

Fermi 2

4Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Control Loose Materials in the Switchyard.

A finding of very low safety significance was identified by the inspectors for the licensee's failure to adequately control loose materials in the 345kV switchyard. Specifically, the inspectors identified a wooden pallet and multiple wooden boards, stanchions, and saw horses inside the switchyard fence. Once this condition was identified, the licensee removed the material from the switchyard. No violation of regulatory requirements occurred.

The finding was greater than minor because, if left uncorrected, it would become 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 II offsite power sources would not be available. The inspectors determined that the failure to ensure supervisory and management oversight of work activities also affected the cross-cutting area of Human Performance, Work Practices (H.4.c).

Inspection Report# : [2008004](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: FIN Finding

Inadequate Heat Exchanger Inspection Frequency

A finding of very low safety significance was identified by the inspectors for the failure to test and/or inspect the safety-related non-interruptible air supply (NIAS) control air compressor (CAC) aftercoolers in accordance with Generic Letter (GL) 89-13 commitments. The licensee inspected the heat exchangers every 10 to 12 years which was not in accordance with their GL 89-13 commitment to frequently inspect them. This finding was entered into the licensee's corrective action program (CAP) as condition assessment and resolution document (CARD) 08-27672. Corrective actions planned included changing the frequency to comply with the licensee's GL 89-13 commitment. No violation of regulatory requirements occurred.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because the finding was confirmed not to result in a loss of operability or functionality. No cross-cutting aspect was assigned because this issue is not indicative of current plant performance.

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Control Air Compressor Capacity Test Program

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was identified by the inspectors for the failure to perform adequate testing for both the Division 1 and 2 CACs. Specifically, the licensee failed to incorporate appropriate acceptance criteria and failed to include appropriate test methodology in the test procedures for the safety-related CACs. Corrective actions planned included revising and/or re-performing the test procedures as necessary.

The finding was more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because the finding was confirmed not to result in a loss of operability or functionality. No cross-cutting aspect was assigned because this issue is not indicative of current plant performance.

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Install Smoke Detectors in the Reactor Building, First Floor, Beam Pockets.

The inspectors identified an NCV of Condition 2.C.(9) of the Fermi-2 Facility Operating License NPF-43 for the failure to have adequate fire detection installed in the reactor building first floor in accordance with the applicable National Fire Protection Association codes. Specifically, the licensee failed to install detectors in two beam pockets. Once this condition was identified, the licensee implemented additional compensatory measures for the lack of adequate detectors.

The finding was greater than minor because it affected the Mitigating Systems Cornerstone attribute of protection against external factors (fire) and it impacted the objective of the Mitigating Systems Cornerstone. As a result of not having an adequate number of detectors, detection of a fire in the reactor building could have been delayed. This finding was determined to be of very low safety significance based on the availability of safe shutdown equipment and the low number of ignition sources. The inspectors determined that the failure to have adequate detection and compensatory measures also affected the cross-cutting area of Problem Identification and Resolution, CAP, Corrective Action (P.1.d).

Inspection Report# : [2008004](#) (*pdf*)

Significance: SL-IV Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate 10 CFR 50.59 Evaluation for Reactor Building Missile Protection.

The inspectors identified a Green (Severity Level IV) NCV for an inadequate 10 CFR 50.59, "Changes, Tests, and Experiments," evaluation resulting in failure to receive prior NRC approval for changes in licensed activities associated with protection of safety-related equipment against tornado generated missiles. Specifically, the licensee failed to demonstrate that the proposed change did not result in an increase in the probability of a malfunction of equipment important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). As part of the corrective actions, the licensee installed missile shields and initiated a study to determine the appropriate long-term corrective actions.

The finding was greater than minor because the change had the potential for impacting the NRC's ability to perform its regulatory function as the inspectors determined the change would have required prior NRC approval. Based on a phase 3 significance determination, the senior risk analyst determined the finding was of very low safety significance because the change in core damage frequency for this finding was calculated to be less than 1.0E-7. This was determined to be a Severity Level IV NCV of 10 CFR 50.59(a)(2)(i) (1989).

Inspection Report# : [2008004](#) (pdf)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Maintain Plant Flooding and Pipe Break Design Basis Requirements

A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to ensure the design basis flooding and pipe break criteria were properly incorporated into drawings, procedures, and instructions. Specifically, the inspectors identified three examples of where the failure to either install or properly control flood mitigation barriers could have adversely impacted safety-related equipment during a postulated medium energy pipe break. The licensee entered this issue into their corrective action program. Immediate corrective actions included the installation of barriers to mitigate postulated pipe breaks.

This finding was more than minor because the performance deficiency rendered the Division I AC power sources inoperable. This finding was of very low safety significance because the risk significance due to external events (flooding) and large early release fraction was very low.

Inspection Report# : [2008003](#) (pdf)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Maintain Configuration Control of Pipe Spray Shrouds

A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to ensure the configuration of spray shrouds was properly controlled. The inspectors identified four locations where the shrouds were not properly secured. The licensee had unstapled the shrouds to install temporary flow meters on the pipes but did not re-staple the shrouds upon completion of the work. The licensee entered this issue into their corrective action program. Immediate corrective actions included re-securing the affected spray shrouds.

This finding was more than minor because the performance deficiency contributed to the failure to re-secure the spray shrouds in four locations which would have impacted the ability of the shrouds to perform their function. This finding was of very low safety significance because the risk significance due to external events (flooding) and large early release fraction was very low. The inspectors identified a cross-cutting aspect in the area of Human Performance, Work Control, H.4(a).

Inspection Report# : [2008003](#) (pdf)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Undocumented Technical Basis for Change to EOP ATWS Mitigation Strategy

. The inspectors identified a finding of very low safety significance and associated NCV of Fermi Unit 2 Technical Specification (TS) 5.4.1, for failing to maintain adequate procedures for implementing the emergency operating procedures (EOPs). Specifically the licensee developed and implemented a procedure (flowchart) that altered an EOP mitigation strategy without establishing and documenting the technical basis for the deviation from the Boiling Water Reactor Owners Group (BWROG) Emergency Procedure Guidelines (EPG). The licensee entered the issue into their corrective action program. Licensee corrective actions included revision of the flowchart to bring the mitigation strategy into alignment with the BWROG EPG.

This issue is associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and is more than minor in that the licensee implemented an EOP mitigation strategy that deviated from the BWROG EPG without providing adequate technical justification for the deviation, thereby affecting the cornerstone objective of ensuring that the licensee is capable of mitigating the undesirable consequences associated with an anticipated transient without scram (ATWS). The finding was determined to be of very low safety significance because no actual event or transient requiring use of the deficient procedure occurred while the deficient procedure was in effect.

Inspection Report# : [2008003](#) (pdf)

Significance:  May 08, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure Air Supply Tubing for Safe Shutdown Valves Free of Fire Damage

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of the Fermi 2 Facility Operating License Condition 2.C(9), for the fire protection program, was identified by the inspectors for the licensee failure to ensure that one redundant train of systems necessary to achieve and maintain hot shutdown conditions was free of fire damage during the process of implementing a plant modification. Specifically, the licensee failed to ensure that the air supply and its associated tubing for safe shutdown air operated valves T4901F468 and T4901F469 was free of fire damage for III.G.2 fire zones. The modification was lacking thorough review of the separation requirement specified in Appendix R. As a result, subsequent walkdown and analysis were required to verify that the air tubing associated with the above valves was not routed through the fire zone of concern.

The finding was more than minor because it affected the mitigating systems cornerstone attribute of protection against external factors (fire) and it impacted the objective of the mitigating systems cornerstone. Specifically, spurious closure of the above air operated valves due to loss of air could have rendered the Division II SRVs inoperable and could have complicated plant safe shutdown. The finding was of very low safety significance because the inspectors answered “no” to all five questions under the Mitigating Systems Cornerstone Column of the Phase 1 worksheet.

Inspection Report# : [2008006](#) (pdf)

Significance:  May 08, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

High Pressure Coolant Injection Room Sprinkler System Failed to Protect Against Hazard

A finding of very low safety significance and an associated NCV of the Fermi 2 Facility Operating License Condition 2.C(9), for the fire protection program, was identified by the inspectors for the failure to ensure the adequacy of a sprinkler system in Fire Zone 03RB. Specifically, the licensee failed to ensure that the capability of the sprinkler system installed in High Pressure Coolant Injection (HPCI) pump and turbine room (Fire Zone 03RB) was adequate to protect against the identified lubricating oil hazard of the HPCI turbine. The licensee entered the issue into their corrective action program and established hourly fire watches in Fire Zone 03RB as a compensatory measure.

The finding was more than minor because it affected the mitigating systems cornerstone attribute of protection against external factor (fire) and it impacted the objective of the mitigating systems cornerstone. The failure to ensure that the sprinkler system installed in Fire Zone 03RB protected against a fire involving the HPCI turbine impacted a defense and depth element of the fire protection program. The inspectors concluded that the finding was of very low safety significance because the majority of the mitigating systems were not being affected by the finding.

Inspection Report# : [2008006](#) (pdf)

Significance:  May 08, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Core Isolation Cooling Room Sprinkler System Improperly Installed

A finding of very low safety significance and an associated NCV of the Fermi 2 Facility Operating License Condition 2.C(9), for the fire protection program, was identified by the inspectors for the failure to install sprinkler system in accordance with the NFPA code of record. Specifically, the licensee failed to install three sprinkler heads located in the Reactor Core Isolation Cooling (RCIC) corner room in accordance with NFPA 13 Guidance in that the sprinkler deflectors were installed in excess of 12 inches below a smooth non-combustible ceiling. The licensee entered the issue into their corrective action program and established hourly fire watches in the RCIC fire zone as a compensatory measure. The finding has a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not use conservative assumptions in decision making in that evaluation FPEE-05-0020 failed to consider that activation of more distant sprinkler heads could result in preventable damage of other equipment. [H.1(b)]

The finding was more than minor because it affected the mitigating systems cornerstone attribute of protection against external factor (fire) and it impacted the objective of the mitigating systems cornerstone. Specifically the improper sprinkler installation impacted the defense and depth element of the fire protection program in the RCIC room in that it could have resulted in the delayed activation of the sprinkler system and an increased likelihood of damage to other safety-related equipment (i.e., Division 1 Core Spray pumps). The finding has a cross-cutting aspect in the area of Human Performance, Decision Making. The inspectors concluded that the finding was of very low safety significance because the majority of the mitigating systems were not being affected by the finding.

Inspection Report# : [2008006](#) (*pdf*)

Significance:  May 08, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Lack of Basis for Diesel Fire Pump Temperature De-Rating

A finding of very low safety significance and an associated NCV of the Fermi 2 Facility Operating License condition 2.C(9), for the fire protection program, was identified by the inspectors for the failure to provide a design basis for the general service water pump house (GSWPH) ambient temperature of 104°F used to evaluate the capacity of the diesel fire pump. The licensee entered the issue into their corrective action program and completed a preliminary analysis that showed the 104°F as a bounding value.

The finding was more than minor based on review of IMC 0612, “Power Reactor Inspection Reports,” Appendix E, “Examples of Minor Issues,” Example 3k. Specifically, the failure to provide a design basis for the assumed general service water pump house ambient temperature resulted in a reasonable doubt with regards to the functionality of the diesel fire pump because minimal margin for operability existed. The finding affected the mitigating systems cornerstone attribute of protection against external factor (fire) and it impacted the objective of the mitigating systems cornerstone. The inspectors concluded that the finding was of very low safety significance because the finding represented a low degradation since the functionality of the diesel fire pump was not affected.

Inspection Report# : [2008006](#) (*pdf*)

Significance:  May 08, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Alternate Shutdown Procedure Failed to Identify Time-Critical Steps

A finding of very low safety significance and an associated NCV of the Fermi 2 Facility Operating License Condition 2.C(9), for the fire protection program, was identified by the inspectors for the failure to have adequate shutdown procedure in the event of a fire in any of the alternate shutdown areas. Specifically, Abnormal Operating Procedure (AOP) 20.000.18 “Control of the Plant from the Dedicated Shutdown Panel,” did not specify the need to complete time-critical operator actions early in the procedure. Upon discovery, the licensee entered the issue into their corrective action program and revised procedure 20.000.18 and added an override caution note directed the operators to immediately perform the required steps in the event of multiple spurious operations of the SRVs.

The finding was more than minor because it affected the mitigating systems cornerstone attribute of procedure quality in the event of a fire and it impacted the objective of the mitigating systems cornerstone. Specifically, the failure to perform actions to mitigate the spurious opening of multiple SRVs in timely manor could have complicated plant

shutdown in the event of a fire. The finding was of very low safety significance based on a phase 3 SDP evaluation completed by Region III senior reactor analyst (SRA) in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process."

Inspection Report# : [2008006](#) (pdf)

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Control High Pressure Gas Cylinders in Proximity to Safety-Related Equipment

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, was identified by the inspectors for the failure to properly control high pressure gas cylinders in proximity to safety-related equipment. The inspectors identified high pressure gas cylinders that were not seismically restrained whose failure during a seismic event could have damaged safety-related equipment. The licensee immediately removed the cylinders and walked down all other compressed gas cylinders to ensure they were adequately restrained. The licensee entered this issue into their corrective action program.

The finding was more than minor because no engineering evaluation was performed to assess the seismic impact on the gas cylinders and a later evaluation determined that safety-related equipment was potentially affected. The finding was of very low safety significance because the calculated change in core damage frequency was $4.8E-7$ and there was no large early release frequency significance. The inspectors did not identify a cross-cutting aspect associated with this finding.

Inspection Report# : [2008002](#) (pdf)

Barrier Integrity

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform a Proper Engineering Evaluation on Replacing the Torus-to-Reactor Building Vacuum Breaker Differential Pressure Switches

A self-revealing finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified for the failure to perform a proper engineering evaluation. The licensee replaced both differential pressure switches associated with two torus vacuum breakers with a different model than previously installed but failed to ensure the suitability of the replacement switches for use in the intended application. Once identified, the licensee replaced both switches with suitable components. The licensee entered this issue into their corrective action program.

This finding was more than minor because the licensee installed both torus vacuum breaker switches without testing them under normal operating conditions to ensure they would perform their intended function. Specifically, both vacuum breakers were unavailable to provide their low pressure relief function after operating under normal conditions. This finding was of very low safety significance because the calculated change in large early release frequency was $8.42E-8$. The inspectors determined the finding was associated with cross-cutting aspect H.2(c), Human Performance, Procedures.

Inspection Report# : [2008002](#) (pdf)

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Licensee Procedures Failed to Contain Adequate Controls to Prevent Materials Stored on the Refuel Floor from Becoming Missiles During a Tornado Strike

A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, was identified by the inspectors for the failure to maintain adequate procedures. Licensee procedures failed to contain adequate controls to prevent materials stored on the refuel floor from becoming missiles during a tornado strike that could damage spent fuel assemblies. The licensee entered this issue into their corrective action program, removed all non-essential items from the refuel floor, properly restrained other items, and developed requirements for storing materials on the refuel floor.

The finding was more than minor because the finding could be reasonably viewed as a precursor to a significant event. Specifically, the failure to properly restrain heavy objects on the refuel floor posed a credible missile hazard to the spent fuel during a tornado strike on the reactor building. The finding was of very low safety significance after management review because the limiting consequence from fuel damage was associated with the regulatory limits for the radiological dose to control room staff. The inspectors did not identify a cross-cutting aspect associated with this finding.

Inspection Report# : [2008002](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

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 : April 07, 2009