout.

This finding was more than minor because it affected the mitigating systems cornerstone objective to ensure availability, reliability, and capability of the CTG 11-1 system that responds to initiating events to prevent undesirable consequences. The issue was of very low safety significance because the inspectors answered "no" to all five screening questions in the Phase 1 Screening Worksheet under the mitigating systems column. Since CTG 11-1 was a non-Technical Specification system and not required by 10 CFR Part 50, Appendix B, no violation of regulatory requirements occurred. (Section 4OA5.1)
Inspection Report# : 2003010*(pdf)*

Significance: G Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
10 CFR 50, Appendix B Criterion V violation for failure to follow procedures resulting in a RCIC steam isolation
Green. A finding of very low safety significance was self-revealed on November 25, 2003, when a technician failed to follow procedures and improperly connected test equipment to the wrong terminals to perform a reactor core isolation cooling (RCIC) steam diaphragm pressure test. This caused a short circuit and an unexpected steam isolation of the RCIC system.

This finding was more than minor because RCIC was rendered inoperable and unavailable for about 3 hours, thereby affecting the availability and reliability of a mitigating system as described in the mitigating systems cornerstone. The finding was of very low safety significance because RCIC could be quickly restored by opening RCIC steam supply outboard containment isolation valve E5150F008. Thus, the safety function of providing high pressure water to the core in the event of a loss of feedwater was not lost. This failure to follow procedures was a violation of 10 CFR 50, Appendix B Criterion V and is classified as a Non-Cited Violation. (Section 1R22.2)
Inspection Report# : 2003010*(pdf)*

Significance: G Oct 24, 2003
Identified By: NRC
Item Type: FIN Finding
Repeat low oil pressure trips on the control center chillers.
The inspectors identified a finding of very low safety significance for failure to adequately evaluate the cause of repeat low oil pressure trips on the control center chillers. No violation of regulatory requirements occurred.
This finding is greater than minor because, if left uncorrected, it would become a more significant safety concern. Specifically, the inoperability of both chillers is an immediate Technical Specification 3.0.3 entry. When the Div. 1 chiller failed to start on September 30, 2003, coincident with the simultaneous failure of the Div. 2 chiller, a plant shutdown was commenced. Thus, the failure to adequately address this issue could have resulted in a reactor shutdown via Technical Specification 3.0.3. Because operators successfully restarted the chiller before the control room temperature rose too high, this finding does not represent an actual loss of a safety function and Technical Specification requirements were met. Therefore, this performance deficiency is an issue of very low safety significance.
Inspection Report# : 2003009*(pdf)*

Significance: G Oct 24, 2003
Identified By: NRC
Item Type: FIN Finding
Multiple equipment problems experienced with station blackout combustion turbine generator (CTG) 11-1
Inspectors identified a finding that multiple equipment problems experienced with station blackout combustion turbine generator (CTG) 11-1 over several years showed system unreliability and that the licensee failed to establish corrective actions to provide adequate assurance that CTG 11-1 would start on demand. Subsequently, during the loss of offsite power event that occurred on August 14, 2003, CTG 11-1 did not start. The finding represented a decrease in availability, reliability, and capability of the station blackout combustion turbine generator to respond to initiating events. No violation of regulatory requirements occurred.

The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was more than minor because it affected the Mitigating Systems cornerstone objective to ensure availability, reliability, and capability of the CTG 11-1 system to respond during initiating events. This issue was considered a finding of very low safety significance.
Inspection Report# : 2003009*(pdf)*

Significance: G Sep 30, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Apply Adequate Design Control Measures Results in Equipment Exceeding Its Design Basis Service Life.

The inspectors identified a Non-Cited Violation of Criterion III of Appendix B to 10 CFR Part 50, for failure to assure adequate design controls were in place to ensure that Agastat general purpose relays would be replaced prior to exceeding their design basis life. Although the licensee's preventive maintenance program allowed safety-related general purpose relays to remain in service beyond their design basis life, a review of work history identified no general purpose relays that had malfunctioned due to heat-related problems.

This finding is greater than minor because, if left uncorrected, it would become a more significant safety concern. Specifically, the licensee's process of including a 25 percent grace period on most preventive maintenance tasks could allow a component to remain in service longer than the design basis lifetime, thus reducing the reliability of that component to perform its intended safety function. Because the relay that was found in service beyond its design basis lifetime remained functional, this finding did not represent an actual loss of a safety function. Therefore, this finding is characterized as an issue of very low safety significance.
Inspection Report# : 2003008*(pdf)*

Significance: G Sep 30, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to Implement Design Control Processes for Adding Plastic Sleeves on EDG Drain Line.
The inspectors identified a Non-Cited Violation of Criterion III of Appendix B to 10 CFR Part 50, for site personnel installing plastic sleeves on the drain lines for all four emergency diesel generators without using the design control measures for design changes specified in Procedure MES 12, "Temporary Modifications." Consequently, installation of the plastic sleeves for the drain line on Emergency Diesel Generator 11 restricted the oil draining capacity of the diesel and was a contributing cause for oil reaching the hot exhaust manifold and creating a fire.

This finding is greater than minor because it affected the Mitigating System Cornerstone of equipment reliability. Specifically, the plastic sleeves restricted the fuel oil draining flow for Emergency Diesel Generator 11. The restriction caused the fuel oil to collect on the injector deck, migrate, and collect on the hot exhaust manifold piping insulation and catch fire. The finding is of very low safety significance because the fire was manually suppressed using available fire extinguishers before substantial damage to Emergency Diesel Generator 11 occurred. Also, emergency onsite power availability was maintained in that only one of four emergency diesel generators was impacted.
Inspection Report# : 2003008*(pdf)*

Barrier Integrity

Significance: G Jun 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
A High Pressure Coolant Injection outboard steam isolation valve failed to close on demand.
A finding of very low safety significance was identified during surveillance testing when a High Pressure Coolant Injection outboard steam isolation valve failed to close on demand due to the improper installation of contactors in the valve closing circuit. The primary cause of this finding was related to the cross-cutting area of Human Performance.
This finding was more than minor because the finding was associated with the SSC [Structures, Systems and Components] and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was of very low safety significance because the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere, an actual open pathway in the physical integrity of the reactor containment, or an actual reduction of the atmospheric pressure control function of the reactor containment. One Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instruction, Procedures, and Drawings," was identified. Corrective actions to address this issue included replacing the contactors and training station electricians on the lessons learned from this event.
Inspection Report# : 2004004*(pdf)*

Emergency Preparedness

Significance: SL-IV Dec 31, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
10 CFR 50.54(q) Violation for decreasing the effectiveness of the E-Plan by changing EALs that address toxic gases without prior NRC approval
Severity Level IV. The inspectors identified that the licensee changed its standard emergency action level (EAL) scheme on December 19, 2000, for those events related to toxic gas releases for Unusual Event and Alert classifications. The inspectors determined these changes decreased the effectiveness of the emergency plan, and the licensee did not obtain prior NRC approval, contrary to the requirements of 10 CFR 50.54(q).

Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process as specified in Section IV.A.3 of the Enforcement Policy. According to Supplement VIII of the Enforcement Policy, this issue was determined to be a Severity Level

IV violation because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to two EALs and was not indicative of a functional problem with the EAL scheme. Because the licensee has entered this issue into its corrective action program it is being treated as a Non-Cited Violation. (Section 1EP4)
Inspection Report# : 2003010*(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Oct 24, 2003
Identified By: NRC
Item Type: FIN Finding
Identification, Evaluation and Resolution of Issues
The team concluded that the licensee was generally effective in the identification, evaluation and resolution of issues. However, the team's reviews of events documented in CARDs over the past 2 years pointed at decline in performance that was not related to the corrective action program, but related to poor performance in other areas. The corrective action process was being used to address these events. In July of 2002, mechanics simultaneously opened core spray containment isolation valves, and in October of 2002, the failure of circulating water pump casing bolts caused a reactor scram. In 2003, removal of residual heat removal system insulation at power put system operability at risk, including a potential entry into the reactor shutdown requirements of Technical Specification 3.0.3. This issue distracted operators, contributing to a violation of Technical Specifications for a primary containment isolation penetration not being isolated within 4 hours. During the loss of grid voltage in August of 2003, the station blackout combustion turbine generator failed to start, and in October, a reactor shutdown was initiated when the chillers in both trains of control room ventilation failed to start.
There were several observations by inspectors that were already identified in the licensee's assessments of the corrective action program. These included a backlog of Level 4 CARDs, documentation that was not clear and complete, and the self-assessment program in need of restructuring. Inspectors also observed that tracking corrective action through the documentation was sometimes difficult, although no lost items were identified. Quality Assurance assessments were thorough and added value.
Inspection Report# : 2003009*(pdf)*

Last modified : September 08, 2004