Fermi 2

Initiating Events

Mitigating Systems

Significance: G Dec 29, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Use of Procedures During System Restoration
The inspectors identified an example of a Non-Cited Violation of Technical Specification 5.4.1.a for using the incorrect procedure for restoring the north reactor feedwater pump following emergent work activities that involved inappropriate opening of the north reactor feedwater pump discharge valve. Control room operators used a system operating procedure that required plant conditions of 950 pounds per square inch reactor pressure and both north and south reactor feedwater pump turbines operating. However, actual conditions were about 650 pounds per square inch reactor pressure and only the south reactor feedwater pump turbine was operating. The finding had an actual impact of: 1) discharging about 1.8 million pounds mass per hour of cold water moderator to the reactor vessel, 2) an unexpected power excursion from about 4 to 11 percent, causing a one-half scram signal from intermediate range monitor E, 3) an unexpected reactor water level increase to 225 inches, which was above the Level 8 trip setpoint, and 4) sending isolation signals to the high pressure coolant injection pump, reactor core isolation coolant pump and the only operating south reactor feedwater pump (stopping water to the reactor vessel). The finding was of very low safety significance because the event occurred during reactor startup and at low reactor power level and the power level excursion was not significant. Because the finding was of very low safety significance and the finding was captured in the licensee's corrective action program, this finding is being treated as an example of a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R13). The inspectors identified an example of a Non-Cited Violation of Technical Specification 5.4.1.a for not completing the valve lineup while venting and draining the Division 2 residual heat removal system after completing heat exchanger relief valve testing. The operator failed to complete the instructions for venting and draining the Division 2 residual heat removal system before the system was refilled and caused an inadvertent discharge of approximately 400 gallons of contaminated water into the reactor building. The finding was more than minor for the following reasons: 1) high contamination levels in the reactor building resulted from the spill, 2) the potential loss of residual heat removal cooling water from the system, and 3) the potential challenge to electrical equipment wetted from the spill. The finding was of very low safety significance because neither personnel contamination nor personnel overexposure occurred, electrical equipment was not damaged, and the residual heat removal system was not required at the time of the event. Because the finding was of very low safety significance and the finding was captured in the licensee's corrective action program, this finding is being treated as an example of a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R13).
Inspection Report# : 2001017*(pdf)*

Significance: G Aug 30, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
LICENSED OPERATOR REQUALIFICATION INSPECTION
The inspectors identified that two licensed operator medical records, out of a total population of nine medical records reviewed, involved deficiencies. Specifically, the facility licensee had failed to notify the NRC within 30 days of identifying two licensed operators who had developed permanent physical conditions that could potentially affect the ability to perform assigned licensed duties (10 CFR 55.25). The finding was of very low safety significance and considered a Non-Cited Violation because the license of the first operator had been inactive since before the medical diagnoses, and the physical condition of the second licensed operator had been successfully controlled by diet and medication.
Inspection Report# : 2001013*(pdf)*

Significance: G Aug 03, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to incorporate design requirements into test procedure as required by 10 CFR Part 50, Appendix B, Criterion XI, "Test Control."
GREEN. One Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was identified for the licensee's failure to appropriately incorporate into the residual heat removal (RHR) heat exchanger test acceptance criteria the requirements from applicable design documents. The safety significance of this finding was very low because the affected mitigation system remained operable. This issue was considered more than minor, because if left uncorrected, it could impact the ability of the licensee to detect degradation or loss of RHR heat exchanger function.
Inspection Report# : 2001012*(pdf)*

Significance: N/A Jul 27, 2001
Identified By: NRC
Item Type: FIN Finding
EDG 14 - the licensee performed a thorough evaluation of the bearing failure and identified the root cause and contributing causes for the event.

This supplemental inspection was performed by the NRC to assess the licensee's evaluation associated with a WHITE performance indicator for emergency alternating current (AC) power that resulted from the catastrophic failure of the outboard bearing for emergency diesel generator 14 on March 21, 2001. The bearing failure occurred during surveillance testing on the emergency diesel generator and was considered a self-revealing event. During this supplemental inspection, performed in accordance with Inspector Procedure 95001, the inspectors determined that the licensee performed a thorough evaluation of the bearing failure and identified the root cause and contributing causes for the event. The licensee's corrective action adequately addressed the causes and the extent of condition actions appeared sufficient to prevent the recurrence of a similar condition on other safety-related equipment. Due to the licensee's acceptable performance in addressing the emergency diesel generator bearing failure that resulted in a WHITE performance indicator, the WHITE indicator will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in Inspection Manual Chapter 305, "Operating Reactor Assessment Program."
Inspection Report# : 2001010*(pdf)*

Significance: Jun 30, 2001
Identified By: NRC
Item Type: VIO Violation
Catastrophic failure of the generator outboard bearing on emergency diesel generator 14
WHITE. On March 21, 2001, the generator outboard bearing on emergency diesel generator 14 catastrophically failed during a 24-hour endurance run due to a lack of lubrication in the bearing housing. Inadequate design control for modifying the oil sight glass piping through a stiffener bar in 1984 and inappropriate labeling of the acceptable operating ranges ("green bands") for the sight glass in 1999 caused the deficient condition. The failures to properly control these modifications were two examples of an apparent violation of 10 CFR Part 50, Appendix B, Criterion III. This issue was preliminarily assessed using the significance determination process as a WHITE finding because the increase in core damage frequency due to internal events was determined to be about 3.8 E-6 per year. In a letter dated September 14, 2001, the NRC issued the Final Significance Determination for a White finding and Notice of Violation. The NRC concluded that the inspection finding is appopriately characterized as White.
Inspection Report# : 2001009*(pdf)*

Significance: May 04, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Test procedure did not contain appropriate acceptance limits to assure check valve function; two examples of 10 CFR Part 50, Appendix B, Criterion XI
The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” with two examples. The first example involved failure to assure that the test for proper function of residual heat removal keep fill check valves in the residual heat removal system could detect a failure of the valves. The second example involved failure to include a design function for the residual heat removal pump discharge check valves in the inservice testing program. The finding was of very low safety significance because the licensee was able to show that current leakage past both groups of check valves was sufficiently small to preclude adverse effects on the residual heat removal system (1R21).
Inspection Report# : 2001005*(pdf)*

Significance: Feb 16, 2001
Identified By: Licensee
Item Type: NCV NonCited Violation
Inadequate HPCI Operating and Surveillance Procedures.
On January 13, 2001, a pressure transient occurred in the discharge piping of the HPCI system when the system was being started for surveillance testing. The transient was caused by a leaking injection isolation valve which allowed backleakage of hot water to create steam voids in the piping and inadequate venting of the system prior to start up. Evaluation of the event revealed that the licensee's procedures did not contain instructions for venting the high pressure coolant injection system under the conditions encountered on January 13. The failure to establish adequate procedures for venting the system as required by Technical Specification 5.4.1.a was considered a Non-Cited Violation (50-341/01-03-01) (Section 1R14). This issue was determined to be of very low safety significance because the HPCI injection system remained capable of performing its safety function.
Inspection Report# : 2001003*(pdf)*

Significance: Sep 29, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance work planners were not using the latest revision of a pre-job walk-down checklist
In two instances, the licensee quality assurance organization staff identified that maintenance work planners were not using the latest revision of a pre-job walk-down checklist. On February 7, 2000, it was documented that Revision 5 of the walk-down checklist from Maintenance Department Instruction (MDI) 012 was being used. Revision 6 to this checklist had been issued in November of 1999. The walk-down checklist was used on all jobs including safety-related work. On August 25, 2000, the quality assurance organization identified again that Revision 5 of MDI-012 was still in use. This demonstrated that the corrective actions taken for the first CARD were ineffective. This violation was assessed for risk using the Significance Determination Process. The issue was concluded as having very low safety significance because no equipment was directly affected.
Inspection Report# : 2000012*(pdf)*

Significance: Sep 29, 2000
Identified By: NRC

Item Type: NCV NonCited Violation
Inadequate storage conditions for replacement safety-related battery cells were identified with CARDs on two occasions
Inadequate storage conditions for replacement safety-related battery cells were identified with CARDs on two occasions. Condition Assessment Resolution Document 99-13152 was written on March 26, 1999 to document a condition of "Inadequate storage of the spare Q1 station batteries". These are replacement safety-related battery cells. On February 22, 2000, CARD 00-11754 was written questioning the adequacy of the Fermi-1 storage location, and shelf life of the Q1 batteries, based on storage requirements. As of September 27, 2000, no action had been taken to resolve the storage requirements. This issue was evaluated using the significance determination process as having very low safety significance because the batteries were not installed.
Inspection Report# : 2000012*(pdf)*

Significance: N/A Aug 25, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to follow procedure requirements for performing 10 CFR 50.59 evaluation
NO COLOR: The licensee failed to follow Fermi procedure requirements for preparing a 10 CFR 50.59 evaluation that resulted from a modification that replaced the original emergency equipment cooling water system (EECW) heat exchangers with new increased flowrate stainless steel heat exchangers. The evaluation failed to address all flowrate, pressure, and material changes made to the UFSAR and EECW system did not document consideration of impacts of these changes on the system as a whole, or the modification's impact on fulfilling each of the EECW's three safety functions. This is considered a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V. This violation was identified by the NRC and promptly entered by the licensee into the corrective action program as CARD 00-10249. The licensee had performed other evaluations in other documents and calculations that showed that an unreviewed safety question did not exist. Since this finding did not affect a cornerstone of safety, it was not assessed with the Significance Determination Process, and was not assigned a color (Section 1R02.1).
Inspection Report# : 2000009*(pdf)*

Significance: G Aug 25, 2000
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform required RHR pump "C" motor alignment checks as part of post-maintenance testing.
GREEN: The licensee failed to ensure that residual heat removal (RHR) pump "C" motor alignment checks, specified by engineering in the Engineering Design Package (EDP) following motor replacement, were accomplished. These motor alignment checks were required to demonstrate correct shaft alignment following shaft resurfacing. This is considered a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XI. This violation was identified by the NRC and promptly entered by the licensee into the corrective action program as CARDs 00-18091 and 00-18092. The deficiency had very low safety significance (green). There was an extremely low probability of a simultaneous occurrence of a Loss of Coolant Accident and failure of RHR pump"C". An operational vibration test was performed and provided reasonable assurance that RHR pump"C" would function if called upon (Section 1R17.1).
Inspection Report# : 2000009*(pdf)*

Significance: G May 19, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Unclear Tagging Nomenclature of STR 00-3348
On April 22, Division 1 shutdown cooling was inadvertently stopped for 48 minutes. The cause of this event was that the core spray system safety tagging record specifying which fuse was required to be removed was not clear. Consequently, the wrong fuse was pulled causing an inadvertent engineered safety feature actuation, the closure of the Division 1 and 2 shutdown cooling inboard isolation valve, and a trip of the Division 1 residual heat removal pump A. The interruption of the shutdown cooling flow was evaluated using the Significance Determination Process. The event was found to be of very low risk because reactor vessel water level was above the reactor vessel flange (635 inches) and the time to boil was greater than 2 hours. The failure to develop an adequate safety tagging record was considered to be a non-cited violation of Technical Specification 5.4.1 per the NRC Revised Enforcement Policy. (Section 1R13)
Inspection Report# : 2000003*(pdf)*

Significance: G May 19, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to Follow Note on STR 00-0501 and Fuses Pulled
On April 17, the Division 2 shutdown cooling system was inadvertently stopped for 21 minutes because an operator failed to recognize that only one of two power supplies provided power to logic trip unit B31N611B. One power supply was previously de-energized for planned modifications and the operator de-energized the second power supply. Safety Tagging Record 00-0501, required verifying two power sources to the trip unit. The failure to follow Safety Tagging Record 00-0501 was considered a non-cited violation of Technical Specification 5.4.1 per the NRC Enforcement Policy. The interruption of the shutdown cooling flow was evaluated using the Significance Determination Process. The event was found to be of very low risk because reactor vessel water level was above the reactor vessel flange (635 inches) and time to boil was greater than 2 hours. (Section 1R20)
Inspection Report# : 2000003*(pdf)*

Significance: G May 19, 2000
Identified By: Licensee

Item Type: NCV NonCited Violation
Failure to Add Correct Oil in EDG 11 Bearings
On March 3, 2000, while conducting 18-month Preventive Maintenance Task W836000100, maintenance personnel added the incorrect oil (oil with too low viscosity) to the inboard and outboard bearings for Emergency Diesel Generator (EDG) 11. Low oil viscosity may cause bearing spalling (metallic deterioration of the bearing race) during EDG operation. An analyses could not guarantee machine operation for the 7-day requirement as specified in Updated Final Safety Analysis Report Chapter 8.3, Document R30-00, "Emergency Diesel Generators." The past operability determination on Condition Assessment Resolution Document 00-15051 considered the EDG inoperable until April 12, when the correct oil was added to the bearings. The failure to add the correct oil in the inboard and outboard bearings for EDG 11 was considered a non-cited violation of Technical Specification 5.4.1 per the NRC Enforcement Policy. The inoperable diesel was evaluated using the Significance Determination Process for the dates between March 3, 2000, and April 1, 2000, when the plant was operating at 97 percent power. Also, the inoperable EDG was evaluated using the Significance Determination Process between April 2 and April 12, 2000, which was the period when the unit was shutdown until the bearing oil was changed. In both evaluations, the risk significance was considered very low because the remaining three EDGs (12, 13, and 14) were available. (Section 1R22)
Inspection Report# : 2000003*(pdf)*

Significance: G May 19, 2000
Identified By: Licensee
Item Type: NCV NonCited Violation
Failure to Provide Adequate Maintenance Instructions for Setting Containment Isolation Valve Limit Switches
Drywell purge valve T4803F601 leaked excessively during local leak rate testing on September 22, 1999. Enforcement discretion was granted to allow non-compliance with Technical Specification 3.6.8.1. A follow-up investigation performed during the April 2000 refueling outage determined that the valve limit switches were not set properly in a previous outage. As a result, the valve tended to travel past the seat and pull the o-ring off the seat during repetitive valve stroking. The issue was considered to have very low risk significance because outboard valves T4800F407 and T4800F408 did not leak during the local leak rate testing conducted on September 22, 1999. However, the failure to provide adequate documentation to reassemble valve T4803F601 was considered a non-cited violation of Technical Specification 5.4.1 per the NRC Enforcement Policy. (Section 1R22)
Inspection Report# : 2000003*(pdf)*

Barrier Integrity

Significance: G Nov 16, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Actions for Failed Feedwater Checkvalve Cotter Pins
The inspectors identified a Non-Cited Violation of 10 CFR Part 50 Appendix B, Criterion XVI "Corrective Actions" for inadequate licensee corrective actions, that failed to prevent a repeat failure of feedwater check valve cotter pins. This finding was greater than minor because, if left uncorrected, it could have resulted in feedwater check valve failures, which would degrade the containment barrier and potentially result in a loss of feedwater. Therefore, this finding affected the barrier integrity and initiating events cornerstones. However, based on evaluating the risk significance of the loss of feedwater transient and the loss of containment barrier integrity from a postulated valve disc separation, and considering that no actual disc failure occurred, the finding has very low significance.
Inspection Report# : 2001014*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Oct 05, 2001
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team identified several examples of poor implementation of the corrective action program, but concluded that in general the licensee effectively identified, evaluated, and corrected plant problems. Problem identification was effective in using a low threshold for initiating Condition Assessment Record Documents. Licensee audits and assessments identified issues similar to NRC observations. Corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Plant staff willingness to identify issues and a low threshold for initiating condition reports supported a safety conscious work environment.
Inspection Report# : 2001016*(pdf)*

Significance: N/A Oct 05, 2001
Identified By: NRC
Item Type: NCV NonCited Violation
Performance deficiencies in the implementation of the corrective action program
A cross-cutting issue in the area of Problem Identification and Resolution was identified with several examples showing performance deficiencies in the implementation of the corrective action program in one or more phases for an issue. For example, repeated failure of the reactor building closed cooling water system temperature control valve resulted from incomplete identification and documentation of a problem and closure of a Condition Assessment Record Document without corrective action. In other examples, a temperature switch was returned to service with undocumented deficiencies and corrective action was not timely for a UFSAR commitment which was identified as not met from 1998 until this inspection. Finally, the poor prioritization and evaluation of corrective actions for 600 uninspected fire seal penetrations resulted in untimely and incomplete corrective actions. This example is being treated as a Non-Cited Violation. The finding was more than minor because the examples showed occasional failures of the corrective action program to achieve prompt and thorough resolution of issues affecting plant equipment. Further, the finding was cross-cutting because the several examples were an indication of adverse performance.
Inspection Report# : 2001016*(pdf)*

Significance: N/A Sep 29, 2000
Identified By: NRC
Item Type: FIN Finding
The corrective action program was functional; however, some meaningful issues had been identified at Fermi where the corrective actions were not vigorously implemented
The inspectors concluded that the corrective action program was functional and typically identified and corrected conditions adverse to quality. The inspectors found that station personnel effectively identified and entered problems on Condition Assessment Resolution Documents (CARDs) into the corrective action program. The CARDs were used for problem identification and were tracked through problem evaluation and corrective action completion. The inspectors were concerned however, that some meaningful issues had been identified at Fermi where the corrective actions were not vigorously implemented to address the issues. This was evident in the CARDS identifying repeat issues and inspection findings over the past year. The issues identified however, had very low risk significance.
Inspection Report# : 2000012*(pdf)*

Significance: N/A May 19, 2000
Identified By: NRC
Item Type: FIN Finding
Errors in Developing and Implementing Safety Tagging Records
NO COLOR. The inspectors identified that errors in developing and implementing safety tagging records caused two occurrences of an intermittent loss in shutdown cooling flow (Sections 1R13 and 1R20). Errors also led to the addition of the incorrect oil to emergency diesel generator bearings (Section 1R22). While the risk of the individual events was determined to be very low (GREEN), human performance errors during operations and maintenance activities were evident. (Section 40A4)
Inspection Report# : 2000003*(pdf)*

Last modified : March 01, 2002