



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
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November 6, 2019

Mr. Peter Dietrich, Senior VP
and Chief Nuclear Officer
DTE Energy Company
Fermi 2 – 260 TAC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI POWER PLANT, UNIT 2 – INTEGRATED INSPECTION REPORT
05000341/2019003

Dear Mr. Dietrich:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Fermi Power Plant, Unit 2. On October 16, 2019, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

Three findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance or severity of the violations documented in this inspection report, 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; and the NRC Resident Inspector at Fermi.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; and the NRC Resident Inspector at Fermi.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Eric R. Duncan, Chief
Branch 4
Division of Reactor Projects

Docket No. 05000341
License No. NPF-43

Enclosure:
As stated

cc: Distribution via LISTSERV®

Letter to Peter Dietrich from Eric Duncan dated November 6, 2019.

SUBJECT: FERMIL POWER PLANT, UNIT 2 – INTEGRATED INSPECTION REPORT
05000341/2019003

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Number: 05000341

License Number: NPF-43

Report Number: 05000341/2019003

Enterprise Identifier: I-2019-003-0058

Licensee: DTE Electric Company

Facility: Fermi Power Plant, Unit 2

Location: Newport, MI

Inspection Dates: July 01, 2019 to September 30, 2019

Inspectors: T. Briley, Senior Resident Inspector
G. Edwards, Health Physicist
J. Harvey, Resident Inspector
L. Kozak, Senior Reactor Analyst
R. Ng, Project Engineer
T. Taylor, Resident Inspector

Approved By: Eric R. Duncan, Chief
Branch 4
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee’s performance by conducting an integrated inspection at Fermi Power Plant, Unit 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Incorrect Datum Used to Assess Lake Levels			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000341/2019003-01 Open/Closed	None (NPP)	71111.01
<p>The inspectors identified a finding of very low safety significance (i.e., Green) and an associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion III, “Design Control,” when licensee personnel failed to have appropriate measures in place to assess the impact of projected Lake Erie water levels on the site. As a result, actual lake level, including any predicted maximum lake level during a flood watch or warning, was determined to be 1.3' [feet] higher during a flooding event than what was calculated.</p>			
Inadequate Response to an Out-of-Service Diesel Fire Pump			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000341/2019003-02 Open/Closed	[H.5] - Work Management	71111.18
<p>A self-revealed finding of very low safety significance (i.e., Green) and an associated Non-Cited Violation (NCV) of Fermi License Condition 2.C.(9) was identified when licensee personnel failed to take appropriate actions in response to an out-of-service diesel fire pump. Specifically, a temporary diesel fire pump (DFP) used to restore system functionality failed to function as designed and the risk plan that was developed could not be implemented as written.</p>			
Failure to Properly Pre-Plan Work in Accordance with the Work Control Conduct Manual			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green FIN 05000341/2019003-03 Open/Closed	[H.7] - Documentation	71153
<p>A self-revealed finding of very low safety significance (i.e., Green) was identified when the licensee failed to properly pre-plan maintenance activities on the Feedwater Distributed Control System in accordance with the Work Control Conduct Manual. This resulted in an unplanned loss of the gland seal exhauster trip safety function.</p>			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000341/2019-001-00	LER 2019-001-00 for Fermi Unit 2, Unplanned Loss of Safety Function of Gland Seal Exhauster Trip During Planned Maintenance Due to Inadequate Procedure.	71153	Closed

PLANT STATUS

Unit 2 operated at or near rated thermal power during the entire inspection period with the exception of power changes to perform planned rod pattern adjustments.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated the licensee's readiness to cope with external flooding under the following conditions:
 - High Lake Erie water level monthly averages

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Emergency Diesel Generator (EDG) 12 while Combustion Turbine Generator (CTG) 11-1 was out of service for planned maintenance during the week ending September 14, 2019
- (2) Electric Fire Pump while the Diesel Fire Pump and a Temporary Alternate Diesel Fire Pump were out of service for corrective maintenance during the week ending September 7, 2019
- (3) Division 1 Core Spray (CS) while Division 2 CS was out of service for planned maintenance during the week ending September 21, 2019
- (4) Division 2 Non-Interruptible Air System (NIAS) after planned maintenance during the week ending September 28, 2019

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the Emergency Equipment Cooling Water (EECW) system during the week ending September 28, 2019

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) General Service Water Pump House during the week ending August 31, 2019
- (2) Auxiliary Building Sub-Basement and NIAS Room during the week ending September 28, 2019
- (3) Auxiliary Building Fifth Floor, Division 1 and Division 2 Standby Gas Treatment Rooms during the week ending September 28, 2019
- (4) Reactor Building Basement and Sub-Basement, Northeast Corner Room during the week ending September 28, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Torus Room

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the Control Room during power ascension following a planned down power for Main Steam Isolation Valve (MSIV) testing and a rod pattern adjustment on September 8, 2019

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (2 Samples)

- (1) The inspectors observed and evaluated an as-found simulator assessment during the week ending August 31, 2019
- (2) The inspectors observed and evaluated an as-found simulator assessment during the week ending September 7, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Emergent maintenance on Mechanical Draft Cooling Tower Fan D during the week ending August 3, 2019
- (2) Planned High Pressure Coolant Injection (HPCI) surveillance testing during the week ending August 24, 2019
- (3) Planned CTG 11-1 maintenance, new CTG fuel oil storage tank installation, with an installed Alternate Diesel Fire Pump during the week ending September 14, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Operability and functionality of the Standby Liquid Control (SLC) system following identification of a potential non-conservative Technical Specification associated with minimum SLC tank level, as documented in Condition Assessment Resolution Document (CARD) 19-21369
- (2) Operability and functionality of the Suppression Chamber (Torus) structure following a missed Technical Requirements Manual (TRM) surveillance requirement to perform an exterior visual inspection, as documented in CARD 19-25694
- (3) Functionality of the Diesel Fire Pump following identification of wear on the right angle drive anti-rotational clutch, as documented in CARD 19-26111
- (4) Operability and functionality of the Reactor Core Isolation Cooling (RCIC) system following identification of an abnormal RCIC flow controller reading while the system was in a standby condition, as documented in CARDS 19-26174 and 19-26198
- (5) Operability and functionality of the Division 2 Reactor Protection System (RPS), Average Power Range Monitor (APRM), and Oscillation Power Range Monitor (OPRM) systems following abnormal light indications during a planned logic module functional test, as documented in CARD 19-26362

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Installation of an Alternate Diesel Fire Pump while the Diesel Fire Pump was out of service for an extended period (Temporary Modification)
- (2) Installation of Gland Seal Exhauster trip function (Permanent Modification)

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) RPS Channel A2 Reactor Vessel Level 1 and 2 agastat relays following planned maintenance during the week ending July 13, 2019
- (2) CTG 11-1 following planned maintenance during the week ending September 14, 2019
- (3) Division 2 NIAS following planned maintenance during the week ending September 28, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) Low Pressure Coolant Injection (LPCI) Loop Select 480 Volt Swing Bus (72CF) automatic throwover scheme operability test during the week ending July 8, 2019
- (2) Emergency Diesel Generator (EDG) 14 24-hour run followed by hot fast restart during the week ending August 3, 2019

Inservice Testing (IP Section 03.01) (2 Samples)

- (1) High Pressure Coolant Injection (HPCI) pump and valve operability test at 1025 pounds per square inch (psi) during the week ending August 24, 2019
- (2) Division 2 LPCI and Suppression Pool Cooling/Spray pump and valve operability test during the week ending August 31, 2019

RADIATION SAFETY

71124.08 - Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Radioactive Material Storage (IP Section 02.01) (1 Sample)

The inspectors evaluated radioactive material storage.

- (1) The inspectors toured the following areas:
 - Fermi 2 Radioactive Waste Building Basement
 - Fermi 2 Radioactive Waste Building Mezzanine
 - Fermi 2 Radioactive Waste Building Main Floor
 - Fermi 2 Radioactive Waste Onsite Storage Facility

The inspectors performed a container check (e.g., swelling, leakage and deformation) on the following containers:

- 55 Gallon Drum 6512; Fermi 2 Radioactive Waste Onsite Storage Facility
- 55 Gallon Drum 6572; Fermi 2 Radioactive Waste Onsite Storage Facility

- 55 Gallon Drum 6577; Fermi 2 Radioactive Waste Onsite Storage Facility
- 55 Gallon Drum 6578; Fermi 2 Radioactive Waste Onsite Storage Facility
- 55 Gallon Drum 6225; Fermi 2 Radioactive Waste Onsite Storage Facility

Radioactive Waste System Walkdown (IP Section 02.02) (1 Sample)

The inspectors evaluated the following radioactive waste processing systems and processes during plant walkdowns:

(1) Liquid or Solid Radioactive Waste Processing Systems

- Fermi 2 Spent Fuel Pool Cooling and Clean Up
- Fermi 2 Asphalt Solidification System
- Fermi 2 Floor Drain Collection System

Radioactive Waste Resin and/or Sludge Discharges Processes

- Fermi 2 Spent Resin Tank
- Fermi 2 Primary Resin System
- Fermi 2 Resin Demineralizers

Waste Characterization and Classification (IP Section 02.03) (1 Sample)

The inspectors evaluated the radioactive waste characterization and classification for the following waste streams:

- (1)
- Fermi 2 Dry Active Waste
 - Fermi 2 Condensate Resin System

Shipment Preparation (IP Section 02.04) (1 Sample)

The inspectors evaluated and observed the following radioactive material shipment preparation processes:

- (1)
- EF2-19-051; UN (United Nations) 3321; Radioactive Material, LSA-II (Low Specific Activity-II), 7; 07/17/2019

Shipping Records (IP Section 02.05) (1 Sample)

The inspectors evaluated the following non-excepted package shipment records:

- (1)
- EF2-17-136; Dewatered Resin Liner, LH-16-017; 01/12/2018
 - EF2-18-007; Dewatered Resin Liner, LH-16-007; 01/19/2018
 - EF2-18-009; Dewatered Resin Liner, LH-17-005; 02/12/2018

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS08: Heat Removal Systems (IP Section 02.07) (1 Sample)

- (1) Unit 2 (July 1, 2018 - June 30, 2019)

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

- (1) Unit 2 (July 1, 2018 - June 30, 2019)

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) Unit 2 (July 1, 2018 - June 30, 2019)

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (1 Sample)

- (1) Unit 2 (July 1, 2018 - June 30, 2019)

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

- (1) Unit 2 (July 1, 2018 - June 30, 2019)

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

- (1) Unit 2 (July 1, 2018 - June 30, 2019)

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in the issuance of parts and storage of quality material that could be indicative of a more significant safety issue

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following Licensee Event Report (LER):

- (1) LER 2019-001-00, Unplanned Loss of Safety Function of Gland Seal Exhauster Trip during Planned Maintenance Due to Inadequate Procedure (ADAMS Accession ML19060A290). The circumstances surrounding this LER are documented in the Results Section of this report.

INSPECTION RESULTS

Incorrect Datum Used to Assess Lake Levels			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000341/2019003-01 Open/Closed	None (NPP)	71111.01
<p>The inspectors identified a finding of very low safety significance (i.e., Green) and an associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to have appropriate measures in place to assess the impact of projected Lake Erie water levels on the site. As a result, actual lake level, including any predicted maximum lake level during a flood watch or warning, was determined to be 1.3' [feet] higher during a flooding event than what was calculated.</p> <p><u>Description:</u></p> <p>As discussed in the Fermi Updated Final Safety Analysis Report (UFSAR), the determination of a mean Lake Erie water level reference point to ensure that safety-related structures, systems, and components (SSCs) are protected from flooding was based on 1935 New York Mean Tide (NYMT) lake level data. During this inspection period, the inspectors discovered that to calculate the maximum expected Lake Erie water level and assess site impact from potential flooding, the licensee utilized National Weather Service (NWS) data, which was based on 1985 International Great Lakes Datum (1985 IGLD) to determine the Lake Erie water level reference point. While inspecting the potential impacts of record high Lake Erie water levels, the inspectors discovered a non-conservative 1.3' difference between the two water level reference points.</p> <p>The flooding design basis as described in the UFSAR ensured that safety-related SSCs would continue to be functional provided the Lake Erie water level was no higher than 575.3' using NYMT data. This accounted for a maximum postulated storm-induced wave surge and flooding to a level of 586.9' NYMT, or 3.9' above the site grade of 583.0'. The inspectors reviewed NWS lake level data and discovered the current monthly mean level using 1985 IGLD data was 574.6', and was therefore less than the flooding design basis level of 575.3'. However, since the NYMT Lake Erie water level reference point was 1.3' lower than the NWS Lake Erie water level reference point, after adjusting for this difference, the actual maximum Lake Erie water level in the event of a storm-induced wave surging and flooding was 576.9' NYMT, which exceeded the maximum Lake Erie water level described in the UFSAR. The inspectors discussed the issue with licensee personnel, and the licensee subsequently performed evaluations to assess the actual impact on safety-related SSCs. In addition, the equipment and strategies assumed to be available for beyond-design-basis accidents (i.e. FLEX equipment) were evaluated. Following these evaluations, and despite the high lake level and Lake Erie water level reference point difference, the licensee determined that safety-related SSCs would continue to be functional.</p> <p>Regarding the licensee's FLEX strategy, which relied upon adequate warning time from the NWS when certain flood levels were predicted, the licensee discovered that the NWS utilized a 1.5' uncertainty when performing lake level predictions. As a result, even with the difference in Lake Erie water level reference points, the plant would have received the</p>			

prediction for extreme flood levels within a sufficient warning time to implement FLEX strategies.

As a result of the inspection, the licensee revised their Memorandum of Understanding (MOU) with the NWS to incorporate the difference between the datums. The licensee also implemented a monitoring program to ensure future Lake Erie water level increases were closely tracked.

Corrective Actions: The licensee entered this issue into their Corrective Action Program and established a formal monitoring plan to assess lake levels.

Corrective Action References: CARDS 19-25657, 19-25893, and 19-25820

Performance Assessment:

Performance Deficiency: The failure to develop appropriate measures to assess compliance with the flooding design and licensing basis, and to ensure an appropriate warning was received from the NWS to implement certain FLEX strategies was a performance deficiency. Specifically, the difference in reference datum between site design documents and Lake Erie water level measurements was not accounted for.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, a misunderstanding of current or predicted Lake Erie water level could result in the plant being in a condition outside its design and licensing basis, inoperable safety-related equipment, or an inability to perform response actions as planned for extreme flooding conditions. The inspectors consulted IMC 0612, Appendix E, "Examples of Minor Issues," Examples 3j and 3k and the associated Note that followed these examples. Specifically, when errors are discovered regarding design assumptions, if reasonable doubt exists as to the operability of safety-related SSCs (regardless if they are later determined operable), the issues can be considered more than minor. For this issue, reasonable doubt existed regarding safety-related SSCs because with the datum difference that existed in Lake Erie water level measurement the licensee was not within the design and licensing basis for flood protection.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors also consulted Appendix O, "Significance Determination Process for Mitigating Strategies and Spent Fuel Pool Instrumentation." Based on actual Lake Erie levels, the finding screened as having very low safety significance (i.e., Green), because there was no loss of safety function for any of the safety-related SSCs. Further, no issues with implementation of the licensee's FLEX strategy were identified.

Cross-Cutting Aspect: Not Present Performance. No cross cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that the applicable regulatory requirements and the design basis, as defined in Part 50.2 and as specified in the license application, for those SSCs to which this Appendix applies, are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, since issuance of the Fermi 2 Operating License on July 15, 1985, until July 12, 2019, the licensee failed to establish measures to assure that regulatory requirements and the design basis were correctly translated into specifications, procedures, or instructions. The licensee utilized information from the National Weather Service to receive notifications of flood watches and warnings that were inconsistent with the methodology used in the UFSAR flooding design basis, without compensation for the existing difference in Lake Erie water level reference points being used. As a result, actual Lake Erie water levels were identified to be 1.3' higher at the site than reported, which could challenge safety-related SSCs.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Response to an Out-of-Service Diesel Fire Pump

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000341/2019003-02 Open/Closed	[H.5] - Work Management	71111.18

A self-revealed finding of very low safety significance (i.e., Green) and an associated Non-Cited Violation (NCV) of Fermi License Condition 2.C.(9) was identified when licensee personnel failed to take appropriate actions in response to an out-of-service diesel fire pump. Specifically, a temporary diesel fire pump (DFP) used to restore system functionality failed to function as designed and the risk plan that was developed could not be implemented as written.

Description:

On August 13, 2019, the licensee entered Technical Requirements Manual (TRM) Action 3.12.2 A.1 due to planned maintenance on the DFP. The TRM required either the pump to be restored or an alternate pump to be installed within 14 days. Upon discovery of extensive wear on components associated with the DFP right angle drive, the licensee concluded that the DFP would not likely be restored within 14 days. The licensee initiated actions to procure an alternate DFP to comply with the TRM requirements and restore full system capabilities. The licensee received and installed a temporary diesel-driven fire pump and exited the TRM action within the 14 day action requirement on August 27, 2019. On September 3, 2019, the licensee initiated a weekly test to operate the temporary DFP. Approximately 10 minutes after the pump was started, pump coolant was observed to be leaking from the temporary fire pump. The pump was immediately shut down by the operators. Upon investigation, the licensee believed either the coolant had been overfilled and/or the engine had overheated. It was also noted that during the test the pump had been running with no system demand (i.e. dead-headed) during test preparations. After consulting with the vendor, the licensee determined that the pump should have had a minimum flow line installed to prevent damage from overheating under low-demand conditions. While the temporary pump did include a relief valve on the pump discharge, the system did not function in the same manner as the relief valve on the permanent pump, which provided both relief and minimum flow functions during pump operation.

In addition, the licensee's risk plan to operate with a single electric pump available (pending re-design/re-work of the temporary DFP following this issue) relied upon power being available from the Combustion Turbine Generators (CTGs) in the event of a loss of offsite power. However, the licensee had removed all CTGs from service for planned maintenance. As a result of these issues, the licensee coordinated with the temporary pump vendor to enable its relief valve to also function as a minimum flow line. Additionally, the licensee revised the risk plan to incorporate other strategies while the CTGs were out of service.

Corrective Actions: The licensee added a functional minimum flow line and revised the risk plan to ensure all elements of the plan could be performed.

Corrective Action References: CARDS 19-26837, 19-26615, and 19-26603

Performance Assessment:

Performance Deficiency: The failure to take necessary actions to minimize fire risk and perform repairs as soon as practical when fire equipment was taken out of service, as required by the fire protection program, was a performance deficiency. Specifically, fire risk was not minimized, and restoration of system capability was not timely when a temporary fire pump was installed with an inadequate design. Further, fire risk was not minimized when the risk plan that was developed could not be implemented as written due to credited backup power not being available.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the availability, reliability, and capability of the fire protection system was adversely impacted by the installation of a temporary DFP that could not function as designed. Further, although normal power was available, the risk plan also relied upon a backup source of power that was not available had it been needed.

Significance: The inspectors assessed the significance of the finding using Appendix F, "Fire Protection and Post - Fire Safe Shutdown SDP." The finding screened as having very low safety significance (i.e., Green) based on answering 'Yes' to Question 1.4.3-A, which asked whether or not adequate fire water capacity still existed for equipment important for safe shutdown. In this case, the electric fire pump was still functional with normal power available.

Cross-Cutting Aspect: H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, the licensee did not coordinate with the pump vendor to ensure all necessary plant technical requirements were incorporated into the design of the temporary fire pump. Further, site personnel with expertise in engineering modifications were not initially involved to ensure all technical requirements were incorporated into the design of the temporary fire pump.

Enforcement:

Violation: Fermi License Condition 2.C.(9) requires, in part, that the licensee shall maintain in effect all provisions of the approved fire protection program as described in the UFSAR. Section 9A.1.3.2.i of the Fermi UFSAR described the components of the fire protection program and required, in part, that assurance will exist that, "actions are taken to

minimize fire risk and repairs are made as soon as practical when fire equipment is taken out of service.”

Contrary to the above, from August 27, 2019, until September 17, 2019, actions were not taken to minimize fire risk, nor were repairs made as soon as practical when the permanent diesel fire pump was out of service as required by Fermi License Condition 2.C.(9) as specified in UFSAR Section 9A.1.3.2.i. Specifically, a temporary diesel fire pump was installed that lacked a functional minimum flow line, which resulted in the pump failing its first weekly surveillance. This required extensive re-design, during which time the plant fire response capability was reduced to a single fire pump. Additionally, fire risk was not minimized because the fire risk plan that was developed for operating with only a single fire pump could not be implemented as written since backup power that was credited in the fire risk plan was not available.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Observation: Trend in Incorrect Parts Issued or Ordered

71152

During a semi-annual trend review, the inspectors noted that a large number of CARDS initiated since January 2019 identified incorrect parts that had been ordered or issued for work. The inspectors shared this observation with licensee staff who agreed that it appeared a trend existed. The licensee initiated CARD 19-27102 as a result of the inspectors' observations to document five recent issues. During further discussions with the licensee, the inspectors noted that 12 additional CARDS dating back to January 2019 also identified issues with incorrect parts. Within this group of CARDS, and upon further review, the licensee discovered a potential adverse trend within one particular department. In reviewing the CARDS, the inspectors also noted an inconsistent use of cause-codes within the CARDS to describe the various parts issues. In some cases, no cause-codes were assigned at all. As such, the failure to utilize a consistent method of assigning cause codes to CARDS could result in plant personnel missing opportunities to identify trends before they become larger concerns. At the end of the inspection period, the licensee planned to further assess this issue.

Observation: Failure to Address a Trend in the Storage of Quality Material

71152

During a semi-annual trend review, the inspectors reviewed Elevation CARD 19-21685 from the site's Nuclear Quality Assurance (NQA) organization regarding the storage and staging of parts. The inspectors had also noted what appeared to be a number of CARDS written throughout the year that addressed the improper storage and handling of materials. The NQA Elevation CARD documented numerous recurring issues with the storage and handling of quality material that dated back to 2015, along with some more recent issues. The inspectors reviewed several of the actions that resulted from the Elevation CARD and from previous NQA audits. One of the primary issues was the discovery that quality and non-quality material were not being stored in accordance with plant procedures. In particular, parts had been issued, not used, and then not properly returned to the warehouse within the procedurally required timeframe, which increased the likelihood that material traceability could be lost and/or parts could be stored in an uncontrolled environment. From an NQA audit finding identified in CARD 15-22778, the licensee implemented a corrective action which established a recurring activity to periodically inspect areas of the plant where improperly stored material was being found (i.e., "PST [Performance Scheduling and Tracking] events"). The inspectors discovered that while the PSTs were being performed and

generally found no issues, NQA continued to identify that parts were stored inappropriately, which eventually resulted in the Elevation CARD. While discussing the PST events with the inspectors, the licensee also identified that there was an allowance for the return of improperly stored material to the warehouse of up to 60 days, contrary to the site procedural requirements of 7 days (online work) or 30 days (outage work). Further, the licensee identified that the PST events did not require a check of non-quality material being stored improperly, which had also been identified as an issue. The licensee initiated a CARD to address the issues with how the PSTs were written.

The inspectors also reviewed an Interim Effectiveness Review (IER) that the licensee performed to support closure of the NQA Elevation CARD. This IER was completed on August 30, 2019, and concluded that actions associated with the Elevation CARD had been performed satisfactorily. However, on August 14, 2019, NQA denied a request to close the CARD based on the identification of continuing issues with the storage of material and the failure to correctly follow the appropriate process for closing NQA Elevations. As of October 3, 2019, the inspectors noted there had been no additional actions created to address the failure to close the NQA Elevation CARD, or develop a revised action plan to measure the effectiveness given the apparent discrepancy between the conclusion of the IER and NQA’s assessment regarding the effectiveness of the corrective actions that had been performed.

Failure to Properly Pre-Plan Work in Accordance with the Work Control Conduct Manual

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green FIN 05000341/2019003-03 Open/Closed	[H.7] - Documentation	71153

A self-revealed finding of very low safety significance (i.e., Green) was identified when the licensee failed to properly pre-plan maintenance activities on the Feedwater Distributed Control System in accordance with the Work Control Conduct Manual. This resulted in an unplanned loss of the gland seal exhauster trip safety function.

Description:

On January 1, 2019, during reactor startup and at approximately 5 percent rated thermal power, the licensee began a planned maintenance activity to correct a failed main steam line flow indication associated with the digital Feedwater Distributed Control System (FW DCS). This maintenance included performing a full system reboot of FW DCS. Before the maintenance was performed, the licensee attached an impact statement to the work order, as required by Work Control Conduct Manual (MWC) 10, Revision 39. Specifically, Step 4.40.1 of the MWC required, in part, “In Maximo [the work order system software], under the safety/impact tab for Work Order, and under the impact statement section, provide the following: affected modes, Technical Specifications, technical requirements, expected alarms, precautions including system component status, any requirements prior to tagging, prohibited parallel work, trips/actions including trip(s) and action(s) to prevent, indications/actuators including indication(s) and actuation(s), system impact/PMT [post maintenance testing] including plant system impact, system impact.” However, the licensee failed to include information regarding the rod worth minimizer (RWM) and the turbine gland seal exhauster (GSE) trip in the impact statement that should have been included. When reviewing the work order prior to performing the maintenance activity, the Operations crew on shift noted the

impact statement was missing a reference to the Technical Specifications for the RWM. As a result, the licensee was able to be prepared for the impact of the work on the RWM and enter the appropriate Technical Specification (TS) Limiting Condition for Operation (LCO). However, the licensee failed to identify that the GSE trip function was also impacted, and therefore during the maintenance activity did not enter the associated TS LCO required action.

The GSE trip function is relied upon between 0 and 10 percent rated thermal power to ensure that dose limits do not exceed regulatory limits during a control rod drop accident. The impact to the GSE trip function when resetting the FW DCS resulted from a modification that was installed during the most recent refueling outage in October 2018. Therefore, resetting the FW DCS would not have previously impacted the GSE trip.

When FW DCS was reset, annunciator 4D32, "MSL [Main Steam Line] Radn [Radiation] Mon [Monitor] GS [Gland Seal] STM [Steam] EXHS [Exhaust] Trip Enabled," cleared and unexpectedly re-alarmed in the control room. Operators subsequently determined that the GSE trip function was disabled during the reset of FW DCS, which lasted approximately 1 minute and 19 seconds. As a result, the licensee submitted (EN) 53811 pursuant to 10 CFR 50.72(b)(3)(v)(C) and 10 CFR 50.72(b)(3)(v)(D) as any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to: 1) control the release of radioactive material, and 2) mitigate the consequences of an accident, respectively. On March 1, 2019, the licensee submitted Licensee Event Report (LER) 05000341/2019-001-00 for this event.

The licensee performed a causal evaluation and determined that the cause of the event was that the Failure Modes Effect and Analysis (FMEA) discussion in the engineering modification package did not specifically identify a loss of FW DCS as a failure mode for the GSE trip. In addition, the inspectors noted that Section 4.40, "Work Order Safety/Impact Section Completion," of MWC 10 did not include suggested reference documentation for Operations personnel to review. As a result, the inspectors questioned the licensee as to what documentation was reviewed when generating the impact statement. The licensee stated a review of previous FW DCS work orders and impact statements, and the applicable FW DCS procedures was completed. Additionally, when reviewing corrective actions, the inspectors questioned whether all relevant documents were fully updated and if any additional failure modes were evaluated. Upon further review, the licensee determined additional documents were required to be updated to include information regarding the impact of the FW DCS on the GSE trip function. Also, the licensee determined there was a lack of alignment between the causal evaluation and correction actions, such that a review of additional failure modes was not performed to address the FMEA gap that was identified.

Corrective Actions: The licensee entered the issues into their Corrective Action Program. Planned corrective actions included updating additional applicable procedures and design documents with the relevant GSE trip information and evaluating the lack of alignment between the causal statement and corrective actions.

Corrective Action References: CARDS 19-27084 and 19-26836

Performance Assessment:

Performance Deficiency: The licensee's failure to properly pre-plan maintenance activities on the FW DCS in accordance with the Work Control Conduct Manual was a performance

deficiency. Specifically, the licensee failed to evaluate the impact of FW DCS on the GSE trip instrumentation, which resulted in the unplanned loss of the GSE trip safety function.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the SSC and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events.

Specifically, the licensee disabled the GSE trip when the function was required. Without mitigating actions, the failure to trip the GSEs could have resulted in a dose above regulatory requirements if a control rod drop accident had occurred. Therefore, the required barrier was adversely impacted.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined that the performance deficiency affected the Barrier Integrity cornerstone. The finding was determined to be of very low safety significance (i.e., Green), because the inspectors answered "Yes" to the question, "Does the finding only represent a degradation of the radiological barrier function provided for the control room, or auxiliary building, or spent fuel pool, or SBTG [Standby Gas Treatment] system (BWR)?" in Exhibit 3, Barrier Integrity Screening Questions.

Cross-Cutting Aspect: H.7 - Documentation: The organization creates and maintains complete, accurate and up-to-date documentation. The licensee failed to create and maintain complete, accurate and up-to-date documentation. Specifically, the licensee's engineering design change document failed to completely identify all failure modes. Additionally, the licensee failed to update documentation associated with the FW DCS and GSE systems when implementing the plant modification in 2018, which could have aided in the licensee's system impact evaluation.

Enforcement:

Because the Work Control Conduct Manual was not subject to the requirements of 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Processing Plant," the inspectors did not identify a violation of regulatory requirements associated with this finding.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On October 16, 2019, the inspectors presented the integrated inspection results to Mr. P. Dietrich, Senior VP and Chief Nuclear Officer, and other members of the licensee staff.
- On July 18, 2019, the inspectors presented the Radiation Protection inspection results to Mr. M. Caragher, Executive Director - Nuclear Production, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	19-25280	NRC Identified: Local Lake Level Indication Reads Higher than UFSAR Assumed Maximum Starting Level for Flood	07/12/2019
		19-25458	Determine Impact of CARD 19-25280 and EFA-A30-19-007 on FLEX and Hardened Vent Required Equipment in MOP25	07/18/2019
		19-25657	AOP 20.000.01 MOU for Flooding is Not Specific in Datum Reference	07/29/2019
		19-25893	Flood Analysis Past Functionality of FLEX Strategy in Reverence to CARD 19-25657	08/05/2019
	Miscellaneous	Adverse Condition Monitoring Plan ACMP 19-016	Lake Erie Water Level Elevation	
		IGLD 1985	Brochure on the International Great Lakes Datum 1985	01/1992
		NARP-18-0277	Letter of Agreement Between Fermi 2 and NOAA - National Weather Service	11/19/2018
		NARP-19-0140	Letter of Agreement Between Fermi 2 and NOAA - National Weather Service	07/31/2019
		National Ocean Survey, Detroit, Michigan	History and Theory of Datum Planes of the Great Lakes	
		TE-K11-19-039	Impact of Incorrect Datum Reference Used for Design Maximum Flood Level on Past Functionality of FLEX/HCVS (CARD 19-25657)	0
	Procedures	20.000.01	Acts of Nature	0, 48, 49, 54
		29.400.01	FLEX	3
		ARP 7D22	General Service H2O Screen a H2O Level High/Low	21
		MOP01-200	Severe Weather Guidelines	2
		MOP25	Beyond-Design-Basis Event Coping Strategies Program Document	5
	Work Orders	38560633	Lube and Inspect Reactor/Auxiliary Building Water Tight Doors	07/16/2014

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04Q	Corrective Action Documents	05-24306	Add Electric Fire Pump to DC-6105, Dedicated Shutdown for Appendix "R" Loads	07/20/2005
		18-28658	Discharge Pressure Above Normal Parameters	10/23/2018
	Drawings	6M721-2034	Diagram Core Spray System C.S.S. Reactor Building	AS
		6M721-5707	Core Spray System Functional Operating Sketch	AG
		6M721-5730-3	Non-Interruptible Control Air System Division I & II Functional Operating Sketch	AL
		6M721-5734	Emergency Diesel Generator System Functional Operating Sketch	BH
		6M721N-2046	P&ID Diesel Generator System Division I RHR Complex	AF
		6M721N-2048	P&ID Diesel Fuel Oil System and Lube Oil System Division I RHR Complex	AL
	Miscellaneous	T13019	Temporary Change Notice - Fire Water Suppression System	61
	Procedures	23.129	NIAS Divisions 1 and 2 Control Air Startup	117
		23.203	Core Spray System	64
		23.307	Emergency Diesel Generator System	127
		28.504.03	Fire Suppression Water System Simulated Automatic Activation Test	28
	Work Orders	49771706	Perform 28.504.09 Electric Fire Pump Monthly Operability Test	07/02/2019
		50002740	Perform 28.504.09 Electric Fire Pump Monthly Operability Test	07/30/2019
71111.04S	Drawings	6M721-5357	Emergency Equipment Cooling Water System Division II	BU
		6M721-5444	Emergency Equipment Cooling Water System Division I	CC
	Procedures	23.127	Reactor Building Closed Cooling Water/Emergency Equipment Cooling Water System	145
71111.05Q	Corrective Action Documents	19-24505	2019 Fire Protection Self-Assessment Deficiency - Investigate GSW Fire Rated Assemblies to be Included into TRM 3.12.8	06/13/2019
		19-26383	Diesel Fire Pump Room Fire Doors were Found Blocked Open Without a Fire Impairment	08/23/2019
		19-26426	Need DCR for Diesel Fire Pump Procedures to Address Log Entry while Fire Doors to Diesel are Open	08/26/2019
	Fire Plans	FB-AB-5-16b	Auxiliary Building, South Standby Gas Treatment System	3

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			(SGTS) Room, Zone 16, EL. 677'6"	
		FP-AB-5-16a	Auxiliary Building North Standby Gas Treatment (SGTS) Room, Zone 16, Elevation 677'6"	4
		FP-AB-5-16b	Auxiliary Building, South Standby Gas Treatment System (SGTS) Room, Zone 16, Elevation 677'6"	3
	Miscellaneous	9A.4-44	Fermi 2 UFSAR	22
		TR 3.12.8	Fire Protection Fire Rated Assemblies	78
	Procedures	28.502.02	CO2 System Valve Lineup Verification	8
		35.000.242	Barrier Identification/Classification	57
		FP-AB-BMT-4	Control Air Compressor Room, Zone 4 Elevation 551'0"	4
		FP-GSW-1-31	General Service Water Pumphouse Zone 31	8
		FP-RB-B-5b	Reactor Building Basement Northeast Corner Room Zone 5, Elevation 562'0"	4
	Work Orders	FP-RB-SB-5a	Reactor Building Sub-Basement Northeast Corner Room, Zone 5, Elevation 540'0"	6
		47714949	Perform 28.502.18 Division 1 SGTS CO2 Actuation Test	12/13/2018
		48565671	Perform 28.502.18 Division 2 SGTS CO2 Actuation Test	01/31/2019
71111.06	Calculations	DC-5426	PBOC - High and Moderate Energy Line Break Evaluation	D
	Corrective Action Documents	19-23894	NRC Identified Concern: Housekeeping in Torus	05/21/2019
	Drawings	29.100.01 SH 5	Secondary Containment and Radiation Release	12
		6A721-2000-01	Reactor Building Sub-Basement Plan Elevation 540'0" Scale 1/8"=1'-0"	M
		6A721-2000-02	Reactor Building Basement Plan Elevation 652'0"	N
		6M721-2032	Sump Pump Diagram Radwaste System	BR
		6M721-2224	Diagram Floor Drains All Floors Auxiliary and Reactor Buildings	AA
		7M721-2218	Floor and Equipment Drains Sub-Basement Plan Reactor Building	Y
	Procedures	ARP 2D82	Reactor Building Torus Sump Level Hi-Hi/Lo-Lo	11
ARP 2D83		Reactor Building Leakage to Torus Sump High	7	
71111.11Q	Miscellaneous	Reactivity Maneuvering Plan	September 2019 RPA	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		SS-OP-904-1903	Evaluation Scenario	0
	Procedures	MOP19	Operations Conduct Manual, Reactivity Management	26A
71111.13	Corrective Action Documents	19-26718	Minimum Flow Line for Alternate Diesel Fire Pump Detached from Pump Discharge Line	09/07/2019
		19-26837	CTG Black Start Capability Removed When Relied Upon for FPEE-19-0003	09/11/2019
	Drawings	6M721-5444	Emergency Equipment Cooling Water Division 1	CC
	Miscellaneous	EF2-PRA-005.11	High Pressure Coolant Injection (HPCI) System - System Information Notebook	3
		MMR12	Equipment Out of Service Risk Management	20
		ODE-20	Protected Equipment	24
	Procedures	20.300.120kV	Loss of 120kV	19
		20.300.SBP	Loss of Offsite and Onsite Power	28
		23.202	High Pressure Coolant Injection System	116
		23.206	Reactor Core Isolation Cooling System	103
		23.208	RHR Complex Service Water Systems	126
		23.501.01	Fire Water Suppression System	61
		MMR App H	On-Line Core Damage Risk Management Guidelines	15
		MMR12	Equipment Out of Service Risk Management	20
		MOP05-100	Protected Equipment	2C
ODE-20	Protected Equipment	24		
71111.15	Calculations	DC-0623	Standby Liquid Control System Design Calculations	A
		DC-4997	Standby Liquid Control Instrumentation Surveillance Calibration	D
		DC-4997	SLC Design Value Changes to Meet Power Uprate/Higher Energy Cycles	0
		DC-5961	WS01 Boron Injection Variables	0
		DC-5962	WS01A Boron Weight Equivalents	0
	Corrective Action Documents	16-26260	Diesel Fire Pump Angle Drive Inspection Findings	08/09/2016
		19-21369	Tech Spec 3.1.7 Figure 1 SLC Tank Level Limits Potentially Non-Conservative	02/21/2019
		19-24615	Diesel Fire Pump Engine SWI>Action Level B	06/18/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
		19-25694	TRM Surveillance Requirement 3.6.1.1 Not Referenced in Procedure or SST Event and Potentially Not Performed in RF19	07/29/2019	
		19-26111	Condition of the DFP Right Angle Anti-Rotational Clutch	08/13/2019	
		19-26174	RCIC Flow Controller Issue Unable to be Resolved Under WO 53945247	08/15/2019	
		19-26186	Lack of Follow-Through on a Known Component Degraded Condition	08/16/2019	
		19-26198	RCIC Flow Issue	08/16/2019	
		19-26237	Missing Bolts in DFP Right Angle Drive	08/19/2019	
		19-26362	While Performing 44.010.143 Division 2 RPS Two Out of Four Logic Module Functional Test on APRM 2 OPRM Trip Light Did Not Come On Nor Did RPS Test Box Light Come On (Both Acceptance Criteria)	08/22/2019	
		19-27084	Review and Address CARD Quality Issues with CARD 19-20002	09/20/2019	
		Drawings	107E5901WH	C5100, C51R809A & B	0
			107E5901WH	Two-Out-Of-Four Logic Module	1
	29.100.01 SH 1A		RPV Control - ATWS	16	
	29.100.01 SH 3A		RPV Flooding & Emergency Depressurization - ATWS	16	
	6I721-2145-18		Schematic Diagram Power Range Neutron Monitoring Reactor Protection System Outputs	H	
	6I721-2155-04		Schematic Diagram Reactor Protection System Relay Tabulation	X	
	6I721-2155-07		Schematic Diagram Reactor Protection System Trip System 'B' System Relays	X	
	6I721-2155-08		Schematic Diagram Reactor Protection System Trip System 'A' Scram Trip Logic	M	
	6I721-2155-10		Schematic Diagram Reactor Protection System Scram Solenoids	N	
	6I721-2235		RCIC System Instrumentation Loop	W	
	6I72102155009	Schematic Diagram Reactor Protection System Trip System 'B' Scram Trip Logic	M		
	6M721-2034	Core Spray System C.S.S. Reactor Building	AS		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		6M721-2044	Reactor Core Isolation Cooling System	BE
		6M721-2045	Reactor Core Isolation Cooling (RCIC) System Barometric Condenser	AS
	Miscellaneous	MQA13-100	Quality Assurance Conduct Manual, Trend Condition Evaluation Report	7
		TE-P80-19-035	Condition of the Diesel Fire Pump Right Angle Drive	0
	Procedures	44.110.004	Remote Shutdown RCIC Flow Indication Calibration	39
	Work Orders	53945247	RCIC Pump Discharge Flow Transmitter Elec	
71111.18	Corrective Action Documents	19-27387	Alternate Diesel Fire Pump Trip during Weekly Surveillance Run	09/30/2019
	Drawings	6I721-2080-51	Visual Annunciator & Sequence Recorder Alarm Schematic	V
		6I721-2125-06	Control System Feedwater (DCS-FW) External Connections	H
		6I721-2331-07	Schematic Diagram Gland Sealing Steam Exhauster (E&W)	G
		6M721-5733-1	Fire Protection Functional Operating Sketch	BX
	Engineering Changes	19-0014	Alternate Diesel Fire Pump (ADFP)	C
	Engineering Evaluations	FPEE-19-003	TR LCO 3.0.3 Evaluation for the Non-Functional Diesel Fire Pump TRM Section TR3.12.2	1
	Miscellaneous	EDP-37673	EDP Continuation Sheet - Scope of Work	0
		Fermi 2 UFSAR	Other Auxiliary Systems	22
		LRN-01-0410, LCR H01-03	Letter to NRC from PSEG Nuclear LLC, Request for Change to Technical Specifications Mechanical Vacuum Pump Trip Instrumentation Hope Creek Generating Station Facility Operating License NPF-57 Docket No. 50-354	01/04/2002
		Work Request Revision 55179348	PMT and TRSR Verification for TM 10-0014, Revision E	1
	Procedures	28.504.03	Fire Suppression Water System Simulated Automatic Actuation Test	28
	Work Orders	54828250	TM 19-0014, Install Alternate Diesel Fire Pump at Pump House	08/16/2019
		54938127	Perform Temporary Diesel Fire Pump Weekly Operability Test	09/12/2019
71111.19	Corrective Action	19-25181	Schedule Adherence 'A' Work Not Completed as Scheduled	07/09/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents	19-26850	CTG 11-1 Lube Oil Leak	09/12/2019
		19-26876	CTG 11-1 DC Power Supply Failure Alarm During SOP Run	09/12/2019
	Drawings	6I721-2095-14	Schematic Diagram Nuclear Steam Supply Shut Off System Trip System A	O
		6I721-2095-18	Schematic Diagram NSSS System Main Steam Line Outboard Isolation Valves B2103F028A, B, C, D	S
		6I721-2155-22	Schematic Diagram Reactor Protection System Testability Modification	L
	Engineering Changes	70056	CTG 11 Fuel Oil Tank Replacement	C
	Miscellaneous		Fermi 2 Archived Operator Log	09/24/2019 - 09/26/2019
		NRC-02-0036	Letter from Detroit Edison to NRC: Proposed Technical Specification Change (License Amendment) - Response Time Testing	05/23/2002
	Procedures	23.324	Supervisory Control-120 KV Switchyard and CTG 11 Generators	99
		23.601	Instrument Trip Sheets	39
		35.318.017	Inspection and Testing of Multi-Contact Auxiliary Relays	52
		44.020.011	Response Time Test of B21-N081A Reactor Vessel Low Water Level 1 Transmitter	46
	Work Orders	45299261	Replace RPS Channel 'A2" Reactor Vessel Level 1 and 2 Agastat Relays	07/09/2019
		46187487	Replace Desiccant in Division 2 NIAS Dryer	09/24/2019
		50244081	Change Crankcase Oil, Inspect Belts, Lube Motor Bearings, and Clean Exterior	09/12/2019
		50349443	Clean and Inspect CTG 11-1 Water Cooler and Inspect Cooler Belts	04/02/2018
		50349457	Calibrate 63HR Hydraulic Ratched Pressure Switch on CTG 11-1	04/02/2018
		50349598	Semi-Annual Inspection of CTG 11-1	04/02/2018
		50452150	Piping Tie In (FOST)	04/15/2018
		54721898	CTG 11-1 Liquid Fuel Pump Bypass Servo Valve is Leaking Fuel Oil While CTG is Operating	08/06/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
		55165181	Repair CTG 11-1 Lube Oil Leak	09/12/2019	
71111.22	Corrective Action Documents	17-26455	Procedure Revision for LPCI Swing Bus Surveillance 24.321.07	08/01/2017	
		19-26353	HPCI Barometric Condenser Vacuum Pump Flashing Amps	08/22/2019	
	Drawings	6I721-2573-11	Schematic Diagram 480V Essential Bus 72C Position "3C" & MCC 72C-F Position "1C"	Q	
		6M721-2035	High Pressure Coolant Injection System (HPCI) Reactor Building	BN	
		6M721-2043	High Pressure Coolant Injection System Barometric Condenser (HPCI) Reactor Building	AJ	
		6M721-2083	Residual Heat Removal (RHR) Division 2	CB	
		6SD721-2510-01	One Line Diagram 480V Essential Bus 72B, 72C, 72E, and 72F	BA	
		Miscellaneous	DC-0367	Pump Curves and Requirements, Volume 1	Q
	Procedures	23.307	Emergency Diesel Generator System	126	
		24.202.01	HPCI Pump and Valve Operability Test at 1025 PSI	119	
		24.204.06	Division 2 LPCI and Suppression Pool Cooling/Spray Pump and Valve Operability Test	79	
		24.307.33	Emergency Diesel Generator No. 14-24 Hour Run Followed by Hot Fast Restart	41	
	Work Orders	48747466	Perform 24.404.06 Division 2 LPCI and Torus Cooling/Spray Pump and Valve Operability Test	03/01/2019	
		49471252	Perform 24.204.06 Division 2 LPCI and Torus Cooling/Spray Pump and Valve Operability Test	05/30/2019	
		49759149	Perform 24.321.07 480V Swing Bus 72 CF Automatic Throw-Over Scheme Operability	07/08/2019	
		50244112	Perform 24.202.01 HPCI Pump/Flow Test and Valve Stroke at 1025 PSIG	08/20/2019	
		50298122	Perform 24.204.06 Division 2 LPCI and Torus Cooling/Spray Pump and Valve Operability Test	08/21/2019	
	71124.08	Corrective Action Documents	CARD 18-21171	Dose Estimate Exceeded When Loading 8-120 Liner for Transportation	02/12/2018
			CARD 18-22666	Vendor Box Arrived on Site as a Non-Radioactive Shipment With a RAM Tag	03/30/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		CARD 18-23247	Telepole Failed Source Check Following RAM Shipment Receipt	04/22/2018
	Corrective Action Documents Resulting from Inspection	CARD 19-25399	NRC Identified - Repairs to Spent Resin Tank Required	07/17/2019
	Miscellaneous	NPRP-19-0016	Scaling Factors Report Dated February 4, 2019	02/14/2019
	Procedures	65000.506	Shipping Low Specific Activity (LSA) Radioactive Material	22
		65000.509	Shipping Greater Than A1, A2 Quantities of Radioactive Material	20
		65000.510	Shipping Limited Quantity of Radioactive Material	25
		65000.610	Shipping Cask USA/9168/B(U)	22
	Shipping Records	EF2-17-136	Dewatered Resin Liner, LH-16-017	01/12/2018
		EF2-18-003	Dewatered Resin Liner, LH-16-007	01/19/2018
		EF2-18-009	Dewatered Resin Liner, LH-17-005	02/12/2018
71151	Corrective Action Documents Resulting from Inspection	19-27175	NRC Identified Typographical Error in RCIC Monthly Performance Indicator	09/24/2019
	Miscellaneous		MSPI Derivation Report - Cooling Water System-Unavailability Index	06/30/2019
			Fermi 2 RHR Performance Indicators	08/01/2018 - 07/31/2019
			MSPI Derivation Report - Residual Heat Removal System-Unreliability Index	06/30/2019
			MSPI Derivation Report - Residual Heat Removal System-Unavailability Index	06/30/2019
			Fermi 2 RCIC Performance Indicators	07/01/2018 - 06/30/2019
			MSPI Derivation Report - Heat Removal Systems-Unreliability Index	06/30/2019
		N/A	Monthly Performance Indicator Submittal to the NRC for Occupational Exposure Control Effectiveness	07/01/2018 - 06/01/2019
N/A	Monthly Performance Indicator Submittal to the NRC for	07/01/2018 -		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			RETS/ODCM Radiological Effluent Occurrences	06/01/2019
		N/A	Monthly Performance Indicator Submittal to the NRC for RCS Specific Activity	07/01/2018 - 06/01/2019
71152	Corrective Action Documents		CARD Search Results, Keyword="Incorrect Part"	01/01/2019 - 09/13/2019
		19-21685	NQA Elevation - Leaders Actions Have Been Insufficient in Correcting Fundamental Worker Behaviors for the Control and Traceability of Safety-Related Material, Parts, and Components	03/05/2019
		19-21750	OSC Cognitive Trend in Supply Chain Performance Issues	03/06/2019
		19-23431	Cognitive Trend: Non-Maintenance Related Rework Events Due to Inadequate Engineering Parts Evaluations	05/03/2019
		19-25682	Late Adds - Material Being Added to Work Orders Inside of T10 (Adverse Trends per OSC)	07/29/2019
		19-27524	NRC Identified Trend - Parts Issues	10/03/2019
	Miscellaneous	NPMA-16-0040	Effectiveness Review for CARD 15-22778: NQA Audit Finding - Safety Related (QA1) and Non-Safety (NQ) Spare Parts Improperly Maintained	04/05/2016
	Work Orders	44401214	PM: ME76; Perform MRTW of Unused Q Material from MEP Buildings	05/20/2017
		44477754	PM: ME77; Perform MRTW of Unused Q Material from MOV Shop and Building 49	05/19/2017
71153	Corrective Action Documents	18-30364	MSL 'B' Flowrate Meter Downscale	12/25/2018
		19-20002	4D32 MSL RADN MON GS STM EXHS Trip Enabled Cleared with Power Less Than 10 Percent	01/01/2019
		19-24865	19-20002-08 Performance Gap Analysis Tracking	06/28/2019
		19-26836	NRC Identified 45.618.003 Reactor Feedwater System Bailey DCS Maintenance Incomplete Information	09/11/2019
		19-27084	Review and Address CARD Quality Issues with CARD 19-20002	09/20/2019
	Procedures	20.000.07	Fuel Cladding Failure	25
		23.107	Reactor Feedwater and Condensate Systems	149
		45.618.003	Reactor Feedwater System Bailey DCS Maintenance	11
		ARP 3D82	Main Steam Line CH A/B/C/D Radiation Monitor Hi-Hi	15

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		MES90-119	Preparation and Control of Engineering Design Packages	2
		MWC10	Work Control Conduct Manual-Chapter 10, Work Package Preparation	39
	Work Orders	52849877	Main Steam Line Flow Failed for Steam Lines on DCS Flat Panel Display, Halt/Restart Both FW DCS Processors	01/1/2019