Fermi 2
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Maintenance Risk Assessment
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4) for the failure to perform an adequate risk assessment for the Division I battery load test. The licensee failed to consider the effect the test would have on the temperature in the reactor protection system motor generator set rooms. Consequently, the load bank used for the test caused the room temperature to increase which necessitated the unanticipated installation of a temporary fan to cool the room. The licensee entered this issue into their corrective action program to evaluate any programmatic or procedural deficiencies that may have contributed to this event.

This finding is more than minor because the licensee's risk assessment failed to consider maintenance activities that could increase the likelihood of an initiating event, specifically a loss of shutdown cooling from a reactor protection system motor generator set trip on high temperature. The finding is of very low safety significance because it did not affect the ability of operators to recover from a loss of shutdown cooling if it had occurred. The cause of the finding is related to the cross-cutting element of Human Performance.
Inspection Report# : 2006003 *(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Control Transient Combustibles
The inspectors identified a finding of very low significance (Green) associated with a Non-Cited Violation of license condition 2.C(9) for the failure to appropriately control transient combustibles on multiple occasions. Personnel left aerosol cans containing flammable materials unattended on a workbench in violation of the licensee's procedure for the control of transient combustibles. Once these issues were identified, the licensee moved the cans to an appropriate flammable storage locker. The primary cause of this finding is related to the corrective action aspect of the problem identification and resolution cross-cutting area in that the NRC had previously identified issues relating to the failure to control transient combustible materials but adequate corrective actions were not put in place to prevent recurrence of this issue.

The finding was more than minor because the repeated failure to properly control combustible materials, if left uncorrected, could become a more safety-significant concern. This finding was of very low safety significance because the quantity of transient combustibles involved was low and the applicable fire barriers and suppression systems remained operable. (Section 4OA2.3)

Inspection Report# : 2006002 *(pdf)*

Mitigating Systems

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 Problem Identification and Resolution 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 potentially impacted nuclear safety.
Inspection Report# : 2006005 *(pdf)*

Significance: G Oct 13, 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)*

Significance: G Jun 30, 2006

Identified By: NRC
Item Type: NCV NonCited Violation
Unauthorized Transient Combustibles in Safety-Related Areas
The inspectors identified a non-cited violation of license condition 2.C(9) due to the presence of unauthorized transient combustible materials in the residual heat removal complex. An office chair and a plastic trash bin half filled with paper were secured next to the electrical panel and associated cable raceway for emergency diesel generator 12 ventilation in the emergency diesel generator 12 switchgear room. The licensee entered this issue into their corrective action program and removed the unauthorized transient combustible materials from the residual heat removal complex.

This finding is more than minor because it affected the Mitigating Systems Cornerstone attribute for protection against external factors. Specifically, a fire involving the unauthorized transient combustibles could have affected a nearby electrical panel and associated cable raceway containing mitigating system equipment important to safety. The finding is of very low safety significance because the unauthorized transient combustible materials would not have ignited from existing sources of heat or electrical energy. The cause of the finding is related to the cross-cutting element of Problem Identification and Resolution.

Inspection Report# : 2006003 *(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Improper Storage of Chemicals Affecting Fire Fighting Response
The inspectors identified a non-cited violation of license condition 2.C(9), for the failure to appropriately store chemicals in accordance with the fire hazards analysis. The licensee failed to evaluate the fire fighting response guidelines in NFPA-49 for various chemicals brought into the protective area and, therefore, failed to appropriately store them as required by the licensee's fire hazards analysis. As a result, five normally stored chemicals in the building have recommended fire fighting strategies that are inconsistent with the licensee's approved fire protection pre-plan. The licensee entered this issue into their correction action program.

This finding is more than minor because it represented a programmatic deficiency in the licensee's chemical control program which affected the ability of the fire brigade to respond to and mitigate the effects of a fire. Upon management review, the finding is of very low safety significance because the quantities of the relevant chemicals were low and the storage location was sufficiently remote from mitigating equipment.
Inspection Report# : 2006003 *(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Improper Evaluation of Standby Liquid Control Operability During Tank Sparging
The inspectors identified a non-cited violation of Technical Specification 3.1.5.a.2, Amendment 38, for the standby liquid control (SLC) system being inoperable for longer than the allowed time without the plant being placed in hot shutdown. The licensee failed to properly evaluate the operability of SLC during sparging activities when the issue was raised in 1999. As a result, the licensee initiated a 21-hour sparge on the SLC tank on August 24, 1999, and failed to take actions in accordance with the Technical Specifications. After the deficient evaluation was identified on June 1, 2006, the licensee revised the applicable procedures to declare the SLC system inoperable during sparging the SLC tank. The licensee entered this issue into their corrective action program.

This finding is more than minor because it affected the equipment performance attribute of the reactor safety cornerstone objective of ensuring the availability, reliability, and capability of mitigating equipment to respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because the total time of sparging activities was short.
Inspection Report# : 2006003 *(pdf)*

Significance: G Mar 31, 2006

Identified By: NRC
Item Type: NCV NonCited Violation
Failure of Breaker to Open
The inspectors identified a finding of very low significance associated with a Non-Cited Violation (NCV) of 10CFR50, Appendix B, Criterion XVI (Corrective Action) for the failure to identify and correct a condition adverse to quality related to the emergency diesel generator 12 (EDG-12) output circuit breaker cubicle. A newly installed, refurbished circuit breaker failed to open during an EDG-12 operability run on August 6, 2004. The licensee did not adequately identify and correct the conditions associated with this breaker failure, and, on February 3, 2006, a newly installed, refurbished breaker failed to open upon demand, resulting in additional unavailability time for EDG-12 and a challenge to the EDG's limiting condition for operation. The primary cause of this finding is related to the identification aspect of the problem identification and resolution cross-cutting area. The licensee replaced the refurbished breaker with the original breaker and successfully conducted the EDG operability run. In addition, the licensee planned to thoroughly inspect the breaker cubicle when the associated bus was de-energized during the April 2006 refueling outage.

The finding is more than minor because it was associated with the equipment performance attribute and affected the reliability objective of the Mitigating Systems Cornerstone. Using the Mitigating Systems Significance Determination Process, the inspectors determined the finding to be of very low safety significance because the inspectors answered no to all five phase 1 screening questions. (Section 1R19)

Inspection Report# : 2006002 *(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Control of Cables and Wiring in the Power Block
The inspectors identified a finding of very low significance (Green) associated with a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the failure to adequately control cabling for cameras, vibration monitoring, and telephones in the power block. The licensee did not perform the required evaluations prior to installing 195 cables in the reactor and auxiliary buildings, 4 of which crossed divisional boundaries. The licensee entered this issue into their corrective action program and conducted a thorough walkdown of all plant areas documenting all uncontrolled cables. The cables are being evaluated and processed through the new temporary modification process for engineering evaluation or removal. The primary cause of this finding is related to the corrective action aspect of the problem identification and resolution cross-cutting area.

The finding is greater than minor because it was associated with the design control attribute and affected the reliability objective of the Mitigating Systems Cornerstone. Using the Mitigating Systems Significance Determination Process, the inspectors determined the finding to be of very low safety significance because the finding was a design deficiency that did not result in a loss of function per GL 91-18 (rev 1). (Section 1R23.2)

Inspection Report# : 2006002 *(pdf)*

Significance: G Jan 13, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Non Conservative Calculation for Diesel Generator Loading
The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to consider the effects of frequency variation on diesel generator loading. Specifically, the licensee's diesel generator loading calculations failed to account for increased loading that could result from allowable frequency variations above the nominal generator frequency of 60 Hz. The licensee's corrective action was to evaluate the need for revised margin in the calculation due to frequency variations. This issue was more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring availability, reliability, and capability of systems needed to respond to a DB accident by failing to assure that the diesel generators would not inadvertently become overloaded. This finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. (Section 1R21.2.b.1)
Inspection Report# : 2005016 *(pdf)*

Significance: G Jan 13, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Adequate Leakage Criterion Not Established for the EDG Air Start System
The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to translate the design basis requirements for each of the Emergency Diesel Generator starting air systems into specifications, procedures, and instructions. As a result of this failure, no objective evidence existed that the required emergency diesel generator starting air system capacity was being maintained. The licensee's corrective actions were to develop a formal calculation to document the acceptability of the Technical Specifications limit for the air capacity and to implement changes to the diesel starting air system and check valve testing, the process computer alarm setpoint, and the alarm response procedures. This issue was more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring availability, reliability, and capability of systems needed to respond to a DB accident by failing to assure that the degradation of the capability of the diesel starting air system would be detected. This finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. (Section 1R21.2.b.2)
Inspection Report# : 2005016 *(pdf)*

Significance: G Jan 13, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Translate CST Temperature Limit into Design Documents and Procedures
The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to establish the correct condensate storage tank temperature limit for use in the plant accident analyses and net positive suction head calculations and for the failure to translate the condensate storage tank temperature limit into plant procedures to ensure that temperature limits are not exceeded. The licensee's corrective action was the implementation of a tentative maximum condensate storage tank temperature limit and an analysis to demonstrate that there was adequate margin in the accident analysis. This issue was more than minor because it affected the Mitigating Systems Cornerstone objective of ensuring the reliability of Reactor Core Isolation Cooling, High Pressure Coolant Injection, and the Core Spray Systems because the failure to establish a temperature limit had the potential to reduce the margin of safety that the licensee believed to be available as a result of calculations. The finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. (Section 1R21.2.b.3)
Inspection Report# : 2005016 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Oct 13, 2006
Identified By: NRC
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)*

Significance: G Jun 30, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Design Control for Venting the Reactor Pressure Vessel Head
A self-revealed NCV was identified for the licensee's failure to comply with Technical Specification 5.4.1.a, written procedures shall be established, implemented, and maintained covering applicable procedures recommended in Regulatory Guide 1.33. The licensee did not adequately control the modification of the ventilation equipment used to vent airborne radioactive particulate to the refuel floor during reactor vessel floodup. Consequently, while raising reactor vessel water level, the improper venting led to personnel contaminations, uptakes of radioactive material, and the evacuation of the Reactor Building. The licensee entered this issue into their corrective action program and conducted an investigation into the event. The corrective actions recommended the development and implementation of an acceptable methodology for raising reactor water level.

This finding is more than minor because it affected the Occupational Radiation Safety Cornerstone of Radiation Safety due to individual worker unplanned, unintended dose. The finding was evaluated using the SDP and was determined to be a finding of very low safety significance because there was not a substantial potential for overexposure and the licensee's ability to assess dose was not compromised.

Inspection Report# : 2006003 *(pdf)*

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : March 01, 2007