

January 3, 2003

Mr. William O'Connor, Jr.  
Vice President  
Nuclear Generation  
Detroit Edison Company  
6400 North Dixie Highway  
Newport, MI 48166

SUBJECT: FERMI POWER PLANT  
NRC INSPECTION REPORT 50-341/02-08(DRS)

Dear Mr. O'Connor:

On December 6, 2002, the NRC completed an inspection at your Fermi Power Plant. The enclosed report documents the inspection findings which were discussed on December 6, 2002, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection focused on the triennial fire protection baseline inspection.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). The issues were determined to involve violations of NRC requirements. However, because of the very low safety significance and because the issues have been entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest the violations or significance of the Non-Cited Violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Fermi 2 Nuclear Power Plant.

In accordance with 10 CFR Part 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA by Roger Lanksbury Acting For/***

Ronald N. Gardner, Chief  
Electrical Engineering Branch  
Division of Reactor Safety

Docket Nos. 50-341  
License Nos. DPR-43

Enclosure: NRC Inspection Report 50-341/02-08(DRS)

cc w/encl: N. Peterson, Director, Nuclear Licensing  
P. Marquardt, Corporate Legal Department  
Compliance Supervisor  
R. Whale, Michigan Public Service Commission  
Michigan Department of Environmental Quality  
Monroe County, Emergency Management Division  
Emergency Management Division  
MI Department of State Police

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-341

License No: DPR-43

Report No: 50-341/02-08

Licensee: Detroit Edison Company

Facility: Enrico Fermi, Unit 2

Location: 6400 N. Dixie Hwy.  
Newport, MI 48166

Dates: November 19 through December 6, 2002

Inspectors: Doris Chyu, Reactor Inspector  
Robert C. Daley, Reactor Inspector  
Ronald A. Langstaff, Senior Reactor Inspector

Accompanying Personnel: Richard Echoles, Nuclear Safety Intern  
Hipolito J. Gonzalez, Nuclear Safety Intern  
Shaun R. Pergande, Nuclear Safety Intern

Approved by: Ronald N. Gardner, Chief  
Electrical Engineering Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000341-02-08(DRS); Detroit Edison Company; on 11/19-12/6/02, Fermi Power Plant; Unit 2. Fire Protection Triennial.

The inspection was conducted by a team of three Region III specialist inspectors. The inspection identified two Green Non-Cited Violations (NCVs). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. Inspector Identified Findings

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified that the licensee failed to have adequate procedures in effect for alternative shutdown in accordance with their license conditions. Specifically, performance of necessary actions to conduct an alternative shutdown would have required operators to perform steps contrary to the emergency operating procedures. The failure to have adequate procedures in effect for alternative shutdown is a violation of a license condition.

This issue was greater than minor because the conflict between procedures could result in operator delay and confusion for performance of necessary alternative shutdown steps. The finding was determined to be of very low safety significance, i.e., Green, because the finding did not affect a fire protection feature and interviews with operators indicated that they would take the necessary actions. Because the finding was of very low safety significance, and the finding was captured in the licensee's corrective action system, this finding is being treated as a NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R05.5.b.1).

- Green. The inspectors identified that the licensee failed to promptly correct identified deficiencies in the alternative shutdown procedure which specified safe shutdown actions to be taken in the event of a fire in an affected fire area. Specifically, the alternative shutdown procedure which specified operator actions in the event of a fire in fire area 11ABE relied upon operator actions to be taken in the same area. As such, operators may not have been able to perform the directed actions due to exposure to the fire, the actions may not have been effective due to fire damage, and the carbon dioxide fire suppression system for the area could have been adversely affected. The failure to take prompt corrective actions is a violation of a license condition.

The issue was greater than minor because specified actions may not have been effectively accomplished and a fire protection feature was affected. The finding was determined to be of very low safety significance, i.e., Green, because there were no identified fire damage scenarios which would require alternative shutdown. Because the finding was of very low safety significance, and the finding was captured in the licensee's corrective action system, this finding is being treated as a NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 4OA2.b.1).

## REPORT DETAILS

### Summary of Plant Status

Unit 2 was operated at or near full power throughout the inspection period.

#### 1. REACTOR SAFETY

##### **Cornerstones: Initiating Events and Mitigating Systems**

#### 1R05 Fire Protection (71111.05)

The purpose of this inspection was to review the Fermi fire protection program for selected risk-significant fire areas. Emphasis was placed on verifying that the post-fire safe shutdown capability and the fire protection features were maintained free of fire damage to ensure that at least one post-fire safe shutdown success path was available. The inspection was performed in accordance with the Nuclear Regulatory Commission's (NRC's) new regulatory oversight process using a risk-informed approach for selecting the fire areas and attributes to be inspected. The inspectors used the Fermi 2 Individual Plant Examination (External Events) (IPEEE) to choose several risk-significant areas for detailed inspection and review. The fire areas chosen for review during this inspection were:

01AB, Auxiliary Building Basement  
02AB, Auxiliary Building Mezzanine/Cable Tray Area  
11ABE, 3rd Floor DC/MCC [Direct Current/Motor Control Center] Area

For each of these fire zones, the inspection was focused on the fire protection features, the systems and equipment necessary to achieve and maintain safe shutdown conditions, determination of license commitments, and changes to the fire protection plan.

#### .1 Systems Required to Achieve and Maintain Post-Fire Safe Shutdown

The guidelines established by Branch Technical Position (BTP), Chemical Engineering Branch (CMEB) 9.5-1, Section C.5.b, "Safe Shutdown Capability," Paragraph (1), required the licensee to provide fire protection features that were capable of limiting fire damage to structures, systems, and components (SSCs) important to safe shutdown. The SSCs that were necessary to achieve and maintain post-fire safe shutdown were required to be protected by fire protection features that were capable of limiting fire damage to the SSCs so that:

- One train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage; and
- Systems necessary to achieve and maintain cold shutdown from either the control room or emergency control station(s) can be repaired within 72 hours.

## General Description of Fermi 2's Safe Shutdown Paths and Capability

The licensee's safe shutdown methodology relied upon the identification of those components necessary and available to achieve and maintain hot shutdown conditions following a fire condition. Once identified for all plant areas, the licensee selected the components necessary to achieve and maintain the reactor in a hot shutdown condition which could be operated from the main control room or which could be operated locally and were not within the fire affected area. The methodology further identified those components necessary to achieve and maintain cold shutdown assuming limited repairs.

The licensee also identified an alternate or dedicated shutdown capability for fire conditions that affected the main control room and other areas requiring alternative or dedicated shutdown capability. For each of these areas, the licensee relied upon the operators' use of the dedicated shutdown panels and local operator actions to ensure that the reactor could be brought to and maintained in a hot shutdown status.

### a. Inspection Scope

The inspectors reviewed the plant systems required to achieve and maintain post-fire safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions for each fire zone selected for review. Specifically, the review was performed to determine the adequacy of the systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and support system functions. This review included the fire protection safe shutdown analysis.

The inspectors also reviewed the operators' ability to perform the necessary manual actions for achieving safe shutdown, including a review of procedures, accessibility of safe shutdown equipment, and the available time for performing the actions.

The inspectors reviewed the final safety analysis report (FSAR), as updated, and the licensee's engineering and/or licensing justifications (e.g., NRC guidance documents, license amendments, technical specifications, safety evaluation reports, exemptions, and deviations) to determine the licensing basis.

### b. Findings

No findings of significance were identified.

## .2 Fire Protection of Safe Shutdown Capability

The guidelines established by BTP CMEB 9.5-1, Section C.5.b, "Safe Shutdown Capability," Paragraphs (2)(a) and (3), required separation of cables and equipment and associated circuits of redundant trains by a fire barrier having a 3-hour rating. If the guidelines cannot be met, then alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration should be provided.

a. Inspection Scope

For each of the selected fire areas, the inspectors reviewed the licensee's safe shutdown analysis to ensure that at least one post-fire safe shutdown success path was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions and make the necessary repairs to reach cold shutdown within 72 hours. The inspectors also reviewed procedures to verify that adequate direction was provided to operators to perform these manual actions. Factors, such as timing, access to the equipment, and the availability of procedures, were considered in the review.

The inspectors also evaluated the adequacy of fire suppression and detection systems, fire area barriers, penetration seals, and fire doors to ensure that at least one train of safe shutdown equipment was free of fire damage. To do this, the inspectors observed the material condition and configuration of the installed fire detection and suppression systems, fire barriers, and construction details and supporting fire tests for the installed fire barriers. In addition, the inspectors reviewed license documentation, such as deviations, detector placement drawings, fire hose station drawings, carbon dioxide pre-operational test reports, smoke removal plans, fire hazard analysis (FHA) reports, safe shutdown analysis, and National Fire Protection Association (NFPA) codes to verify that the fire barrier installations met license commitments.

b. Findings

No findings of significance were identified.

.3 Post-fire Safe Shutdown Circuit Analysis

The guidelines established by BTP CMEB 9.5-1, Section C.5.b, "Safe Shutdown Capability," Paragraph (1), required that SSCs important to safe shutdown be provided with fire protection features capable of limiting fire damage to ensure that one train of systems necessary to achieve and maintain hot shutdown conditions remained free of fire damage. Options for providing this level of fire protection were delineated in BTP CMEB 9.5-1, Section C.5.b, "Safe Shutdown Capability," Paragraph (2). Where the protection of systems whose function was required for hot shutdown did not satisfy BTP CMEB 9.5-1, Section C.5.b, Paragraph (2), an alternative or dedicated shutdown capability and its associated circuits, was required to be provided that was independent of the cables, systems, and components in the area. For such areas, BTP CMEB 9.5-1, Section C.5.c, "Alternative or Dedicated Shutdown Capability," Paragraph (3), specifically required the alternative or dedicated shutdown capability to be physically and electrically independent of the specific fire areas and capable of accommodating post-fire conditions where offsite power was available and where offsite power was not available for 72 hours.

a. Inspection Scope

On a sample basis, the inspectors investigated the adequacy of separation provided for the power and control cabling of redundant trains of shutdown equipment. This investigation focused on the cabling of selected components in systems important for



safe shutdown. The inspectors' review also included a sampling of components whose inadvertent operation due to fire may adversely affect post-fire safe shutdown capability. The purpose of this review was to determine if a single exposure fire, in one of the fire areas selected for this inspection, could prevent the proper operation of both safe shutdown trains.

The team reviewed the licensee's fuse/breaker coordination analysis for the 4.16 kiloVolt and 480 Volt alternating current (AC) switchgear required for post-fire safe shutdown and the vital low-voltage AC and DC buses. The purpose of this review was to verify that selective coordination exists between branch circuit protective devices (fuses, breakers, relays, etc.) and the bus feeder breaker/fuse to ensure that in the event of a fire-induced short circuit, the fault is isolated before the feeder device trips. In addition, a review of the licensee's fuse replacement procedure was conducted to determine if adequate administrative controls existed to prevent the inadvertent substitution of incorrectly sized fuses in critical circuits.

b. Findings

No findings of significance were identified.

.4 Alternative Safe Shutdown Capability

The guidelines established by BTP CMEB 9.5-1, Section C.5.b, "Safe Shutdown Capability," Paragraph (1), required the licensee to provide fire protection features that were capable of limiting fire damage so that one train of systems necessary to achieve and maintain hot shutdown conditions remained free of fire damage. Specific design features for ensuring this capability were provided in BTP CMEB 9.5-1, Section C.5.b, Paragraph (2). Where compliance with the separation criteria of BTP CMEB 9.5-1, Section C.5.b, Paragraphs (1) and (2) could not be met, BTP CMEB 9.5-1, Section C.5.b, Paragraph (3) and Section C.5.c, required an alternative or dedicated shutdown capability be provided that was independent of the specific fire area under consideration. Additionally, alternative or dedicated shutdown capability must be able to achieve and maintain hot standby conditions and achieve cold shutdown conditions within 72 hours and maintain cold shutdown conditions thereafter. During the post-fire safe shutdown, the reactor coolant process variables must remain within those predicted for a loss of normal AC power, and the fission product boundary integrity must not be affected (i.e., no fuel clad damage, rupture of any primary coolant boundary, or rupture of the containment boundary).

a. Inspection Scope

The inspectors reviewed the licensee's systems required to achieve alternative safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions. The inspectors also focused on the adequacy of the systems to perform reactor pressure control, reactivity control, reactor coolant makeup, decay heat removal, process monitoring, and support system functions.

b. Findings

No findings of significance were identified.

.5 Operational Implementation of Alternative Shutdown Capability

The guidelines established by BTP CMEB 9.5-1, Section C.5.c, "Alternative or Dedicated Shutdown Capability," Paragraph (2)(d), required that the process monitoring function should be capable of providing direct readings of the process variables needed to perform and control the functions necessary to achieve reactivity control, reactor coolant makeup, and decay heat removal.

a. Inspection Scope

The inspectors performed a walkdown of a sample of the actions defined in Procedure 20.000.18, "Control of the Plant from the Dedicated Shutdown Panel," which was the procedure for performing a plant alternative shutdown from outside the control room. The inspectors conducted the walkdown to verify that operators could reasonably be expected to perform the procedure actions within the identified applicable plant shutdown time requirements and that equipment labeling was consistent with the procedure.

The inspectors' reviews of the adequacy of communications and emergency lighting associated with these procedures are documented in Sections 1R05.6 and 1R05.7 of this report.

b. Findings

b.1 Failure to Have Adequate Procedures in Effect for Alternative Shutdown

The inspectors identified that the licensee failed to have adequate procedures in effect for alternative shutdown in accordance with their license conditions. This issue was considered to be of very low safety significance and was dispositioned as a Green Non-Cited Violation (NCV).

Based on interviews with licensed operators and review of operating procedures, the inspectors determined that operators could potentially be using Emergency Operating Procedure (EOP) 29.100.01, Sheet 2, "Primary Containment Control," and Abnormal Operating Procedure (AOP) 20.000.18 simultaneously. In addition, licensed operators informed the inspectors that EOP 29.100.01 took precedence over AOP 20.000.18. Step DWT-5 of EOP 29.100.01, Sheet 2, directed operators to isolate emergency equipment cooling water (EECW) to and from the drywell. Step W of AOP 20.000.18 directed operators to unisolate EECW to the drywell. Although the actions of AOP 20.000.18 were necessary and correct, they were in conflict with those of EOP 29.100.01. Consequently, operator confusion and delay could occur in performance of those actions. During interviews with licensed operators, the licensed operators indicated that they would unisolate EECW to the drywell as required by AOP 20.000.18. However, the inspectors determined that by doing so, operators would be performing steps contrary to EOP 29.100.01, a procedure required by Technical Specification 5.4.1.b. Performing actions contrary to EOP 29.100.01 would be in

violation of Technical Specification 5.4.1, which required, in part, that written procedures for EOPs be implemented. As such, the licensee would be in the position of operating under 10 CFR 50.54(x), which allows reasonable actions to be taken that depart from a technical specification in an emergency when the action is necessary to protect the health and safety of the public and no action consistent with license conditions and technical specifications which can provide adequate or equivalent protection is immediately apparent. The inspectors considered the necessity of operating under 10 CFR 50.54(x) to perform alternative shutdown actions to be equivalent to not having procedures in effect to implement alternative shutdown capability.

License condition 2.C(9) of the facility operating license stated, in part, that the licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in its Final Safety Analysis Report (FSAR) for the facility. Section 9A.3 of the FSAR for the facility, as updated, stated, in part, that an alternative shutdown system had been designed and installed to meet the technical requirements of 10 CFR Part 50, Appendix R, Sections III.G.3 and L. Appendix R of 10 CFR Part 50, Section III.L.3 stated, in part, that procedures shall be in effect to implement alternative and dedicated shutdown capability. Contrary to the above, procedures were not in effect for implementing alternative shutdown capability in that actions necessary to implement alternative shutdown capability were in conflict with EOP steps.

In accordance with Inspection Manual Chapter (IMC) 0612, the inspectors determined that the issue was more than minor because the finding was associated with the protection against external factors (i.e., fire) attribute of the mitigating systems reactor safety cornerstone and affected the mitigating systems objective. In accordance with IMC 0609, Appendix A, the inspectors performed a Significance Determination Process (SDP) Phase 1 screening and determined that the finding degraded the Fire Protection portion of the Mitigation Systems Cornerstone. As such, screening under IMC 0609, Appendix F, was required. Based on review of IMC 0609, Appendix F, the inspectors determined that the finding did not require a Phase 2 analysis because no fire protection feature was affected. In addition, although the procedure conflict could result in delay and confusion, the inspectors determined that operators would likely perform the correct actions based on interviews of licensed operators. As such, this finding was considered to be of very low safety significance (i.e., Green). The failure to have adequate procedures in effect for alternative shutdown was a violation of a Fermi 2 license condition (2.C(9)). This violation was associated with a finding that was characterized by the Significance Determination Process as having very low risk significance (i.e., Green) and was being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation was in the licensee's corrective action program as Condition Assessment Resolution Document (CARD) 02-19225 (NCV 50-341/02-08-01).

#### b.2 Actions Specified in Affected Fire Area

A finding relating to the licensee's failure to promptly correct a procedure which specified safe shutdown actions in an affected fire area was identified and is discussed in Section 4OA2.b.

.6 Communications

The guidelines established by BTP CMEB 9.5-1, Section C.5.g, "Lighting and Communication," Paragraph (4), required that a portable communications system be provided for use by the fire brigade and other operations personnel required to achieve safe plant shutdown. This system should not interfere with the communications capabilities of the plant security force. Fixed repeaters installed to permit use of portable radio communication units should be protected from exposure to fire damage.

a. Inspection Scope

The inspectors reviewed the adequacy of the communication system to support plant personnel in the performance of alternative safe shutdown functions and fire brigade duties.

b. Findings

No findings of significance were identified.

.7 Emergency Lighting

The guidelines established by BTP CMEB 9.5-1, Section C.5.g, "Lighting and Communication," Paragraph (1), required that fixed self-contained lighting consisting of fluorescent or sealed-beam units with individual 8-hour minimum battery power supplies should be provided in areas that must be manned for safe shutdown and for access and egress routes to and from all fire areas.

a. Inspection Scope

The inspectors performed a walkdown of a sample of the actions defined in plant procedures used to control local equipment operations. As part of the walkdowns, the inspectors verified that sufficient emergency lighting existed for access and egress to areas and for performing necessary equipment operations.

b. Findings

No findings of significance were identified.

.8 Cold Shutdown Repairs

The guidelines established by BTP CMEB 9.5-1, Section C.5.c, "Alternative or Dedicated Shutdown Capability," Paragraph (5), required that equipment and systems comprising the means to achieve and maintain cold shutdown conditions should not be damaged by fire; or the fire damage to such equipment and systems should be limited so that the systems can be made operable and cold shutdown achieved within 72 hours. Materials for such repairs shall be readily available onsite and procedures shall be in effect to implement such repairs.

a. Inspection Scope

The inspectors reviewed the licensee’s procedures to determine if any repairs were required to achieve cold shutdown.

b. Findings

No findings of significance were identified.

.9 Fire Barriers and Fire Zone/Room Penetration Seals

The guidelines established by BTP CMEB 9.5-1, Section C.5.a, “Building Design,” Paragraph (3), required that penetration seal designs be qualified by tests that are comparable to tests used to rate fire barriers.

a. Inspection Scope

The inspectors reviewed the test reports for 3-hour rated barriers installed in the plant and performed visual inspections of selected barriers to ensure that the barrier installations were consistent with tested configuration.

b. Findings

No findings of significance were identified.

.10 Fire Protection Systems, Features, and Equipment

The guidelines established by BTP CMEB 9.5-1 required that fire protection systems, features and equipment were designed in accordance with the following:

<b><u>Fire Protection Systems, Features and Equipment</u></b>	<b><u>BTP CMEB 9.5-1 Section</u></b>	<b><u>BTP CMEB 9.5-1 Title</u></b>
Fire Brigade Capabilities	C.3	Fire Brigade
Passive Fire Protection Features	C.5.a	Building Design
Fire Detection System	C.6.a	Fire Detection
Fire Suppression System	C.6.b	Fire Protection Water Supply Systems
	C.6.c	Water Sprinkler and Hose Standpipe Systems
Manual Fire Fighting Equipment	C.6.f and C.3	Portable Extinguishers and Fire Brigade

a. Inspection Scope

The inspectors reviewed the material condition, operations lineup, operational effectiveness, and design of fire detection systems, fire suppression systems, manual fire fighting equipment, fire brigade capability, and passive fire protection features. The inspectors reviewed deviations, detector placement drawings, fire hose station drawings, carbon dioxide pre-operational test reports, and FHA reports to ensure that selected fire detection systems, carbon dioxide systems, portable fire extinguishers, and hose stations were installed in accordance with their design, and that their design was adequate given the current equipment layout and plant configuration.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The inspectors conducted a review to verify that adequate compensatory measures were put in place by the licensee for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features. The inspectors also conducted reviews to verify that short term compensatory measures were adequate to compensate for a degraded function or feature until appropriate corrective actions were taken.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA2 Identification and Resolution of Problems

The guidelines established by BTP CMEB 9.5-1, Section C.4, "Quality Assurance [QA] Program," Paragraph h, required that measures be established to ensure that conditions adverse to fire protection, such as failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible material and nonconformances, are promptly identified, reported, and corrected.

a. Inspection Scope

The inspectors reviewed a selected sample of condition reports associated with Fermi 2's fire protection program to verify that the licensee had an appropriate threshold for identifying issues. The inspectors evaluated the effectiveness of the corrective actions for the identified issues.

b. Findings - Failure to Promptly Correct Procedure Which Specified Safe Shutdown Actions in Affected Fire Area

The inspectors identified that the licensee failed to promptly correct, as required by a Fermi 2 license condition, a procedure which specified safe shutdown actions in an affected fire area. This issue was considered to be of very low safety significance and was dispositioned as a Green NCV.

The licensee identified that their safe shutdown analyses inappropriately took credit for actions performed in fire area 11ABE. Specifically, AOP 20.000.18, the procedure for alternative shutdown, specified actions to be taken in event of a fire in fire area 11ABE. However, AOP 20.000.18 directed operators to take actions in fire area 11ABE (i.e., the an area potentially affected by fire.) The inspectors noted that 10 CFR Part 50, Appendix R, Section III.L.3, required, in part, that alternative shutdown capability be independent of the specific fire area. The license was committed to 10 CFR Part 50, Appendix R, Section III.L by license condition. The licensee documented this issue in their corrective action program on CARDS 00-15865 and 00-15866, dated June 16, 2000. The CARDS specifically identified that area 11ABE could potentially be filled with smoke, carbon dioxide (CO<sub>2</sub>), and heat. As such, operators might not be able to perform the actions specified by the procedure. The CARDS identified that spurious events could occur as a result of not being able to perform the actions specified by the procedure. As a compensatory measure, the licensee instituted hourly fire watches.

CARD 00-15865 was closed on February 26, 2001, although resolution of the analysis issues and compensatory measures remained open on CARD 00-15866. The actions of CARD 00-15866, which included actions to resolve associated analysis issues, were transferred to CARD 99-17222, a broader scope CARD related to NRC Information Notice 99-17, "Problems With Post-Fire Safe Shutdown Analysis, on December 13, 2001. Corrective actions were subsequently rolled into CARD 02-11747, initiated in May 2002.

During this inspection, the inspectors noted that the procedural steps and associated cautions for actions taken in fire area 11ABE were essentially the same as those in the June 2000 version of the procedure when the licensee had originally identified the issue. No substantive corrective actions had been taken to correct the procedure. The inspectors noted that self-contained breathing apparatus had been provided in nearby locations for the operators. However, even if an operator were able to perform the actions specified by the procedure, the inspectors noted that the actions may not be effective due to fire damage. In addition, fire area 11ABE was protected by a CO<sub>2</sub> system which required that a tight envelope be maintained for the required soak time in order for the CO<sub>2</sub> to be effective in extinguishing the fire. However, having an operator perform the procedure steps would have required the operator to breach the CO<sub>2</sub> envelope for the fire area thereby impacting the effectiveness of the CO<sub>2</sub> system.

As a result of the inspectors raising the above issues and the timeliness of the licensee's corrective actions, the licensee initiated CARD 02-19401 and revised AOP 20.000.18 during this inspection. The revised procedure was issued on November 27, 2002, and directed operators to perform actions outside of fire area 11ABE if the fire was in fire area 11ABE.

Section 2.C.9 of the Fermi 2 Facility Operating License stated, in part, that the licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in its Final Safety Analysis Report (FSAR) for the facility. Section 9A of the FSAR, as updated, outlined the licensee commitments for fire protection. Section 9A.5 of the FSAR, as updated, provided a point-by-point comparison with Appendix A to NRC Branch Technical Position APCS 9.5-1, dated August 23, 1976. Position c.8 listed in Section 9A.5 of the FSAR, as updated, identified the NRC position regarding quality assurance requirements for corrective action. The licensee response was that this item is included in the quality assurance program. Section 17 of the FSAR, as updated, is the quality assurance program for the licensee. Section 17.2.16 of the FSAR, as updated, established the quality assurance requirements for corrective action. Section 17.2.16 of the FSAR, as updated, stated, in part, that measures are established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected. Contrary to the above, the licensee failed to promptly correct AOP 20.000.18 which directed actions which potentially could not have been accomplished, potentially could have been ineffective, and could have adversely affected the operability of an installed fire suppression system. Although inadequacies associated with AOP 20.000.18 were originally identified on June 16, 2000, the inadequacies were not corrected as of November 26, 2002.

In accordance with Inspection Manual Chapter (IMC) 0612, the inspectors determined that the issue was more than minor because the finding was associated with the protection against external factors (i.e., fire) attribute of the mitigating systems reactor safety cornerstone and affected the mitigating systems objective. In accordance with IMC 0609, Appendix A, the inspectors performed a Significance Determination Process (SDP) Phase 1 screening and determined that the finding degraded the Fire Protection portion of the Mitigation Systems Cornerstone. As such, screening under IMC 0609, Appendix F, was required. Based on Figure 4-1 of IMC 0609, Appendix F, the finding was determined to affect fixed suppression capability. Under the screening criteria for Figure 4-3 of IMC 0609, Appendix F, the inspector determined that the fixed suppression system was affected. As such, a Phase 2 analysis was required. Although there was equipment in the fire area, the equipment present was of relatively low voltage and did not have openings in the top which could allow a fire to propagate to cables along the room ceiling. Additionally, the licensee's institution of fire watches ensured that there were no transient combustibles stored in the room. Consequently, the inspectors were not able to postulate a fire damage scenario for Phase 2. As such, this finding was determined to be of very low safety significance (i.e., Green). The failure to promptly correct the procedure for alternative shutdown was a violation of a Fermi 2 license condition (2.C(9)). This violation was associated with a finding that was characterized by the Significance Determination Process as having very low risk significance (i.e., Green) and was being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation was in the licensee's corrective action program (NCV 50-341/02-08-02).



#### 4OA6 Meetings

##### Exit Meeting

The inspectors presented the inspection results to Mr. W. O'Connor and other members of licensee management at the conclusion of the inspection on December 6, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

## KEY POINTS OF CONTACT

### Licensee

W. O'Connor, Vice-President, Nuclear Generation  
D. Cobb, Plant Manager  
K. Burke, Supervisor, Nuclear Performance Engineering  
R. Johnson, Supervisor, Nuclear Licensing  
R. Libra, Director, Nuclear Engineering  
J. Moyers, Manager, Nuclear Quality Assurance  
S. Peterman, Manager, Operations  
N. Peterson, Manager, Nuclear Licensing  
S. Stasek, Director, Nuclear Assessment  
J. Thorson, Acting Manager, Nuclear Performance Engineering

### NRC

R. Gardner, Chief, Electrical Engineering Branch, Region III  
J. Larizza, Resident Inspector

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

50-341/02-08-01	NCV	Failure to Have Adequate Procedures for Alternative Shutdown in Effect
50-341/02-08-02	NCV	Failure to Take Prompt Corrective Actions to Correct Identified Deficiencies in Alternative Shutdown Procedure

### Closed

50-341/02-08-01	NCV	Failure to Have Adequate Procedures for Alternative Shutdown in Effect
50-341/02-08-02	NCV	Failure to Take Prompt Corrective Actions to Correct Identified Deficiencies in Alternative Shutdown Procedure

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Documents Access and Management System
AOP	Abnormal Operating Procedure
BTP	Branch Technical Position
CARD	Condition Assessment Resolution Document
CFR	Code of Federal Regulations
CMEB	Chemical Engineering Branch
CO <sub>2</sub>	Carbon Dioxide
DC	Direct Current
DRS	Division of Reactor Safety
EECW	Emergency Equipment Cooling Water
EOP	Emergency Operating Procedure
FHA	Fire Hazard Analysis
FSAR	Final Safety Analysis Report
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
LLC	Limited Liability Company
MCC	Motor Control Center
NFPA	National Fire Protection Association
NRC	United States Nuclear Regulatory Commission
OA	Other Activities
PARS	Publicly Available Records
QA	Quality Assurance
SDP	Significance Determination Process
SSC	Structure, System, or Component

## LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document in this list does not imply NRC acceptance of the document, unless specifically stated in the inspection report.

### CARDs Reviewed

99-15137	Licensee response to NRC Notice 99-17; Problems associated with Post-Fire Safe-Shutdown Circuit Analysis	May 8, 2002
99-17222	Identified issue in which 20.000.18 does not isolate P5000F154 for all Dedicated Shutdown Fire Zones	October 27, 1999
00-15865	Procedural discrepancies that may prevent or negate actions required for 20.000.18	June 21, 2002
00-15866	Lack of analysis supporting stripping of DC supply to RHR Complex during implementation of 20.000.18	June 16, 2002
01-17245	NFPA 13 Sprinkler system discrepancies.	July 19, 2001
01-17246	Audit Finding: Wet sprinkler system pressure is high for several areas in the Reactor Bldg.	July 24, 2001
02-11059	Pendant Sprinkler installed without return bend as required by NFPA 13 in Aux Bldg 1st FI Mezzanine and cable tray area.	February 26, 2002
02-11747	Fire Protection Program Improvements.	August 14, 2002
02-12387	NFPA 13 requirements for spare sprinklers are not met.	July 10, 2002
02-12388	The FP Self Assessment NFPA 13 1980 Ed. Code compliance review has a concern that the hydraulic reference points on the fire protection system are not the same as those used in DC-5713.	July 6, 2002
02-12399	Some sprinklers have protection areas in excess of the limits specified by NFPA 13.	April 25, 2002
02-12403	Spacing of some branch lines end sprinklers is greater than what is allowed by NFPA 13.	April 25, 2002

02-12404	Inadequacies exist in sprinkler coverage for cable trays.	April 25, 2002
02-12412	Valve N2000F636 operator has been rotated 180° and is not operable from the floor	May 2, 2002
02-13702	Electric Fire Pump starts cause Fire System flange leakage.	April 16, 2002
02-19161	FP-AB-3-14f Fire Protection Pre-Plan Section 6.2 identifies fewer ventilation dampers closing than 28.502.07 or 28.501.02 when CO <sub>2</sub> system initiates	November 21, 2002
02-21263	Discrepancy between FP-AB-3-14f and 23.501.02 with regards to CO <sub>2</sub> soak time	November 26, 2002
02-21266	Determine if the fire detection installation in UFSAR fire zone 1AB, control air compressor room is required to conform to the NFPA 72E 1974 Ed. criteria for high ceiling	December 2, 2002

#### CARDs Initiated as a Result of this Inspection

02-19164	Evaluate effectiveness of fire detectors in 11AB	November 11, 2002
02-19224	Procedure 20.000.18 Enhancement	November 2, 2002
02-19225	EOP interaction with post fire shutdown using AOP 20.000.18	November 22, 2002
02-19401	Untimely corrective actions for Zone 11AB fire scenario	November 26, 2002
02-19497	Fire protection program with regards to UFSAR Chapter 17	December 4, 2002
02-21271	In various areas in Fire Zone 2AB, cable trays installed above the sprinklers	December 6, 2002
02-21272	The fire test information available for review for 3M M20A/CS195 fire barriers is insufficient	December 4, 2002

#### Engineering Evaluations

EVAL-DE0035-01	Evaluation of Fermi 2 Wet Pipe Sprinkler Systems for Compliance with the requirements of NFPA-13, Standard for the Installation of Sprinkler Systems	Revision 0
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EVAL-DE0035-01	Evaluation of Fermi 2 Wet Pipe Sprinkler Systems for Compliance with the Requirements of NFPA-13.	Revision 0
EVAL-DE0027-01	Evaluation of Fermi 2 Wet Pipe Sprinkler Systems for Compliance with the Requirements of NFPA-13.	Revision 0
	Fire Protection Self-Assessment	May 31, 2002
TSR-30217	Time to Void EECW in Drywell During Dedicated Shutdown	Revision 0
Drawings		
6E721-2808-12A	Cable Trays & Conduits Fire Protection Barriers	Revision D
6E721-2808-12C	Cable Trays & Conduits Fire Protection Barriers	Revision D
6E721-2808-19	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision A
6E721-2808-20	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision F
6E721-2808-21	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision E
6E721-2808-22	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision E
6E721-2808-23	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision E
6E721-2808-24	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision D
6E721-2808-25	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision E
6E721-2808-68	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision A
6E721-2808-69	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision 0
6E721-2808-70	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision 0
6E721-2808-71	Cable Trays & Conduits Fire Protection Barriers Installation Details	Revision A

6M721-2006	Condensate Storage and Transfer System Diagram	Revision BA
6M721-2035	High Pressure Coolant Injection System (HPCI) Reactor Bldg	Revision BC
6M721-2044	Diagram RCIC System	Revision AW
6M721-2045	Diagram RCIC System Barometric Condenser	Revision AJ
6M721-2083	Residual Heat Removal (RHR) Division II	Revision BD
6M721-2084	Residual Heat Removal (RHR) Division I	Revision BA
6M721-2135	Diagram Fire Protection System (Sheet 1)	Revision AS
6M721-2135	Diagram Fire Protection System (Sheet 2)	Revision O
6M721-2255	Ventilation Ductwork 3rd Floor Reactor Building	Revision W
6M721-2707	Flow Diagram Reactor & Auxiliary Building Ventilation System	Revision L
6M721-4526-1	Piping Isometric Fire Protection Sprinkler Feed System Reactor and Auxiliary Buildings	Revision L
6M721-4529	Typical Cable tray Fire Protection Details Auxiliary Building	Revision D
6M721-5068	Fire Protection Plan -Cable Trays -Area at Elevations 568'-6 & 603'-6".	Revision G
6M721-5069	Fire Protection Sections of Auxiliary Building Cable Tray Systems	Revision C
6M721-5072	Fire Protection Plan -Cable Tray Area at Elevations 551'-6" & 562'-6" Aux. Bldg.	Revision J
6M721-5083	Piping & Instrument Diagram - Standby Feedwater System	Revision R
6M721-5436	Emergency Cooling-Battery Charger Area Plan & Sections-Third Floor Auxiliary Building	Revision A
6M721-5506	Fire Protection Auxiliary Building Cable Tray Areas Sprinkler System at 603'-6"	Revision B
6C721-2304	Primary Containment Penetrations Drywell	Revision T
6I721-2201	RHR System Schematic Diagram Series of Drawings	Various Revisions
6I721-2205	RHR System GE Schematic Diagram Series of Drawings	

6I721-2225-04	Schematic Diagram - HPCI System Logic Circuit Part 2	
6I721-2225-13	Division I & II HPCI Torus Level Isol Vlvs V5-2550, V5-2551, V5-2552, & V5-2553	August 9, 1983
6I721-2235-03	RCIC System Logic Circuit Schematic Diagram Part 2	Revision Z
6I721-2317-28	Schematic Diagram - SBFW System Isolation Valve N2103F001	Revision F
6I721-2441-02	Schematic Diagram - EECW Sys EECW Return to RBCCW & RBCCW to EECW Stop Valves	Revision I
6I721-2441-09	Schematic Diagram - EECW System - EECW Drywell Supply Iso and EECW Drywell Return Iso Valves P4400F606A and P440F607A	Revision O
6I721-2671-11	Schematic Diagram - Torus Level Measurement System Isolation Valves	Revision J
6I721-2784-01	Dedicated Shutdown Panel	Revision 0
6I721-2785-01	Schematic Diagram - Dedicated Shutdown Panel H21P623 Transfer Relaying	Revision D
6I721-2868-09	Installation Fire Detection System Reactor Building Basement EL. 562'-0"	Revision F
6I721-2868-11	Installation Fire Detection System - Reactor Bldg. 1 <sup>st</sup> Fl. El. 583'-6" 1st Mezz. El. 603'-6" - Zone 6.	Revision G
6I721-2868-15	Installation Fire Detection System 3 <sup>rd</sup> Floor Reactor Building EL 643'-6" Zone 14	Revision K
6I721-2868-78	Installation Fire Detection System Outside The Division II Switchgear Room 3rd Floor Auxiliary Building EL. 643'-6" Zone 14	Revision F
6SD721-2530	One Line Diagram - Battery Distribution Series Drawings	Various Revs
Procedures		
20.000.18	Control of the plant from the Dedicated Shutdown Panel	Revision 23
20.000.18	Control of the plant from the Dedicated Shutdown Panel	Revision 24
20.000.18	Control of the plant from the Dedicated Shutdown Panel	Revision 27



20.000.18	Control of the plant from the Dedicated Shutdown Panel	Revision 31
20.000.18	Control of the plant from the Dedicated Shutdown Panel	Revision 32
20.000.22	Plant Fires	Revision 33
20.300.260VESF	Abnormal Operating Procedure - Loss of ESS 130/260 V Battery Busses	Revision 0
23.205	Attachment 2C; Non-Divisional RHR Electrical Lineup	Revision 0
23.324	System Operating Procedure - 120 kV Switchyard and CTG11 Generators	Revision 46
24.321.06	Dedicated shutdown Panel H21-P623 Operability Test EF-1 Supervisory Control	Revision 32
28.502.07	CO <sub>2</sub> Fire Suppression Functional Test Zone 14, Auxiliary Building, 3 <sup>rd</sup> Floor	Revision 8
28.504.03	Fire Suppression Water System Simulated Automatic Actuation Test.	Revision 15
28.504.04	Fire Suppression Water System Flow Test.	Revision 8
28.504.04	Fire Suppression Water System Flow Test.	Revision 12
28.508.04	Emergency Equipment Monthly Inventory/Inspection	Revision 22
29.100.02 sheet 1	RPV Control	Revision 9
29.100.02 sheet 1A	RPV Control - ATWS	Revision 7
29.100.02 sheet 2	Primary Containment Control	Revision 8
29.100.02 sheet 3	RPV Flooding Emergency Depressurization & Steam Cooling	Revision 6
29.100.02 sheet 3A	RPV Flooding & Emergency Depressurization - ATWA	Revision 8
29.100.02 sheet 4	Primary Containment H <sub>2</sub> /O <sub>2</sub> Control	Revision 8
29.100.02 sheet 5	Secondary Containment and Rad Release	Revision 7

29.100.02 sheet 6	Curves, Cautions and Tables	Revision 8
29.ESP.13	Emergency Support Procedure - Defeat of HPCI High Torus Water Level Suction Transfer and High Area Temperature Isolation	Revision 2
29.ESP.16	Emergency Support Procedure - Defeat of RCIC Low RPV Pressure and High Area Temperature Isolations	Revision 3
FP-AB-1-6a	Auxiliary Building Cable Tray Area, North, Zone 6	Revision 2
FP-AB-1-6b	Auxiliary Building Cable Entry Room, Zone 6, EL. 583'-6"	Revision 3
FP-AB-1-6c	Auxiliary Building Cable Tray Area, South, Zone 6, EL. 583'-6"	Revision 2
FP-AB-1-6d	Auxiliary Building 1st Floor Mezzanine, Zone 6, EL. 603'-6"	Revision 2
FP-AB-3-14f	Auxiliary Building, DC Motor Control Center (MCC) Room Zone 14, EL. 643'-6"	Revision 2
FP-AB-BMT-4	Control Air Compressor Room, Zone 4, EL. 551'-0"	Revision 2
3071-327	Installation Work for Fire Protection of Cable Trays, Conduits & Hangers	Revision G
MES36	Engineering Support Conduct Manual - Cable Pullcards	Revision 4
MGA03	General Administration Conduct Manual Chapter 3 - Procedure Use and Adherence	Revision 11
ST-OP-315-0065-001	Operations Training - EDG Load Shedding and Digital Load Sequencer	Revision 14
PRET.H4000.001	Procedure for Determining Proper Two-Way Radio Communications	Revision 0
SOE 96-12	Partial DCAT testing for EDP 28129 (pertaining to refurbishment of CTG 11-1)	Revision 0
Calculations		
Chemetron FL-37762	Low Pressure Carbon Dioxide Flow Calculation - Area Outside Switchgear Room EL. 643'-6"	March 8, 1982
DC-5713 Vol. I	Hydraulic Evaluation of the Fire Distribution Loop.	Revision C
DC-1021	DC Distribution Cabinet Loads	

DC-2912	DC Distribution Cabinet Loads (130 VDC)	
DC-2914	DC Distribution Cabinet Loads	September 18, 1990
DC-4921	Appendix R Calculations	Revision D
DC-5783	Appendix R Equipment and Cable Justifications	Revision A

#### Fire Test Related Documents

Letter from 3M	List of Test Reports and Associated Documents on M20-A Mat System	September 8, 1993
Installation Manual	Interam rigid Panel System M20-A Mat & CS-195 Composite Sheet 3 HR Fire Protection System	March 1, 1985
Installation Manual	Product Data Sheets/Catalog Cuts; Clarification Letter on Wrapping 5" Conduits	April 17, 1984
Installation Manual	Letter on CP-25 Caulk and Putty	December 10, 1985
Installation Manual	Clarification Letter on Wrapping Techniques	January 10, 1986
Installation Manual	Letter on Tensile Strength of C-34 Restraining Cord	May 30, 1986
SWRI # 01-8818-208/209b	Ampacity Test Report	September 29, 1986
3M Fire Test Report 82-22	Fire Barrier Wall	June 2, 1982
3M Fire Test Report 82-29	Fire Barrier Cable Tray	June 16, 1982
3M Fire Test Report 82-35	Fire Barrier Electrical Raceway Support	June 16, 1982
3M Fire Test Report 82-51	Fire Test for 1" Conduit	June 2, 1982
3M Fire Test Report 82-52	Fire Test for 4" Conduit	June 2, 1982
3M Fire Test Report OFT-1	Fire Barrier Composite Sheet Material	June 23, 1982
3M Fire Test Report 3000230701	Fire Test for 4" Conduit	October 12, 1982

3M Fire Test Report 82-65	Fire Test for Cable Bundle Drop-out	November 2, 1982
3M Fire Test Report 9380030601	Failure Point for Specific Detroit Edison Cable	January 13, 1984
3M Fire Test Report 84-10	Justification of 12" Rule	March 19, 1984
3M Fire Test Report 84-16	Junction Boxes	May 22, 1984
3M Fire Test Report 84-18	Junction Box on a Unistrut Frame	July 18, 1984
3M Fire Test Report 84-105	P1001 Unistrut	December 19, 1985
UL Fire Test Reports	Classification Coverage for Type M20-A Mat	September 27, 1983
UL Fire Test Reports	Electrical Circuit Protective Materials	October 19, 1983
UL Fire Test Reports	Type M20-A Intumescent Mat on a 24" Cable Tray	November 2, 1983
UL Fire Test Reports	Type M20-A Mat & CS-195 Sheet Protective System	January 19, 1984
UL Fire Test Reports	Fire Endurance Test of Conduit System	April 18, 1984
UL Fire Test Reports	Type M20-A Mat & CS-195 Sheet Protective System	August 7, 1984
UL Fire Test Reports	Review of Temperature Data	September 25, 1984
UL Fire Test Reports	Review of Temperature Data	October 2, 1984
File R10125-1, -2 Project 82NK21937	Report on Electrical Circuit Protective Materials	October 10, 1983
Safety Evaluation Report, NUREG-0798		
SSER 2	Safety Evaluation Report related to the operation of Fermi-2	January 1982

SSER 5	Safety Evaluation Report related to the operation of Fermi-2	March 1985
SSER 6	Safety Evaluation Report related to the operation of Fermi-2	
Letters		
NRC	Meeting Summary for September 8, 1986, Meeting on Alternative Shutdown Panel	January 8, 1987
Licensee to NRC	Alternative Shutdown System	January 3, 1986
Licensee to NRC	Alternative Shutdown System Procedures	November 27, 1985
Licensee to NRC	Request for Amendment to Technical Specifications for the Alternative Shutdown Program	September 27, 1985
Licensee to NRC	Additional Clarification on Fire Doors and Fire Detectors	June 18, 1985
Licensee to NRC	Detroit Edison Response Inspection Report 50-341/85009	June 10, 1985
Licensee to NRC	Comments on SSER 5	June 3, 1985
Licensee to NRC	Resolution of Certain Fire Protection Issues	March 4, 1985
Licensee to NRC	Additional Fire Protection Information	February 4, 1985
Licensee to NRC	Qualification of 3M Fire Wrap	October 22, 1984
Licensee to NRC	Design of Alternative shutdown Approach	October 22, 1984
Licensee to NRC	Implementation of Alternative Shutdown at Fermi 2	October 22, 1984
Licensee to NRC	Alternative Shutdown in the Control Center Complex	August 16, 1984
NRC	Summary of meeting on July 11, 1984, Regarding Fire Protection Measures for the Fermi-2 Facility	August 6, 1984
Licensee to NRC	Transmittal of Fire Protection Information	August 4, 1984
Licensee to NRC	Submittal of Deviation from Staff Interpretation of Fire Protection Features in 10 CFR 50, Appendix R and Justification	August 3, 1984
NRC	Summary of Meeting on June 5, 1984, Regarding the Compliance of the Fermi-2 Facility with Appendix R to 10 CFR Part 50	July 13, 1984

Licensee to NRC	Changes in Provisions in Plant Fire Protection	March 1, 1983
NRC	Summary of December 4, 1981 Meeting Regarding Operating License Review: Fire Protection	January 20, 1982
Licensee to NRC	Transmittal of the Updated Fire Hazards Analysis, FSAR Appendix 9B	July 31, 1981
Licensee to NRC	Fire Protection Review	June 29, 1981
Licensee to NRC	Response to Q. 021.32	June 29, 1981
Licensee to NRC	Fire Protection Commitments	June 18, 1981
NRC	Summary of May 27, 1981 OL Review Meeting Regarding the Fermi-2 Fire Protection Review	June 4, 1981
3M to Licensee	UL Test Report dated August 7, 1984	August 8, 1984
GE to Licensee	Updated UFSAR Figure 7.5-10 - Maximum Time Available for Operator Action	July 30, 1996
Safety Evaluations		
93-0038	Thermo-Lag Material Fire Barriers in the Auxiliary Building	Revision 2
93-0070	Modification to HPCI Return to CST Valve and Isolation of Air to This Valve During Alternative Shutdown Operation	Revision 1
96-0050	Installation of Fire Barriers on Division 1 Trays in Fire Zone AB1	Revision 0
97-0129	Penetration Seals on the Turbine Building West Wall at 603' Elevation	Revision 0
98-0076	Restrictions on operation of the drywell coolers subsequent to a LOCA and reasons for restrictions.	Revision 1
00-0045	Revise UFSAR to Correct Appendix R Safe Shutdown Component List and to Identify Location of Equipment Credited in the FHA	Revision 0
00-0049	Revise UFSAR to Show the Relocation of a Fire Break in Auxiliary Building Mezzanine and Cable Tray Area.	Revision 0

## References

Vendor Manual VMB11-2.0	Fire and Smoke Detection Systems	Revision D
NFPA 72E	Automatic Fire Detectors	1974
NFPA 13	Standard for the Installation of Sprinkler Systems.	1980
USFAR Chapter 17	Quality Assurance	Rev 11
Technical Requirement Manual, Section 3.3.9	Appendix R Alternative Shutdown Instrumentation	Revision 31
Spec. 3071-128- EZ-03	Design Instruction - Thermal Overload Heater Sizing	Revision B