Fermi 2
4Q/2010 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Adequately Control Loose Materials near the Switchyard
A finding of very low safety significance was identified by the inspectors for the licensee's failure to adequately control loose materials next to the 345kV switchyard. Specifically, the inspectors identified tarps next to the switchyard fence. Once this condition was identified, the licensee removed the material from the switchyard area. No violation of regulatory requirements occurred.

The finding was greater than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the loose items could affect the proper operation of the switchyard during periods of high winds. This finding was determined to be of very low safety significance because the finding was not a loss of coolant accident initiator, did not increase the likelihood of a fire or a flood, and did not contribute to the likelihood that mitigating equipment relied upon during a loss of division 2 offsite power sources would not be available. The inspectors determined that the failure to ensure that procedure changes were incorporated in procedures following corrective actions from previous findings also affected the cross-cutting area of PI&R, Corrective Actions (P.1(d)).

Inspection Report# : 2010003 *(pdf)*

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to include Turbine Building Heating Ventilation and Air Conditioning Fans in the Scope of the Maintenance Rule Program.
The inspectors identified a finding having very low safety significance with an Non-Cited Violation (NCV) of 10 CFR 50.65(b)(2)(iii), for the licensee's failure to include turbine building heating ventilation and air conditioning (TBHVAC) fans in the scope of their maintenance rule program. Specifically, the licensee failed to effectively control TBHVAC system components condition through the implementation of appropriate preventive maintenance as directed by the requirements of the maintenance rule. The TBHVAC system is used to maintain the turbine building at a negative pressure for radiological considerations and room and area temperature below design limits to prevent a Group 1 Isolation resulting in main steam isolation valves (MSIV) closure and a reactor trip. The licensee entered the issue into their corrective action program for further evaluation.

This finding was more than minor because it was associated with the Initiating Events cornerstone attribute of equipment performance, and affected the cornerstone objective to limit the likelihood of those event that upset plant stability and challenge critical safety functions during shutdown, as well as power operations. This finding is of very low safety significance (Green), because it does not contribute to the likelihood that mitigation equipment or functions will not be available. The inspectors determined there was no cross-cutting aspect associated with this finding because the system was initially scoped out during the initial baseline evaluation for maintenance rule in June 1995 and was not reflective of current performance. (Section 1R21.3.b.(4))
Inspection Report# : 2010006 *(pdf)*

Mitigating Systems

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Calculations for Availability of 120kV System Offsite Power
The inspectors identified a finding having very low safety significance with an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to perform adequate calculations to ensure the availability of offsite power. Specifically, on two occasions the licensee failed to perform adequate calculations to demonstrate the availability of 120kV system offsite power. The first occasion was related to the analysis in calculation DC-0919 for conditions when the System Service (SS) Transformer No. 64 load tap changer (LTC) was in service. The second occasion was related to TSR-35286, which analyzed conditions for placing the SS Transformer No. 64 LTC in manual. This finding was entered into the licensee’s corrective action program to revise the calculations and perform an Engineering Functional Analysis (EFA) to demonstrate operability.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related equipment to respond to initiating events to prevent undesirable consequences. Specifically, there was reasonable doubt as to whether the offsite power supply would remain operable during a design basis event pending re-analysis. This finding is of very low safety significance (Green) because the design deficiency was confirmed not to result in loss of operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because the licensee did not provide a complete, accurate, and up-to-date design documentation, to assure nuclear safety. (IMC 0310, Section 06.01.b.(3) [H.2(c)]) (Section 1R21.3.b.(1))
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Controlling Availability of 120kV System Voltage
The inspectors identified a finding having very low safety significance (Green) with an associated NCV of Technical Specifications 5.4.1.a, “Procedures” for the licensee’s failure to translate the design requirements for the availability of the 120kV offsite power into station operating procedures, which are used to control voltages on the offsite power system within acceptable ranges. Specifically, the licensee failed to translate the 2.1 percent switchyard voltage drop criteria assumed in calculation DC-0919 into station operating procedures. This finding was entered into the licensee’s corrective action program to revise the calculations and perform an EFA to demonstrate operability.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related equipment to respond to initiating events to prevent undesirable consequences. Specifically, the licensee did not ensure the availability of the 120kV power source to 4160V safety buses by implementing procedural controls to ensure that the step voltage decrease on the trip on the Fermi generating unit did not exceed the 2.1 percent value analyzed in calculation DC-0919. This finding is of very low safety significance (Green), because the design deficiency was confirmed not to result in loss of operability or functionality. The inspectors concluded that the cause of the finding was related to the cross-cutting aspect of Human Performance, Resources, because the licensee did not provide complete, accurate, and up-to-date design documentation to assure nuclear safety. (IMC 0310, Section 06.01.b.(3) [H.2(c)]) (Section 1R21.3.b.(3))
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Adequate Calculation for DC Short Circuit Analysis
. The inspectors identified a finding having very low safety significance with an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to accurately account for the cable resistance for the reactor core isolation cooling (RCIC) and high pressure core injection (HPCI) dc Motor Operated Valves (MOVs) in the DC short circuit calculation. The issue, along with other related electrical calculational errors, was

entered into the licensee's corrective action program.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related equipment to respond to initiating events to prevent undesirable consequences. This finding is of very low safety significance (Green) because the design deficiency was confirmed not to result in loss of operability or functionality. The inspectors concluded that the cause of the finding was related to the cross-cutting aspect of Human Performance, Resources, because the licensee did not provide complete, accurate, and up-to-date design documentation to assure nuclear safety. (IMC 0310, Section 06.01.b.(3) [H.2(c)]) (Section 1R21.3.b.(5))
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Adequately Evaluate Industry Operating Experience for Applicability to Fermi 2
The inspectors identified a finding of very low safety significance (Green) for the licensee's failure to adhere to operating experience program procedural requirements. Specifically, the inspectors identified three instances where the licensee failed to adequately evaluate and take appropriate corrective actions on industry operating experience contrary to the requirements in licensee's operating experience Procedure MLS04, Revision 22. Also, based on the inspectors' finding, the licensee performed an extent of condition and identified approximately 30 more operating experience reviews performed within the last two years as less than adequate. No violation of NRC requirements occurred.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring equipment availability and reliability. Specifically, multiple examples were identified where the licensee failed to ensure that problems identified in industry operating experience were evaluated for applicability to Fermi and corrective actions implemented. This finding is of very low safety significance (Green) because the design deficiency was confirmed not to result in loss of operability or functionality. The inspectors concluded that the cause of the finding was related to the cross-cutting element of Problem Identification and Resolution, Operating Experience, because the licensee failed to systematically collect, evaluate, and communicate to affected internal stakeholders in a timely manner relevant internal and external operating experience to support plat safety. (IMC 0310, Section 06.02.b.(1) [P.2(a)]) (Section 1R21.4.b)
Inspection Report# : 2010006 *(pdf)*

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Calculations for Backfit Modifications
. The inspectors identified a finding of very low safety significance (Green) with an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance with two examples, for failing to perform adequate electrical design calculations to support modifications to the degraded voltage protection scheme. The first example involved the failure to analyze motor starting capability based on voltages afforded by the degraded voltage relay scheme. The second example involved the failure to perform conservative calculations to show that spurious grid separation would not occur during accidents due to action of the degraded voltage relays. This finding was entered into the licensee's corrective action program to revise the calculations and perform an EFA to demonstrate operability.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related equipment to respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to confirm the adequacy of new degraded voltage relay set-points by ensuring motors had adequate voltage to start if safety buses remained connected to offsite power during a LOCA with degraded voltage. In addition, the licensee failed to ensure that spurious grid separation would not occur during accidents due to action of the degraded voltage relays. This finding is of very low safety significance (Green) because the design deficiency was confirmed not to result in loss of operability or functionality. The inspectors concluded that the cause of the finding was related to the

cross-cutting aspect of Human Performance, Resources, because the licensee did not provide complete, accurate, and up-to-date design documentation to assure nuclear safety. (IMC 0310, Section 06.01.b.(3) [H.2(c)]) (Section 1R21.5.b)
Inspection Report# : 2010006 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Plastic Face Shield Lost in the Reactor Cavity
A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," were identified by the inspectors for the licensee's failure to follow procedures and review the accident analysis in Updated Final Safety Analysis Report (UFSAR) Chapter 15 for the operability evaluation of a face shield lost in the reactor cavity, which could impact coolant flow to a fuel channel. Specifically, the licensee failed to follow Procedure MES27, "Fermi 2 Engineering Support Conduct Manual," which requires evaluations needed to understand the potential consequences of the plant condition. As corrective action, the licensee revised their operability evaluation, EFA B11 10 011, to include the needed information to address the accident analysis with potential flow channel blockage.

The inspectors determined the finding was more than minor because it impacted the configuration control attribute of the Barrier Integrity Cornerstone in IMC 0612, Appendix B, Reactor Safety. The deficiency adversely affected the Barrier Integrity Cornerstone objective to provide reasonable assurance that the clad barrier would be effective as a barrier from releases during plant events, in that the deficient evaluation could challenge the clad integrity. The Finding was determined to be of very low safety significance, Green, because the licensee took action before reactor start-up to ensure additional evaluation was completed, and the issue affects the fuel barrier only, in accordance with Table 4a of IMC 0609.04. This finding has a cross cutting aspect in the area of Human Performance, Resources, conservative assumptions, because the licensee failed to provide complete information in the operability determination that would allow Operations to fully understand the potential consequences of the issue. Specifically, the licensee judged that the condition remained bounded without defining the analyzed parameters, and the licensee failed to validate the underlying assumptions in the evaluation.

Inspection Report# : 2010005 *(pdf)*

Significance: G Apr 05, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Motor Starting Voltage Calculations
The inspectors identified a finding of very low safety significance (Green) with an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failing to perform proper motor starting studies to demonstrate that motors would successfully start when connected to the offsite power supply. This finding was entered into the licensee's corrective action program to revise the calculations and perform an EFA to demonstrate operability.

The finding was more than minor because it was associated with the Barrier Integrity cornerstone attribute of design control and affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, failing to demonstrate that the approved design was adequate to ensure safety-related motors have sufficient voltage to start created a reasonable doubt as to the operability of the control complex hearing ventilation and air-conditioning system needed to provide a radiological barrier for control room personnel during an accident. The inspectors determined that this finding is of very low safety significance (Green) because the radiological function of the control complex was not affected. The inspectors concluded that the cause of the finding was related to the cross-cutting aspect of Human Performance, Resources, because the licensee did not provide complete, accurate, and up-to-date design documentation to assure nuclear safety. (IMC 0310, Section 06.01.b.(3) [H.2(c)]) (Section 1R21.3.b.(2)).

Inspection Report# : 2010006 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure of Condensate Filter Demineralizer 'D' Main Drain Valve
A self revealed finding of very low safety significance (Green) and associated NCV of Technical Specification (TS) 5.5.4.c, Radiation Effluent Controls Program, were self-revealed for failure to monitor an effluent release path when the condensate filter demineralizer (CFD) 'D' drain valve failed in the open position resulting in approximately 100,000 gallons of water being released into the radwaste and turbine buildings. An approximately 100 gallon mixture of the water and resin entered the plant sanitary waste system and traveled outside of the protected area as an unmonitored release. The design of the sanitary pipe that allowed crossing the power block boundary without a monitoring system was a performance deficiency. The licensee immediately stopped pumping sanitary waste and closed all facilities onsite until the system had been cleaned.
The inspectors determined the finding was more than minor in accordance with IMC 0612, because the performance deficiency is associated with of the Plant Facilities/Equipment attribute of the Public Radiation Safety Cornerstone and the performance deficiency adversely affects the associated cornerstone objective. Specifically, the performance deficiency resulted in the unmonitored release of radioactive material to the public domain. The finding was assessed using the Effluent Release branch of the Public Radiation Safety SDP and was determined to be of very-low-safety significance, because the resultant dose impact to a member of the public from the radioactive release was less than the dose values in Appendix I to 10 CFR 50 and 10 CFR 20.1301 (e). Therefore, the finding is classified as Green.
This finding has a cross cutting aspect in the area of Human Performance, Decision Making, Systematic Process. Specifically, the inspectors determined that design of the sanitary waste system was not properly evaluated and reviewed in a systematic process to meet the UFSAR requirements.
Inspection Report# : 2010005 *(pdf)*

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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