UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
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May 13, 2011

Mr. Jack M. Davis
Senior Vice President and
Chief Nuclear Officer
Detroit Edison Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI POWER PLANT, UNIT 2, NRC TEMPORARY INSTRUCTION 2515/183 INSPECTION REPORT 05000341/2011011

Dear Mr. Davis:

On April 29, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Fermi Power Plant, Unit 2, using Temporary Instruction 2515/183, "Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event." The enclosed inspection report documents the inspection results which were discussed on April 29, 2011, with Mr. Plona and other members of your staff.

The objective of this inspection was to promptly assess the capabilities of Fermi Power Plant, Unit 2, to respond to extraordinary consequences similar to those that have recently occurred at the Japanese Fukushima Daiichi Nuclear Station. The results from this inspection, along with the results from this inspection performed at other operating commercial nuclear plants in the United States will be used to evaluate the U.S. nuclear industry's readiness to safely respond to similar events. These results will also help the NRC to determine if additional regulatory actions are warranted.

All of the potential issues and observations identified by this inspection are contained in this report. The NRC's Reactor Oversight Process will further evaluate any issues to determine if they are regulatory findings or violations. Any resulting findings or violations will be documented by the NRC in a separate report. You are not required to respond to this letter.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/
John B. Giessner, Chief
Branch 4
Division of Reactor Projects

Docket No. 50-341
License No. NPF-43

Enclosure: Inspection Report 05000341/2011011

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-341
License No:	NPF-43
Report No:	05000341/2011011
Licensee:	Detroit Edison Company
Facility:	Fermi Power Plant, Unit 2
Location:	Newport, MI
Dates:	March 23, 2011, through April 29, 2011
Inspectors:	R. Morris, Senior Resident Inspector R. Jones, Resident Inspector R. Langstaff, Reactor Engineer G. Hausman, Reactor Engineer D. Szwarc, Reactor Engineer N. Valos, Reactor Engineer
Approved by:	J. Giessner, Chief Branch 4 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000341/2011011, 03/23/2011 – 04/29/2011; Fermi Power Plant, Unit 2, Temporary Instruction 2515/183 - Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event

This report covers an announced Temporary Instruction inspection. The inspection was conducted by resident inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

INSPECTION SCOPE

The intent of the TI is to provide a broad overview of the industry's preparedness for events that may exceed the current design basis for a plant. The focus of the TI was on (1) assessing the licensee's capability to mitigate consequences from large fires or explosions on site, (2) assessing the licensee's capability to mitigate station blackout (SBO) conditions, (3) assessing the licensee's capability to mitigate internal and external flooding events accounted for by the station's design, and (4) assessing the thoroughness of the licensee's walk downs and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events possible for the site. If necessary, a more specific follow-up inspection will be performed at a later date.

INSPECTION RESULTS

All of the potential issues and observations identified by this inspection are contained in this report. The NRC's Reactor Oversight Process will further evaluate any issues to determine if they are regulatory findings or violations. Any resulting findings or violations will be documented by the NRC in a separate report.

03.01 Assess the licensee's capability to mitigate conditions that result from beyond design basis events, typically bounded by security threats, committed to as part of NRC Security Order Section B.5.b issued February 25, 2002, and severe accident management guidelines and as required by Title 10 of the Code of Federal Regulations (10 CFR) 50.54(hh). Use Inspection Procedure (IP) 71111.05T, "Fire Protection (Triennial)," Section 02.03 and 03.03 as a guideline. If IP 71111.05T was recently performed at the facility the inspector should review the inspection results and findings to identify any other potential areas of inspection. Particular emphasis should be placed on strategies related to the spent fuel pool. The inspection should include, but not be limited to, an assessment of any licensee actions to:

Licensee Action		**Describe what the licensee did to test or inspect equipment.**
a. Verify through test or inspection that equipment is available and functional. Active equipment shall be tested and passive equipment shall be walked down and inspected. It is not expected that permanently installed equipment that is tested under an existing regulatory testing program be retested. This review should be done for a reasonable sample of mitigating strategies/equipment.		Licensee actions included the identification of equipment (active and passive) utilized for implementation of B.5.b actions and any additional equipment used in Severe Accident Management Guidelines (SAMGs). The scope of the equipment was defined as that equipment specifically designated for B.5.b or SAMG mitigation (i.e., special hoses, fittings, diesel battery charger, etc.). Permanent plant equipment (i.e., in situ equipment) was not considered in the scope, since it is normally in service, subjected to planned maintenance, and/or checked on operator rounds. The licensee then walked down the extensive damage mitigation (EDM) procedures. The licensee identified two issues: Condition Assessment and Resolution Document (CARD) 11-23081 identified equipment discrepancies between the EDMs and inventory checklist per 28.508.07; and CARD 11-22830 identified discrepancies in that equipment tests had not been initiated. Because severe accident guidelines (SAG) equipment is normal plant equipment, the licensee validated the SAGs via a tabletop review. Likewise, the SAMGs were validated using a tabletop review.
		Describe inspector actions taken to confirm equipment readiness (e.g., observed a test, reviewed test results, discussed actions, reviewed records, etc.).
		The Fermi 2 fire protection triennial inspection (FPTI) was conducted during the period that TI 2515/183 inspections were being performed, and included evaluating the licensee's capabilities to respond to beyond design basis events. The results of the FPTI will be reported in inspection reports 05000341/2011-009 and 05000341/2011-012. The FPTI inspectors reviewed four mitigating strategies. This review ensured that the licensee continued to meet the requirements of their B.5.b-related license conditions and 10 CFR 50.54(hh)(2) by determining that procedures were being maintained and adequate, equipment was properly staged, maintained, and tested, and station personnel were knowledgeable and could implement the procedures. The inspectors reviewed license conditions and evaluated selected mitigating strategies to ensure they remain feasible in

		light of operator training, maintenance/testing of necessary equipment and any plant modifications.
		Discuss general results including corrective actions by licensee.
		Overall, the mitigating strategies reviewed were determined to be feasible. The following observations were made by the Fermi FPTI and the licensee has initiated corrective actions. The fire truck and associated fire hoses were not being stored as described in the licensee's submittals/commitment management program. The licensee issued corrective action document CARD 11-23154 to evaluate storage for the fire truck and hose. The inspectors identified that the wire for SRV local operation did not have an electrical connector for connecting the wire in the spool to the DC inverter connector. Although a field splice would be adequate, the licensee issued corrective action document CARD 11-22967 to find a plug that fits the inverter output plug and connect it to one end of the spool of wire. The inspectors noted that periodic checks of EDM equipment were never implemented per procedure 28.508.06. The inspectors also identified that there was no check of the in-line flow meter batteries. The licensee issued corrective action document CARD 11-23174 that stated that a check of the in-line flow meter batteries will be added to procedure 28.508.06, and a monthly check of equipment would be performed when weather conditions permit. The licensee's review identified: The annual inventory of equipment per site procedure 28.508.07, "Annual Inspection EDM Equipment," needed to be updated to reflect additional equipment that was added to the procedures. The licensee issued corrective action document CARD 11-23036 to add the additional equipment to the inventory procedure, and the equipment was added to the inventory procedure 28.508.07 in Revision 2, dated 04/13/11. When the annual inventory of equipment per site procedure 28.508.07, "Annual Inspection EDM Equipment," was performed on 08/13/2010, items were found to be missing. The inventory procedure 28.508.07 was changed from an annual frequency to a quarterly frequency in Revision 2, dated 04/13/11.

		Section 4.1 of procedure 29.EDM.15 was revised to supply safety relief valves with nitrogen. The nitrogen bottle, tubing, and appropriate fittings to connect a nitrogen regulator to this outside line were not available on the fire truck. The licensee issued corrective action documents CARD 11-23036 and CARD 11-23532 to procure and add the appropriate equipment to the fire truck.
Licensee Action		**Describe the licensee's actions to verify that procedures are in place and can be executed (e.g. walkdowns, demonstrations, tests, etc.)**
b. Verify through walkdowns or demonstration that procedures to implement the strategies associated with B.5.b and 10 CFR 50.54(hh) are in place and are executable. Licensees may choose not to connect or operate permanently installed equipment during this verification. This review should be done for a reasonable sample of mitigating strategies/equipment.		Licensee actions included the identification of those procedures utilized to mitigate the consequences of a B.5.b-related event and severe accidents. The licensee then compiled verification documentation for procedure validations. Licensee personnel were then dispatched to walk down all applicable procedures to verify the ability of the procedures to be executed.
		Describe inspector actions and the sample strategies reviewed. Assess whether procedures were in place and could be used as intended.
		The FPTI inspectors reviewed four mitigating strategies. This review ensured that the licensee continued to meet the requirements of their B.5.b-related license conditions and 10 CFR 50.54(hh)(2) by determining that procedures were being maintained and adequate, equipment was properly staged, maintained, and tested, and station personnel were knowledgeable and could implement the procedures. The inspectors reviewed license conditions and evaluated selected mitigating strategies to ensure they remain feasible in light of operator training, maintenance/testing of necessary equipment and any plant modifications. The offsite and onsite communications, notifications/emergency response organization (ERO) activation, initial operational response actions, and damage assessment activities are evaluated each time due to the mitigation strategies' scenario selected. The inspectors reviewed and walked down parts of the following procedures with plant staff: - 29.300.01, "Extreme Damage Mitigation" - 29.300.02, "Extreme Damage Mitigation Guideline" - 29.EDM.01, "SFP Makeup/Spray - Internal Strategy" - 29.EDM.03, "SFP Makeup - External Strategy"

		- 29.EDM.04, “SFP Spray - External Strategy” - 29.EDM.05, “Use of Alternate Water Sources for Core Cooling” - 29.EDM.14, “Fire Header Management” - 29.EDM.15, “SRV Local Operation”
		Discuss general results including corrective actions by licensee.
		Overall, for the mitigating strategies reviewed were determined to be feasible. The following observations were made by the Fermi FPTI and the licensee has initiated actions to address them. 1) The licensee issued corrective action documents CARD 11-22983 and CARD 11 23036 to evaluate incorporation of approximately 13 procedure enhancements. 2) The licensee issued corrective action document CARD 11-23036 to change step 7 of Section 4.4 to be similar to step 7 of Section 4.1 of 29.EDM.15. 3) The licensee issued corrective action document CARD 11-23529 to evaluate whether a rigging plan should be developed for a connection conversion flange which weighs over 500 pounds.
Licensee Action		**Describe the licensee’s actions and conclusions regarding training and qualifications of operators and support staff.**
c. Verify the training and qualifications of operators and the support staff needed to implement the procedures and work instructions are current for activities related to Security Order Section B.5.b and severe accident management guidelines as required by 10 CFR 50.54 (hh).		Licensee actions included the identification of training/qualification requirements for operators for the implementation of actions needed to mitigate a B.5.b-related event, and for the implementation of actions needed for the SAMGs. The licensee documented that operator training requirements were current, and identified those operators with qualification requirements that were not current. In addition, the licensee identified the training/qualification requirements for applicable ERO command and support staff for the implementation of actions needed to mitigate a B.5.b-related event, and for the implementation of actions needed for the SAMGs, and documented that ERO command and support staff training requirements were current. Where applicable, those ERO command and support staff with qualification requirements that were not current were identified.

		Describe inspector actions and the sample strategies reviewed to assess training and qualifications of operators and support staff.
		The FPTI inspectors reviewed the licensee's preparedness by reviewing one or more mitigating strategies. This review ensured that the licensee continued to meet the requirements of their B.5.b-related license conditions and 10 CFR 50.54(hh)(2) by determining that station personnel were knowledgeable and could implement the procedures. The inspectors reviewed the licensee's B.5.b related license conditions and evaluated selected mitigating strategies to ensure they remain feasible in light of operator training. The inspectors reviewed and walked down parts of the following procedures with plant staff: - 29.300.01, "Extreme Damage Mitigation" - 29.300.02, "Extreme Damage Mitigation Guideline" - 29.EDM.01, "SFP Makeup/Spray - Internal Strategy" - 29.EDM.03, "SFP Makeup - External Strategy" - 29.EDM.04, "SFP Spray - External Strategy" - 29.EDM.05, "Use of Alternate Water Sources for Core Cooling" - 29.EDM.14, "Fire Header Management" - 29.EDM.15, "SRV Local Operation"

		Discuss general results including corrective actions by licensee.
		The training requirements, qualifications, and associated records needed for operators for the implementation of SAMG and B.5.b event response procedures were reviewed by the licensee. Training was identified for licensed and non-licensed operators, fire brigade, local fire department personnel, and engineering personnel outside of ERO personnel, and verified that the training requirements were embedded within the position qualifications for each position. The licensee confirmed that all shift operators verify their qualifications prior to assuming a shift position. The training requirements, qualifications, and associated records needed for ERO command and support staff for the implementation of actions needed to mitigate a B.5.b event or implement the SAMG procedures were also reviewed. No gaps were noted by the licensee. There were no NRC identified issues related to training of the operators.
Licensee Action		**Describe the licensee's actions and conclusions regarding applicable agreements and contracts are in place.**
d. Verify that any applicable agreements and contracts are in place and are capable of meeting the conditions needed to mitigate the consequences of these events. This review should be done for a reasonable sample of mitigating strategies/equipment.		Licensee actions included the identification of all applicable contracts and agreements committed to be in place for the mitigation of a B.5.b-related event. The licensee verified that the contracts and agreements were current, and documented whether or not the contracts/agreements were capable of meeting the mitigation strategy.
		For a sample of mitigating strategies involving contracts or agreements with offsite entities, describe inspector actions to confirm agreements and contracts are in place and current (e.g., confirm that offsite fire assistance agreement is in place and current).
		The FPTI inspectors verified that a Letter of Agreement existed between the Frenchtown Fire Department and The Detroit Edison Company to help assure the availability of adequately trained and experienced emergency personnel in the event of an emergency situation at the Fermi 2 plant site. The Letter of Agreement is in place and is documented in RERP Plan, Appendix 1-6, "Radiological Emergency Response Preparedness Letter of Agreement," Revision 38.

		Discuss general results including corrective actions by licensee.
		A Letter of Agreement is in place to help assure the availability of adequately trained and experienced emergency personnel in the event of an emergency situation at the Fermi 2 plant site. This letter of agreement is capable of meeting the conditions needed to mitigate the consequences of a B.5.b event.
Licensee Action		**Document the corrective action report number and briefly summarize problems noted by the licensee that have significant potential to prevent the success of any existing mitigating strategy.**
e. Review any open corrective action documents to assess problems with mitigating strategy implementation identified by the licensee. Assess the impact of the problem on the mitigating capability and the remaining capability that is not impacted.		The following entries into the licensee's CAP were made in response to issues identified in Section 03.01: • CARD 11-21743; NQA Audit Recommendation: Update Inactive Telephone Numbers in SAM Program Section 3.6; • CARD 11-22425; Supplemental Fire Equipment Missing at the NTC; • CARD 11-22731; Extreme Damage Mitigation Pumper Truck has no Formal Procedure for Operation; • CARD 11-22777; EDM Truck; • CARD 11-22830; INPO L1 Event Report 11-1 Discrepancy: Need PST event for 28.508.08, EDM Fire Hose Hydrostatic Test and Inspection; • CARD 11-22856; EDM Walkdown Enhancements: Additional Locations for EDM Procedures; • CARD 11-22844; Missing Fire Protection Foam Care (INPO Event Report 11-1 Discrepancy); • CARD 11-22861; Enhancements to SAGs Identified during INPO Level 1 Event Report 11.1; • CARD 11-22869; Make Corrections to 29.EDM.09 for E4140F010 Location; • CARD 11-22883; EDM Truck Issues Discovered on 03/20/2011; • CARD 11-22884; EDM Fire Header Enhancements for Drafting; • CARD 11-22885; EDM Walkdown Procedure Enhancements; • CARD 11-22887; Suggested Enhancements to Close EDM Gap from IER 11-1; • CARD 11-22911; SAM Items Not on Site; • CARD 11-22941; Missing or Defective Equipment for Severe Accident Management Support; • CARD 11-22942; Missing or Damaged Equipment for Severe Accident Management;

		• CARD 11-22947; EDM/SAM Equipment Inventory Locations (INPO Event Report 11-1 Discrepancy) • CARD 11-22950; EDM Equipment Required Replacement; • CARD 11-22952; Equipment Gap Identified in SAM 3.6 and 29.EDM.14; • CARD 11-22965; Evaluate Severe Accident Guideline Training for Non-licensed Operators; • CARD 11-22967; 2011 TFPI: 29.EDM.15 Electrical Connector not found: (Improvement to SRV Local Operations; • CARD 11-22968; Enhancement for 29.EDM.08 (INPO Event Report 11-2 Discrepancy; • CARD 11-22983; 2011 TFPI-29.EDM.05 Update; • CARD 11-23058; 29.EDM.03 Enhancement for Wording on Spanner Wrenches; • CARD 11-23059; 29.EDM.05 Storage Box Location Correction; • CARD 11-23081; 28.508.07 Updates Required; • CARD 11-23084; EDM Equipment Labeling and Storage Box Upgrades Required; • CARD 11-23085; 29.EDM.08 Enhancement for Guidance on Obtaining N2 Cylinders; • CARD 11-23145; EDM Truck Vacuum Pump Failed During Test; • CARD 11-23154; 2011 TFPI: NRC Concern, EDM Truck Storage; and • CARD 11-23174; 2011 TFPI NRC Concern: Testing of EDM Equipment. The inspectors reviewed these CARDs for potential impact to the licensee's mitigation strategies that was not highlighted in sections 03.01 a though d above. The major impacts were summarized in sections 03.01 a though d above. The additional impacts identified in the review for this section were procedural enhancements. No new major impacts were noted.
03.02 Assess the licensee's capability to mitigate SBO conditions, as required by 10 CFR 50.63, "Loss of All Alternating Current Power," and station design, is functional and valid. Refer to TI 2515/120, "Inspection of Implementation of Station Blackout Rule Multi-Plant Action Item A-22" as a guideline. It is not intended that TI 2515/120 be completely reinspected. The inspection should include, but not be limited to, an assessment of any licensee actions to:		
Licensee Action		**Describe the licensee's actions to verify the adequacy of equipment needed to mitigate an SBO event.**
a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.		Licensee actions included the identification of equipment utilized/required for implementation of abnormal operating procedure (AOP) 20.300.SBO. The licensee then conducted walkdowns of AOP 20.300.SBO and any associated procedures to assure adequacy of needed equipment.

		Describe inspector actions to verify equipment is available and useable.
		The inspectors assessed the licensee's capability to mitigate SBO conditions by conducting a walkdown of AOP 20.300.SBO, "Loss of Offsite and Onsite Power," along with a licensed operator. The inspectors also reviewed the last surveillance results of Technical Requirements Manual (TRM) surveillance 3.7.7.3 for combustion turbine generator (CTG) 11 Unit 1, which has a diesel engine starter. Also the CTG 11-1 annual inspection was reviewed. Further, during the first quarter reactor oversight process (ROP) the inspectors observed surveillances on emergency diesel generators 13 and 14 using IP 71111.22.
		Discuss general results including corrective actions by licensee.
		While the licensee found all necessary equipment in place to execute AOP 20.300.SBO, an enhancement was identified to permanently stage nitrogen bottles on location as identified in CARD 11-22859.
Licensee Action		**Describe the licensee's actions to verify the capability to mitigate an SBO event.**
b. Demonstrate through walkdowns that procedures for response to an SBO are executable.		Licensee actions included the identification of procedures required for implementation of AOP 20.300.SBO. The licensee then conducted walkdowns of AOP 20.300.SBO and all associated procedures called out to ensure they were adequate, and capable of being performed.
		Describe inspector actions to assess whether procedures were in place and could be used as intended.
		The inspectors assessed the licensee's capability to mitigate SBO conditions by conducting a walkdown of AOP 20.300.SBO, Loss of Offsite and Onsite Power, along with a licensed operator. In addition, the inspectors reviewed the licensee's walkdown activities.
		Discuss general results including corrective actions by licensee.
		The licensee procedure utilized to respond to an SBO is within the site's AOPs, specifically 20.300.SBO. Actions to start CTG 11-1 and supply power to site essential buses are performed from the control room with permanently installed plant equipment. If CTG 11-1 does not start, it can be started locally. CTG 11-2, 3, and 4 can also be started by using the (permanently installed) temporary diesel. While the licensee found all procedures in place to execute AOP 20.300.SBO, CARDs 11-22859, 11-23080, and 11-23069 identified procedural enhancements to improve implementation. Also CARD 11-23093 identified minor labeling issues for auxiliary powered feeder breaker 52AR.
03.03 Assess the licensee's capability to mitigate internal and external flooding events required by station design. Refer to IP 71111.01, "Adverse Weather Protection," Section 02.04, "Evaluate Readiness to Cope with External Flooding" as a guideline. The		

inspection should include, but not be limited to, an assessment of any licensee actions to verify through walkdowns and inspections that all required materials and equipment are adequate and properly staged. These walkdowns and inspections shall include verification that accessible doors, barriers, and penetration seals are functional.	
Licensee Action	**Describe the licensee's actions to verify the capability to mitigate existing design basis flooding events.**
a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.	Licensee actions included the identification of equipment and penetration seals utilized/required for mitigation of internal and external flooding. The licensee then conducted walkdowns of this equipment to ensure it was adequate and properly staged. Doors, barriers, and penetration seals that were utilized for mitigation of flooding were identified and checked to see if they were routinely inspected to ensure functionality. Where routine inspections were not performed or could not be relied upon to ensure functionality, the licensee performed walkdowns and inspections to ensure that the components were functional.
	Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.
	The inspectors assessed the licensee's capabilities to mitigate flooding by conducting a review of the licensee's walkdown activities. The inspectors reviewed the last performance of TRM surveillance SR 3.7.4.1 of the shore barrier. The inspectors walked down the shore barrier. Further, the inspectors conducted independent walkdowns of selected external and internal flood mitigation equipment to contribute to the overall assessment of the licensee's flood mitigating capabilities. The inspectors also performed a walkdown of areas in the plant to check the water tight seals. During the walkdowns the inspectors found the door between the turbine building basement and the auxiliary building basement corridor 2 airlock room B-5 (T-room) was inaccessible without security. The inspectors questioned Fermi staff about periodic inspections for the door and verification of the procedural requirements for checking the seals. The licensee has replaced the seal in the last five years and concluded that the seal remains acceptable. CARD 11-24359 was written noting checks were not made of the door during surveillances and there was no indication that the door had been verified as part of the INPO IER 11-1 analysis. Licensee flood mitigation procedures were reviewed to verify usability. The inspectors' conclusions aligned with the results obtained by the licensee except for an area outside of the power block that is subject to flooding that would affect some instrumentation that would cause a transfer in suction for the high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) pumps to the safety-related source which is the torus. This was noted by the licensee in CARD 11-24296. These conditions will be reviewed as appropriate

		as part of the Reactor Oversight Program (ROP) Inspection Procedure 71111.06, "Flood Protection Measures."
		Discuss general results including corrective actions by licensee.
		The licensee's verification of flood mitigation capability consisted of walkdowns and verification that the systems, structures, and components (SSCs) were present, periodically tested, and in acceptable condition. All design features, were present and in good condition. Of the more than ninety features evaluated, the licensee found two watertight doors that were not latched. CARDs 11-23337 and 11-23338 were issued to correct this. Also CARD 11-23482 was issued to track the inspection of penetrations in the fuel pool cooling and cleanup pump and heat exchanger room, which is a locked, high radiation area. This will be inspected during the next scheduled entry, third quarter 2011. As noted, the licensee omitted the auxiliary building basement corridor 2 airlock room B-5 door from their evaluation and issued CARD 11-24359.
03.04 Assess the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events possible for the site. Assess the licensee's development of any new mitigating strategies for identified vulnerabilities (e.g., entered it in to the corrective action program and any immediate actions taken). As a minimum, the licensee should have performed walkdowns and inspections of important equipment (permanent and temporary) such as storage tanks, plant water intake structures, and fire and flood response equipment; and developed mitigating strategies to cope with the loss of that important function. Use IP 71111.21, "Component Design Basis Inspection," Appendix 3, "Component Walkdown Considerations," as a guideline to assess the thoroughness of the licensee's walkdowns and inspections.		
Licensee Action		**Describe the licensee's actions to assess the potential impact of seismic events on the availability of equipment used in fire and flooding mitigation strategies.**
a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.		Licensee actions included the identification of equipment utilized/required for mitigation of fire and flood events whose function might be affected by a seismic event. An engineering inspection plan was prepared by the licensee to guide the walkdowns and inspections of the equipment, both permanent and temporary. Licensee engineering personnel determined if the equipment was seismically qualified, or assessed whether it would be possible to evaluate the equipment as being seismically rugged. Seismic vulnerabilities, including storage locations, were identified, and CARDs were written to develop mitigating strategies for equipment that was vulnerable.

		Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.
		The inspectors conducted walkdowns of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during a seismic event. Licensee flood and fire mitigation procedures were reviewed to verify usability.
		Discuss general results including corrective actions by licensee. Briefly summarize any new mitigating strategies identified by the licensee as a result of their reviews.
		The results of the inspectors' reviews aligned with the licensee's conclusions that there were a number of seismic vulnerabilities that potentially need to be addressed. The licensee concluded: "Seismically qualified" is defined as the safety-related SSCs that have been formally qualified to function during and after a design basis earthquake, as applicable. However, the licensee's reviews for this issue determined many fire protection components were classified as Seismic Category II/I. These systems are not designed to site general design criteria for safety systems, but meet the licensee design commitments for the system. These systems are robust and it is expected they will not be significantly affected by an earthquake. Other non-seismically qualified fire protection components were qualitatively assessed and were also determined to be robust. However, some non-seismically qualified fire protection components were assessed to be vulnerable. CARD 11-23731 identified the vulnerability of the fire protection system to seismic damage. Loss of normal station fire protection water supply due to loss of the general service water pump house (GSWPH), intake structure, fire pumps, underground distribution header or isolation valves. There is a single fire department connection to supply water to the underground distribution header. The connection is attached to the GSWPH and relies on maintaining an intact or isolable underground distribution header. Fire hydrants and hose houses may not be available due to damage. Mitigation is provided by the station EDM procedures and EDM fire truck. However, this does not fully address the potential impact during a seismic event. The fire truck and firefighting equipment staged to respond to B.5.b events were not stored in seismically qualified buildings and structures. CARD 11-23733 identified the vulnerability of the carbon dioxide and halon fire suppression systems to a seismic event. These systems are Seismic Category II/I, and are robust.

		However, the active components required to actuate these systems have not been evaluated for their capability to function during or after an earthquake. Mitigation of this beyond design basis condition is being evaluated for this CARD. CARD 11-23735 identified the vulnerability of fire brigade equipment and portable fire-fighting equipment (e.g., foam carts) located in the balance of plant as not being seismically protected. This equipment may be damaged or inaccessible following an earthquake. Mitigation of this beyond design basis condition is being evaluated for this CARD. Vulnerabilities to flooding events whose function might be affected by a seismic event were evaluated separately. CARD 11-23782 identified vulnerability with flood control valve T4500F601 which is powered from balance of plant power, and would require manual operation to close in a seismic event.

Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. J. Plona and other members of licensee management at the conclusion of the inspection on April 29, 2011. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Plona, Site Vice-President
T. Conner, Plant Manager
J. Davis, Manager, Nuclear Training
J. Korte, Manager, Nuclear Security
C. Walker, Director. Organization Effectiveness
R. Salmon, Supervisor, Licensing

Nuclear Regulatory Commission

J. Giessner, Chief, Division of Reactor Projects Branch 4

LIST OF DOCUMENTS REVIEWED

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

03.01 Assess the licensee's capability to mitigate conditions that result from beyond design basis events

Number	Description or Title	Date or Revision
CARDs:		
CARD 10-26991	EDM Truck Damage and Equipment Replacement	08/11/2010
CARD 10-27076	2010 FPSA Concern – Concerns Identified for B.5.b Readiness during Fire Protection Self-Assessment	08/13/2010
CARD 11-21743	NQA Audit Recommendation: Update Inactive Telephone Numbers in SAM Program Section 3.6	03/07/2011
CARD 11-22188	Engineering Assurance Audit of CARD 10-27076 Finds CARD Closure Discrepancies That Need to be Addressed	02/27/2011
CARD 11-22425	Supplemental Fire Equipment Missing at the NTC	
CARD 11-22731	Extreme Damage Mitigation Pumper Truck has no Formal Procedure for Operation	03/15/2011
CARD 11-22777	EDM Truck	03/16/2011
CARD 11-22830	Need PST event for 28.508.08, EDM Fire Hose Hydrostatic Test and Inspection (INPO L1 Event Report 11-1 Discrepancy)	03/18//2011
CARD 11-22844	Missing Fire Protection Foam Cart (INPO Event Report 11-1 Discrepancy)	03/18/2011
CARD 11-22856	EDM Walkdown Enhancements: Additional Locations for EDM Procedures	03/18/2011
CARD 11-22861	Enhancements to SAGs Identified during INPO Level 1 Event Report 11.1	03/18/2011
CARD 11-22869	Make Corrections to 29.EDM.09 for the E4140F010 Location	03/19/2011
CARD 11-22883	EDM Truck Issues Discovered on 03/20/2011	03/21/2011
CARD 11-22884	EDM Fire Header Enhancements for Drafting	03/21/2011
CARD 11-22885	EDM Walkdown Procedure Enhancements	03/21/2011
CARD 11-22887	Suggested Enhancement to Close EDM Gap from IER 11-1	03/21/2011
CARD 11-22911	SAM Items Not on Site	03/21/2011
CARD 11-22941	Missing or Defective Equipment for Severe Accident Management Support	03/22/2011
CARD 11-22942	Missing or Damaged Equipment for Severe Accident Management	03/22/2011
CARD 11-22947	EDM/SAM Equipment Inventory Locations (INPO Event Report 11-1 Discrepancy)	03/23/2011
CARD 11-22950	EDM Equipment Required Replacement	03/23/2011
CARD 11-22952	Equipment Gap Identified in SAM 3.6 and 29.EDM.14	03/23/2011
CARD 11-22965	Evaluate Severe Accident Guideline (SAG) Training for Non-licensed Operators	03/23/2011
CARD 11-22966	Equipment Discrepancies between EDM's and Inventory Check List per 28.508.07 (INPO Event Report 11-1 Discrepancy)	03/23/2011
CARD 11-22967	2011 TFPI: 29.EDM.15 Electrical Connector not found: Improvement to SRV Local Operations	03/23/2011

CARD 11-22968	Enhancement for 29.EDM.08 (INPO Event Report 11-1 Discrepancy)	03/23/2011
CARD 11-22983	2011 TFPI- 29.EDM.05 Update	03/24/2011
CARD 11-23036	2011 TFPI NRC Identified Enhancements for EDM Procedures	03/24/2011
CARD 11-23058	29.EDM.03 Enhancement for Wording on Spanner Wrenches	03/25/2011
CARD 11-23059	29.EDM.05 Storage Box Location Correction	03/25/2011
CARD 11-23060	29.EDM.12 Enhancement for Guidance on Obtaining Gasoline	03/25/2011
CARD 11-23066	Procedure Enhancement for Normal GSW System Startup	03/25/2011
CARD 11-23074	Procedure Enhancement for Enclosure 19 of 23.427	03/25/2011
CARD 11-23081	28.508.07 Updates Required	03/25/2011
CARD 11-23084	EDM Equipment Labeling and Storage Box Upgrades Required	03/25/2011
CARD 11-23085	29.EDM.08 Enhancement for Guidance on Obtaining N2 Cylinders	03/25/2011
CARD 11-23105	TFPI Item: Suggested Enhancement for 29.EDM.05/10	03/27/2011
CARD 11-23145	EDM Truck Vacuum Pump Failed During Test	03/28/2011
CARD 11-23154	2011 TFPI: NRC Concern: EDM Truck Storage	03/28/2011
CARD 11-23174	2011 TFPI: NRC Concern: Testing of EDM Equipment	03/29/2011
CARD 11-23532	2011 TFPI: NRC Concern: Equipment Specified in 23.406 for Connection to T4901F011 Cannot Be Found	04/06/2011
CARD 11-23529	2011 TFPI: RFI-11-038 NRC Concern about No Rigging Plan for Heavy Flanges	04/06/2011
CARD 11-23626	Form MGA06001 Need Enhancement	04/08/2011
CARD 11-23643	Incorrect Phone Number on TB-3 Fire Brigade Doors	04/08/2011
CARD 11-23653	DFP Continuous Vent Line Not Installed per Drawing	04/08/2011
CARD 11-23683	PVC Piping Found in DC MCC Area	04/11/2011
CARD 11-23732	2011 TFPI: NRC Concern TFPI-11-056, T Room South Divisional S/D Strategy	04/12/2011
CARD 11-23819	Enhance Extreme Damage Mitigation (EDM) Training for Initial Operators	04/14/2011
CARD 11-23970	New SCBA Training and Fit Test Requirements	04/19/2011
CARD 11-24227	2011 TFPI: FRI 11-111 Staged RHR Conversion Flange Gasket Differs from Procedure	04/26/2011
Drawings:		
6M721-5715-3	Standby Feedwater System Functional Operating Sketch	N
6M721-5740	Primary Containment Pneumatic Supply Functional Operating Sketch	S
Procedures:		
28.508.06	Weekly Inspection EDM Equipment	0
28.508.07	Annual Inspection EDM Equipment	1
28.508.07	EDM Equipment Inspection	2
28.508.08	EDM Fire Hose Hydrostatic Test and Inspection	0
29.300.01	Extreme Damage Mitigation	4
29.300.02	Extreme Damage Mitigation Guideline	1
29.EDM.01	SFP Makeup/Spray – Internal Strategy	2
29.EDM.02	SFP Makeup – External Strategy	2
29.EDM.03	SFP Makeup – External Strategy	
29.EDM.04	SFP Spray – External Strategy	2
29.EDM.05	Use of Alternate Water Sources for Core Cooling	5
29.EDM.14	Fire Header Management	5
29.EDM.15	SRV Local Operation	2
RERP Plan, Appendix 1	Radiological Emergency Response Preparedness, Letter of Agreement	38
Surveillance		
28.508.07	Annual Inspection EDM Equipment	08/13/2010

03.02 Assess the licensee's capability to mitigate station blackout (SBO) conditions

Number	Description or Title	Date or Revision
CARDs:		
CARD 11-22859	Suggested Enhancements to AOP 20.300.SBO	03/18/2011
CARD 11-23069	Procedure Change 20.300.SBO	03/25/2011
CARD 11-23080	Suggested Enhancement from 20.300.SBO Walkdown	03/25/2011
CARD 11-23093	Label Request for 480V Auxiliary Power Feeder Breaker	03/26/2011
CARD 11-23244	Top Missing from SBO Auxiliary Transformer 10 Bus Bar Compartment	03/30/2011
Procedures:		
20.300.SBO	Loss of Offsite and Onsite Power	Revision 15
24.324.01	Combustion Turbine Generator 11 Unit 1, Monthly Operability Check	Revision 44
Work Orders:		
30301851	Perform 24.324.01 CTG-11-1 Monthly Operability and Meter CH Check (Sect 5.2)	03/18/2011
30522581	Annual Inspection of CTG 11-1	03/15/2011

03.03 Assess the licensee's capability to mitigate internal and external flooding events required by station design

Number	Description or Title	Date or Revision
CARDs:		
CARD 11-23249	DC-4948 Volume I, Rigor	03/20/2011
CARD 11-23337	IER Level 1 11-1 Walkdown Results:	04/01/2011
CARD 11-23338	IER Level 1 11-1 Walkdown Results: Door T1-32 Not Secured and Degraded	04/01/2011
CARD 11-23339	IER Level 1 11-1 Walkdown Results: Drain Trenchway Needs Cleaning	04/01/2011
CARD 11-23359	IER Level I 11-1 Walkdown Results: Watertight Door Not Properly Signed	04/01/2011
CARD 11-23360	IER Level 1 11-1 Walkdown Results: Penetrations P-023 and P-024 Do Not Appeared Sealed	04/12/2011
CARD 11-23362	IER Level 1 11-1 Walkdown Results: Floor Penetration Not Sealed or Curbed	04/01/2011
CARD 11-23372	IER Level 1 11-1 Walkdown Results: P-051 Do Not Appear Not Sealed	04/01/2011
CARD 11-23431	IER 11-1, Potential Vulnerability – Reactor Building Flood Response	04/04/2011
CARD 11-23449	IER 11-1, Potential Vulnerability – External Flooding Response	04/04/2011
CARD 11-23482	IER Level 1 11-1 Track Required Walkdown Not Completed Due to Hi Radiation	04/05/2011
CARD 11-23536	IER 11-1, Potential Vulnerability / Enhancement – Operator Training	04/06/2011
CARD 11-23731	IER 11-1 Rec 4a Beyond Design Basis Enhancement	04/12/2011
CARD 11-23733	IER 11-1 Rec 4a Beyond Design Basis Enhancement	04/12/2011
CARD 11-23735	IER 11-1 Rec 4 Beyond Design Basis Enhancement	04/12/2011
CARD 11-24296	NRC Questions on Flood Response	04/27/2011
CARD 11-24359	NRC Concern: Flood Door Testing of RB-1/RBD-01	04/29/2011
Procedure:		
43.000.001	Shore Barrier Surveillance	Revision 24
Work Order:		
29274122	Perform 43.000.001 Shore Barrier Surveillance	08/12/2010

03.04 Assess the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events

Number	Description or Title	Date or Revision
CARDs:		
CARD 11-23236	Clarification of UFSAR Intent	03/30/2011
CARD 11-23248	Floor Drain Partial Blockage	03/30/2011
CARD 11-23398	IER Level 1 11-1 Walkdown Results: Floor Drain Documentation	04/03/2011
CARD 11-23399	IER Level 1 11-1 Walkdown Results: Floor Drain Documentation Discrepancy	04/03/2011
CARD 11-23400	IER Level 1 11-1 Review Results: DC-5426 Volume I Discrepancies	04/03/2011
CARD 11-23435	SAM 3.6 Strategies Embedded in EDM Procedures	04/04/2011
CARD 11-23436	IER 11-1 Enhancement; Develop Design Basis Document	04/04/2011
CARD 11-23437	Investigation to See If There Should be a Sign on Removable Flood Control Wall	04/04/2011
CARD 11-23441	IER 11-1, Potential Vulnerability – Floor Drain Maintenance	04/04/2011
CARD 11-23445	IER 11-1, Potential Vulnerability – Air Tight Seals	04/04/2011
CARD 11-23454	IER 11-1, Potential Vulnerability – Confirmation of Sufficient Curbs and Seals	04/04/2011
CARD 11-23482	IER Level 1-11-1 Track Required Walkdown Not Completed Due to Hi Radiation	04/05/2011
CARD 11-23684	UFSAR Section 3.4.4.2 Discrepancy	04/11/2011
CARD 11-23731	IER 11-1 Rec 4a Beyond Design Basis Enhancement	04/12/2011
CARD 11-23733	IER 11-1 Rec 4a Beyond Design Basis Enhancement	04/12/2011
CARD 11-23735	IER 11-1 Rec 4a Beyond Design Basis Enhancement	04/12/2011
CARD 11-23782	INPO 11-1 Rec 4 Beyond Design Basis Enhancement	04/13/2011
CARD 11-24091	Configuration Control Issues	04/22/2011

LIST OF ACRONYMS USED

ADAMS	Agency-wide Documents Access and Management System
AOP	Abnormal Operating Procedures
CARD	Condition Assessment and Resolution Documents
CFR	Code of Federal Regulations
CTG	Combustion Turbine Generator
EDM	Extensive Damage Mitigation
ERO	Emergency Response Organization
FPTI	Fire Protection Triennial Inspection
GSWPH	General Service Water Pump House
HPCI	High Pressure Coolant Injection
IP	Inspection Procedure
NRC	United States Nuclear Regulatory Commission
PARS	Publicly Available Records
PST	Plant Surveillance Test
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
ROP	Reactor Oversight Process
RPV	Reactor Pressure Vessel
SAMG	Severe Accident Management Guidelines
SBO	Station Black Out
SFP	Spent Fuel Pool
SRV	Safety Relief Valve
SSC	Systems, Structures, and Components
TI	Temporary Instruction
TRM	Technical Requirements Manual

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Sincerely,

/RA/

John B. Giessner, Chief
Branch 4
Division of Reactor Projects

Docket No. 50-341
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Letter to J. Davis from J. Giessner dated May 13, 2011.

SUBJECT: FERMI POWER PLANT, UNIT 2, NRC TEMPORARY INSTRUCTION 2515/183 INSPECTION REPORT 05000341/2011011

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