Fermi 2
2Q/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 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)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Temperatures in Dedicated Shutdown Panel Area - Balance of Plant Switchgear Room

The inspectors identified an NCV of License Condition 2.C.(9) having very low safety significance for the licensee's failure to ensure that alternative shutdown capability would accommodate post-fire conditions for 72 hours where offsite power is not available and that procedures were in effect to implement this capability. Specifically, the operators' ability to remain stationed at the dedicated shutdown panel (DSP) during a postulated fire scenario could have been challenged by the room temperatures where this panel was located. The procedures in effect did not warn operators of this condition nor provide direction to establish compensatory measures. The licensee's interim corrective actions for the postulated fire scenario were to rotate operators as needed and open doors to adjacent rooms to limit the impact of the temperatures until permanent installation of an area cooler to maintain temperatures in this room at 85 degrees Fahrenheit (°F).

The finding was more than minor because it was associated with the protection against external factors attribute of the mitigating system cornerstone and degraded the reactor safety mitigating systems cornerstone objective. The finding adversely impacted the capability of operators to achieve and maintain a safe shutdown condition following a postulated fire. This finding was determined to be of very low safety significance (Green) based on the scenario involved and a Phase 3 SDP evaluation.

Inspection Report# : 2006004 *(pdf)*

Significance: G Sep 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Emergency Diesel Generator Surveillance Test Procedures
The inspectors identified a finding of very low safety significance and an associated Non-Cited Violation of Technical Specification (TS) 5.4, "Procedures," for the licensee's failure to maintain surveillance test procedures for the Division 1 Emergency Diesel Generators (EDGs) that were appropriate to the circumstances. Specifically, on August 22, 1986, the NRC issued TS Amendment Number 4 to the operating license to address a design deficiency associated with the Division 1 electrical system. This amendment increased the Division 1 degraded grid relay voltage setpoints to allow for Division 1 operability. However, the licensee failed to increase the minimum voltage acceptance criteria for the Division 1 EDG surveillance test procedures to ensure operability of the affected components under all postulated conditions. As part of their corrective actions, licensee personnel established administrative controls pending procedure, and TS revision to ensure that future testing of the Division 1 EDGs would include the revised minimum required voltage acceptance criteria.

This finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because: (1) it was not a design or qualification deficiency; (2) it did not represent an actual loss of safety function of a system; (3) it did not represent an actual loss of safety function of a single train for greater than its TS allowed outage time; (4) it did not represent an actual loss of safety function of one or more non-TS trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours; and (5) it did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event.

Inspection Report# : 2006015 *(pdf)*

Significance: G Sep 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Control Design Change Leading to Undersized Control Power Transformers
The inspectors identified a finding and an associated NCV of 10 CFR Part 50, Appendix "B," Criterion III (Design Control) for the failure to adequately review the suitability of the design of 480 Volt breakers used for all four emergency diesel generator service water (EDGSW) pumps and the engine room supply ventilation fans for both Division 1 emergency diesel generators (EDGs). Licensee personnel failed to properly model the control power transformers (CPTs) when they calculated the minimum available voltage at the starting coils. As a result, all four EDGSW pumps and the Division 1 engine room fans could have failed to start due to inadequate voltage available to their respective starter coils. The licensee's immediate corrective actions included placing this issue into the corrective action program, completion of an extent of condition review, and performance of hardware modifications to restore

operability to affected components.

This finding is more than minor because it reduced the reliability of all four EDGs. This finding was also determined to potentially have greater significance because the loss of emergency alternating current electrical power would significantly impact the ability to ensure adequate core cooling following a loss of offsite power event. Because the unavailability of the EDG affected both the mitigating systems and barrier integrity cornerstones, a Phase 2 Significance Determination Process (SDP) analysis was performed. Because the Phase 2 analysis indicated potentially greater than very low safety significance, a Phase 3 SDP analysis was performed by the RIII Senior Reactor Analysts (SRAs). The result of the Phase 3 SDP analysis, after considering contributions from internal events, external events, and large early release frequency, was a change in core damage frequency less than 1.0 E-6, which is a finding of very low safety significance (Green). The primary cause of this finding was related to the cross-cutting area of Problem Identification and Resolution because licensee personnel failed to identify, in a timely manner, the use of under-sized CPTs despite numerous reasonable opportunities to do so during the design change implementation period from 1998 to 2006 and during investigation activities in response to NRC concerns about the adequacy of CPT sizing in 2005.

Inspection Report# : 2006015 *(pdf)*

Barrier Integrity

Significance:  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:  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)*

Significance: G Sep 30, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Control Entrance to an High Radiation Area by Issuance of an Radiation Work Permit
A self-revealed finding of very low safety significance and associated NCV of Technical Specification (TS) 5.7.1 was identified when a radiation worker entered a posted high radiation area without being on the designated radiation work permit task for this area. Specifically, the worker entered a posted high radiation area on a radiation work permit task that did not allow access to high radiation areas.

The finding was more than minor because the finding was associated with the human performance attribute of the occupational radiation safety cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. The finding was of very low safety significance because it did not involve: (1) as low as is reasonably achievable (ALARA) planning or controls; (2) an overexposure; (3) a substantial potential for an overexposure; or (4) an impaired ability to assess dose. The issue was a NCV of TS 5.7.1 which required, in part, that entrance to a high radiation area be controlled by issuance of a radiation work permit. A contributing cause of the finding is related to the cross-cutting element of human performance.
Inspection Report# : 2006004 *(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

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