Fermi 2
3Q/2007 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2007
Identified By: NRC
Item Type: FIN Finding
Failure to Control Transient Combustibles
The inspectors identified a finding of very low safety significance after the inspectors observed numerous fire hazards during a walkdown of several non-safety-related buildings located inside the protected area and the 120 kilovolt (kV) switchyard. These conditions increased the potential for a loss of offsite power from an external fire due to the loss of the 345 kV relay building and 120 kV relay building. The licensee removed the transient combustibles. The inspectors determined the finding was associated with cross-cutting aspect H.4(c), Human Performance, Work Practices.

This finding was considered more than minor because it increased the potential for a loss of offsite power due to an external fire. The finding was of very low safety significance because there was a reasonable potential for the licensee to identify and respond to a fire. Additionally, the emergency diesel generators were available and licensee control room staff were routinely trained in existing station procedures for addressing loss of offsite power. No violation of NRC requirements occurred.
Inspection Report# : 2007004 *(pdf)*

Mitigating Systems

Significance: G Sep 06, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
EDG Cable Design Deficiency
The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” having very low safety significance (Green) involving inadequate cable design. Specifically, the inspectors identified that the licensee failed to implement licensing and design basis requirements when specifying and purchasing safety-related and non-safety-related cables. The cables installed between the residual heat removal complex and the reactor building, which were located below the maximum ground water level, were not designed for continuous underwater service. The licensee performed an operability evaluation and concluded that the cables remained operable, but were non-conforming. The licensee entered this performance deficiency into their corrective action program for resolution. This finding also has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee did not thoroughly evaluate the conditions identified in previous corrective action documents.
The finding was more than minor because the failure of these cables could prevent both onsite and offsite power from energizing safety-related busses and could have affected the mitigating systems cornerstone objective of design control. The finding was of very low safety significance based on the results of the licensee’s analysis and screened as Green using the SDP Phase 1 screening worksheet.
Inspection Report# : 2007003 *(pdf)*

Significance: G Sep 06, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
HPCI Vortex and NPSHA Calculations Were Not Based on Maximum System Flow Rate
The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” having very low

safety significance (Green) involving the available Net Positive Suction Head (NPSHA) and vortex calculation for the high pressure core injection (HPCI) pump. Specifically, the inspectors identified that the licensee failed to evaluate the effect of the system controller set point being set to control the HPCI flow at 5250 gallons per minute (gpm); whereas the calculation established the NPSHA and vortex limits based on the nominal system flow of 5000 gpm. There was not an operability issue, as the licensee verified through calculations that there was still a positive margin available to ensure the pump would function as designed. The licensee entered this performance deficiency into their corrective action program for resolution.

The finding was more than minor because the failure of the pump could have prevented the HPCI system from injecting water into the reactor vessel as required and could have affected the mitigating systems cornerstone objective of design control. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.
Inspection Report# : 2007003 *(pdf)*

Significance:  Sep 06, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
HPCI Pump IST Acceptance Criterion Was Not Conservative with Respect with the System Performance Requirements
The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance (Green) involving a non-conservative acceptance criteria used to verify that high pressure core injection (HPCI) pump could meet its Technical Specifications performance requirement. Specifically, the inspectors identified that the licensee failed to evaluate the effect of the instrument error. The licensee determined that the current acceptance criterion was non-conservative with respect to the system performance requirement. The licensee's review of previous test results identified that with the exception of one point, all previous tests conducted during past two and a half years exceeded the minimum required performance. The licensee entered this performance deficiency into their corrective action program for resolution with actions including addressing past reportability of the test point below the system performance requirement and development of the new acceptance criterion. This finding also has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee did not thoroughly evaluate the known low margin conditions existing in the system as noted in previous corrective actions documents.

The finding was more than minor because the failure of the pump to provide its design flow could have prevented the HPCI system from performing it safety function and could have affected the mitigating systems cornerstone objective of design control. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.
Inspection Report# : 2007003 *(pdf)*

Significance:  Jun 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Restoration of Drywell Following SBO Event Does Not Control Rate of Heat Addition to EECW and No Analyses Were Performed for Potential Two Phase Flow and Water Hammer
The inspectors identified a finding of very low safety significance involving an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control." The inspectors determined the licensee did not have analyses or adequate procedural guidance to ensure the emergency equipment cooling water (EECW) and emergency equipment service water (EESW) systems would be capable of operating with a high temperature in the drywell after a postulated station blackout event. The licensee entered the issue into their corrective action program to revise the station blackout procedure by providing additional guidance on restoring flow.

The finding was more than minor because the high temperature water in the drywell coolers and piping could cause two phase flow and water hammer in the EECW system. In addition, a procedure instructed operations to turn on numerous drywell cooler fans which could cause the EECW and EESW systems to exceed their design temperatures for pumps, heat exchangers, and piping. This finding was evaluated using the Phase 2 SDP and determined to be of very low safety significance (Green), because of the low probability of station blackout event at Fermi.
Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 30, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Properly Install RCIC Mechanical Seal
An NCV of 10 CFR 50, Appendix B, Criterion V, "Procedures," for the failure to maintain adequate maintenance procedures to install the outboard mechanical seal for the reactor core isolation cooling pump was self-revealed when the seal failed. The procedure did not contain adequate guidance on the proper installation of the mechanical seal. As a result, the outboard seal was installed improperly and failed ten months later. The licensee replaced the seal and updated the maintenance procedure. The inspectors determined the finding was associated with cross-cutting aspect H.2(c), Human Performance, Resources.

This finding was considered more than minor because it contributed to a subsequent seal failure that affected pump operability as it increased pump unavailability more than a negligible amount. This finding was determined to be of very low safety significance because it did not represent a loss of high pressure safety injection, it did not result in an actual loss of the system for greater than 14 days, and it did not screen as potentially risk significant for external events.
Inspection Report# : 2007004 *(pdf)*

Significance: G Dec 31, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
EDG-14 Fast Start, Slow Start and Run, and Load Reject
A self-revealed NCV was identified for failure to comply with 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when an operator failed to properly follow procedures. As a result, an operator inadvertently caused a generator overvoltage trip on emergency diesel generator (EDG)-14 during surveillance testing, which rendered it unavailable and inoperable for approximately 15 hours beyond the scheduled duration. Immediate corrective actions included consultation with the vendor and inspection of the exciter panel to ensure no equipment damage occurred.

The finding was determined to be more than minor because it was associated with the Human Performance attribute of ensuring the availability, reliability, and capability of EDG-14 to respond to initiating events. The finding is of very low safety significance because all other EDGs remained operable and the actual loss of safety function of EDG-14 was shorter than its Technical Specification allowed outage time of 7 days. This finding had a cross-cutting aspect in the area of Human Performance because the licensee failed to follow procedures when personnel flashed the field at idle speed, despite guidance in relevant procedures and the work request to remain at idle speed and not flash the field.
Inspection Report# : 2006005 *(pdf)*

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inappropriate Use of Risk in Operability Evaluations
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to adequately control the design of the plant when thermal insulation was removed from piping in the reactor building at power without a proper operability evaluation. In evaluating the room area temperatures with insulation removed from piping, the licensee inappropriately relied on risk to justify operability. As a result, the licensee consistently performed an improper evaluation of insulation removal since September 20, 2001. After the deficient evaluation was identified on June 16, 2006, the licensee replaced the insulation and performed a past operability evaluation.

This finding is more than minor because the inspectors identified significant programmatic deficiencies that could lead to worse errors if uncorrected. The finding is of very low safety significance because a review of all previously identified on-line insulation removals did not identify any instances where equipment was later determined to have been inoperable. This finding had a cross-cutting aspect in the area of Human Performance (decision making component) in the aspect of conservative assumptions, because the licensee did not thoroughly evaluate for operability the removal of thermal insulation from potentially hot pipes in EQ areas of the plant, which was an issue that could have impacted nuclear safety.

Inspection Report# : 2006005 *(pdf)*

Barrier Integrity

Significance: G Sep 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Preventive Maintenance Deferral Evaluations
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, “Procedures,” for the failure to follow procedural requirements for evaluating a preventive maintenance deferral for a main steam line drain valve. The inadequate deferral evaluation contributed to the inadequate response to the valve failing to close which led to conditions warranting a Notification of Unusual Event. The licensee entered the issue into their corrective action program as condition assessment resolution document (CARD) 07-24284, increased the level of management oversight, revised procedures, and trained personnel . The inspectors determined the finding was associated with cross-cutting aspect H.4(b), Human Performance - Work Practices.

This finding was determined to be more than minor because the failure to properly evaluate a preventive maintenance deferral contributed to a significant event, specifically high radiation levels exceeding the emergency action level limit for a notification of unusual event. This finding was determined to be of very low safety significance because it did not represent a degradation of the control room barrier, an actual open pathway in the physical integrity of reactor containment, or an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of containment. (Section 1R15.b.1).

Inspection Report# : 2007005 *(pdf)*

Significance: G Jun 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Residual Heat Removal/Feedwater Injection Check Valves Inadequate Goal Monitoring in 10 CFR 50.65(a)(1) Status
The inspectors identified an NCV of paragraph (a)(1) of 10 CFR 50.65, “Maintenance Rule,” for the failure to monitor the performance of the feedwater and residual heat removal injection check valve component class against licensee-established goals when the licensee classified the system as (a)(1) under the maintenance rule. The licensee developed goals but failed to monitor the component class against those goals. Consequently, the licensee failed to take appropriate corrective action as evidenced by the local leak rate test failure of both containment isolation valves in a feedwater injection penetration. The licensee entered the issue into their corrective action program to review the issue and develop corrective actions as appropriate and returned the component class to (a)(1) status. The inspectors determined the finding was associated with cross-cutting aspect P.2(b), Problem Identification and Resolution, Operating Experience.

This finding was considered more than minor because it was similar to a more than minor example in Appendix E of IMC 0612. Specifically, the component class was in (a)(1) status because the valves already exhibited significant equipment problems. This finding was determined to be of very low safety significance because the measured leakage rate was much less than 100 percent containment volume per day.
Inspection Report# : 2007004 *(pdf)*

Significance: G Jun 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform an Adequate Root-Cause Evaluation
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Actions,” for the failure to

identify the cause and take appropriate corrective actions for a significant condition adverse to quality. The licensee failed to perform an adequate root cause related to an event when the total leakage through a containment penetration exceeded the maximum allowable Technical Specification limit. After the issue was identified by the NRC, the licensee entered the issue into their corrective action program to further review the issue and develop additional corrective actions as appropriate. The inspectors determined the finding was associated with cross-cutting aspect P.1 (c), Problem Identification and Resolution, Corrective Action Program Evaluations.

This finding was considered more than minor because if left uncorrected, the finding would become a more significant safety concern. Specifically, because the licensee did not arrive at the proper root cause, the licensee could not provide assurance that appropriate corrective actions to prevent recurrence were implemented. This finding was determined to be of very low safety significance because the measured leakage rate was much less than 100 percent containment volume per day.
Inspection Report# : 2007004 *(pdf)*

Emergency Preparedness

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: FIN Finding
Inadequate Verification of Alternate Emergency Operations Facility Readiness
The inspectors identified a finding associated with the failure to verify adequate compensatory measures were in place while the Emergency Operations Facility (EOF) was unavailable. The licensee removed the EOF from service for remodeling and planned to use their Alternate EOF (AEOF) for emergency response if required as a compensatory action. However, locks placed on the doors to the AEOF and the lack of continuous staffing of the facility could have delayed activation of the facility. After the issue was identified by the inspector, the licensee took prompt interim corrective actions and entered the issue into their corrective action program.

This finding was determined to be more than minor because it was similar to an example in IMC 0612, Appendix E, in that the AEOF and the procedures for activating the AEOF were in a condition that could have delayed the licensee's response to an emergency. The finding was of very low safety significance because adequate compensatory measures were put in place within seven days. (Section 4OA3)

Inspection Report# : 2007002 *(pdf)*

Occupational Radiation Safety

Significance: G Mar 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform a Complete Calibration of the Containment High Range Area Radiation Monitor
The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation (NCV) of NRC requirements for the failure to maintain adequate procedures for the calibration of the containment high range area radiation monitors (D11-K816 A and B). Specifically, the licensee had revised its procedures in 2001 to remove the requirement to calibrate the detectors with a radioactive source of known activity. Consequently, the monitor had not been adequately calibrated since April 2000. Following that identification, the licensee performed an evaluation and determined that the monitor was functional based on its adequate response to ambient radiation levels.

The finding was more than minor because it was associated with the Occupational Radiation Safety cornerstone attribute of Plant Facilities/Equipment and Instrumentation and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from radioactive materials during civilian nuclear reactor operation. Since the finding involved area radiation monitors, the inspectors utilized Inspection

Manual Chapter 0609, Appendix C, “Occupational Radiation Safety SDP,” to assess its significance. Given that instrument functional response was determined through electronic calibration and a qualitative response to radiation, and since the issue did not involve as-low-as-is-reasonably-achievable planning or work controls, there was no overexposure or substantial potential for an overexposure to the worker, nor was the licensee’s ability to assess dose compromised; the inspectors concluded that the SDP assessment for the finding was of very low safety significance (Green). The licensee’s planned corrective actions included revising the applicable procedures to perform a full detector calibration utilizing a known source of radiation and including specific acceptance criteria, and clarifying Technical Specifications and the bases.

Inspection Report# : 2007002 *(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

Last modified : December 07, 2007