DTE Electric Company
6400 N. Dixie Highway
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April 16, 2026
NRC-26-0014

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Fermi 2 Power Plant
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Annual Non-Radiological Environmental Operating Report

Pursuant to the Fermi 2 Operating License, Appendix B, "Environmental Protection Plan," Section 5.4.1, DTE Electric Company hereby submits the 2025 Annual Non-Radiological Environmental Operating Report for Fermi 2.

No new commitments are being made in this submittal.

Should you have any questions or require additional information, please contact me at (734) 586-4772.

Sincerely,

Eric Frank
Manager - Nuclear Licensing

Enclosure: 2025 Annual Non-Radiological Environmental Operating Report

cc: NRC Project Manager
NRC Resident Office
Regional Administrator, Region III

Enclosure to
NRC-26-0014

Fermi 2 NRC Docket No. 50-341
Operating License No. NPF-43

2025 Annual Non-Radiological Environmental Operating Report

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DTE Electric Company - Fermi 2
6400 North Dixie Highway
Newport, MI 48166

Reporting Period:

January 1, 2025 to December 31, 2025

2025 ANNUAL NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

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2025 ANNUAL NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

1.0 EXECUTIVE SUMMARY

The following is a summary of the 2025 Annual Non-Radiological Environmental Operating Report for the DTE Electric Company - Enrico Fermi Unit 2 Power Plant (Fermi 2):

- No terrestrial monitoring activities were conducted or required to comply with the Fermi 2 Operating License. Based on the findings of the terrestrial monitoring program, which was concluded in 1994, no further aerial-photographic evaluations are planned.

  ITC Transmission currently owns and operates the transmission infrastructure, including the corridor rights-of-way where herbicides are applied. ITC vegetation managers confirmed that in 2025 ITC applied herbicide to 137.88 acres in the Brownstown-Fermi corridor and 559.03 acres in the Wayne-Monroe corridor.

- During the period covered by this report, there were no changes to station design that created an unreviewed environmental question, per the requirements and definitions of the Environmental Protection Plan (EPP).

- No unusual or important environmental events, as defined by the EPP, occurred. Accordingly, no nonroutine reports were submitted.

- There was 1 incident of non-compliance with the Fermi 2 National Pollutant Discharge Elimination System (NPDES) Permit.

2025 ANNUAL NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

2.0 INTRODUCTION

2.1 Purpose

The purpose of this report is to provide the Nuclear Regulatory Commission (NRC), site personnel, and the public with information regarding the implementation of the Non-Radiological Environmental Protection Plan (EPP) at the DTE Electric Company - Enrico Fermi Unit 2 Power Plant (Fermi 2). This report is due prior to May 1 of each year and meets the requirements specified in Section 5.4.1 of the Fermi 2 Non-Radiological EPP, which is included in Appendix B of Facility Operating License No. NPF-43.

2.2 Environmental Protection Plan Overview

As part of the application for the nuclear power plant construction permit and operating license, extensive environmental studies were conducted to evaluate potential non-radiological environmental risks that could result from the construction and operation of Fermi 2. In August 1981, the NRC published the Final Environmental Statement (FES) for the operation of Fermi 2. The FES was developed pursuant to the guidelines of the National Environmental Policy Act of 1969 (NEPA) and Title 10 of the Code of Federal Regulations (CFR), Part 51.

The EPP was prepared, based on the potential environmental risks and monitoring requirements identified in the FES. The purpose of the EPP is to provide for the protection of the environment during any additional construction and the continued operation of Fermi 2. The principle objectives of the EPP are as follows:

1. Verify that Fermi 2 is operated in an environmentally acceptable manner, as established by the FES and Environmental Impact assessments.

2. Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

3. Keep the NRC informed of the environmental effects of facility construction and operation, and of actions taken to control those effects.

The components of the EPP are as follows:

1. A terrestrial monitoring program to detect long-term or sudden changes in vegetation that may be attributable to the dispersion of Fermi 2 cooling tower vapor. The terrestrial monitoring program was completed in 1994, after 4 successive monitoring cycles were completed, as required.

2. A program to establish the controlled use of herbicides within transmission rights-of-way.

3. A program to ensure that changes to Fermi 2 design or operation and potential tests or experiments are adequately reviewed prior to implementation to avoid adverse environmental impacts not previously evaluated. Changes in plant design, operation, tests or experiments which do not affect the environment, or which are required to achieve compliance with other Federal, State or local environmental regulations, are not subject to the requirements of this EPP.

4. Routine monitoring for evidence of unusual or important environmental events.

5. Any changes, renewals or stayed appeals to the Fermi 2 National Pollution Discharge Elimination System (NPDES) Permit, or the State certification, must be reported to the NRC within 30 days.

2.3 Annual Report Objectives

According to Section 5.4.1 of the EPP, the required objectives of the Annual Report are as follows:

- Provide summaries and analyses of the results of environmental protection activities conducted in the following areas: unusual or important environmental events and terrestrial monitoring (includes aerial remote sensing and herbicide application). Where applicable, the report should compare these activities to pre-operational studies, operational controls, observed environmental impacts, and previous non-radiological environmental monitoring reports. Provide detailed data analysis and a proposed course of action if harmful effects or evidence of trends towards irreversible damage to the environment are identified.

- Describe any changes to the Fermi 2 design, operation, testing or experimentation that were implemented without adequate review that adversely impacted, or could have adversely impacted, the environment, in accordance with Section 3.1 of the EPP.

- Describe any non-compliance with the EPP and the corrective actions taken to correct the non-compliances.

- Describe any non-routine reports submitted to the NRC as the result of an unusual or important environmental event, in accordance with Section 5.4.2 of the EPP.

2.4 Site Description

DTE Electric Company operates Fermi 2, which is a 3,486 megawatt (gross) thermal General Electric Boiling Water Reactor 4 Nuclear Power Plant. The Fermi 2 power block is situated in the northeast quarter of a 1,260-acre site that is located approximately 6 miles east-northeast of Monroe, Michigan and 30 miles southwest of Detroit, Michigan. The site is fenced with locked gates or gates that are guarded at the discretion of Fermi 2 Security.

The Enrico Fermi 1 Power Plant (Fermi 1) is on the site as well. Fermi 1 was an experimental fast breeder reactor that is presently in a SAFSTOR condition. Subsequent to shut down in 1972, an oil-fired boiler was constructed. Operation of this boiler ceased in 1980 and it was removed from site in 1999.

Contiguous to the site are four oil-fired combustion turbine generators (CTGs), which are periodically operated during periods of high electricity demand as well as during required testing.

The site is bounded on the north by Swan Creek, on the east by Lake Erie, on the south by Pointe Aux Peaux Road, and on the west by a private road owned by DTE Energy. The northern and southern areas of the site are dominated by large lagoons. The western side of the site is predominately covered by several wood lots and a series of small quarry lakes. Site elevation ranges from approximately 25 feet above lake level on the western edge of the site to lake level on the eastern edge.

Per a Cooperative Agreement between DTE Electric Company and the U.S. Fish and Wildlife Service (FWS), the Lagoona Beach Unit of the Detroit River International Wildlife Refuge has been located on site since September 2003.

3.0 TERRESTRIAL MONITORING

Overview

Section 4.2.1 of the Fermi 2 EPP required that a special surveillance program be conducted to evaluate changes to vegetative communities within a 1 kilometer radius of the cooling towers. This program involved analysis of low altitude over flights prior to harvest utilizing color infrared photography, backed up by field reconnaissance inspections to verify areas of vegetative stress and non-stress along with soil sampling and analysis. The first flights and report were required after one year of plant operation and then every alternate year for 3 successive periods.

It should be noted that the above-described studies were not conducted to assess radiological impacts to the terrestrial environment, because discharge from the cooling towers is not radiologically active.

Activities and Controls

The final required aerial photographic events were performed in 1994 and a final terrestrial monitoring report summarizing all collected data was completed in April 1995.

The report concluded the following:

- No long-term accumulation of dissolved solid deposition was detected in any of the soil samples collected within the survey area.

- No vegetative stress associated with cooling tower emission was observed in any of the survey reports.

- No correlation was observed between the distribution of stressed vegetation areas and the calculated deposition of dissolved solids and other materials contained within the vaporous cooling tower discharge.

- The absence of observed impacts attributable to the cooling towers is consistent with findings in the scientific literature.

Terrestrial monitoring was conducted in 2008 to support the licensing of a new unit at the site and is detailed in the Combined Operating License Application (COLA) for Fermi 3 which was submitted to the NRC on September 18, 2008. No terrestrial monitoring activities were conducted, or required, under the Fermi 2 Operating License in 2025. Based on the findings and conclusions presented in the 1995 report, no further aerial photographic evaluations are planned.

4.0 HERBICIDE MONITORING

Overview

Section 4.2.2 of the Fermi 2 EPP requires that herbicide use meet the following conditions:

1. Herbicides used must be registered by the United States Environmental Protection Agency (EPA) and utilized in accordance with EPA approved use instructions.

2. Herbicides used must be approved by State authorities and applied in accordance with state instructions.

Records of herbicide use within the corridor rights-of-way must be maintained for a period of 5 years and contain the following information: commercial and chemical names of herbicide used; concentration of active material in formulations diluted for field use; diluting substances other than water; rates of application; total pounds used; method and frequency of application; location; and date of application.

Activities and Controls

The herbicide application program, detailed in a conduct manual, is designed to maintain records for herbicide application on-site but does not impose requirements on the application of herbicides within the transmission corridor rights-of-way outside of the Owner Controlled Area. The transmission infrastructure is currently owned and operated by ITC Transmission.

Records pertaining to the application of herbicides within the rights-of-way are obtained annually from ITC Transmission. These records include extensive mapping of the Wayne-Monroe and Brownstown-Fermi transmission corridors showing location and method for herbicide application. Data regarding commercial and chemical names of herbicide used, concentration of active material in formulations diluted for field use, diluting substances other than water, rates of application, method and frequency of application, location and surface area treated, and location and date of application are provided. The total pounds used of each herbicide are then calculated based upon the information provided.

ITC vegetation managers confirmed that in 2025 ITC applied herbicide to 137.88 acres in the Brownstown-Fermi corridor and 559.03 acres in the Wayne-Monroe corridor.

5.0 AQUATIC MONITORING

Overview

According to Section 2.1 of the EPP, the NRC will rely on the Michigan Department of Environment, Great Lakes and Energy (EGLE) for the protection of the aquatic environment from non-radiological operational impacts via the National Pollution Discharge Elimination System (NPDES) Permit. NPDES permits are issued in accordance with provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq.), Michigan Act 451, P.A. of 1994, as amended, Part 31, and Michigan Executive Orders 1991-31, 1995-4 and 1995-18.

Activities and Controls

Fermi 2 Chemistry Department closely monitors effluent characteristics per the NPDES requirements. Effluent discharge data are summarized in monthly Discharge Monitoring Reports, which are then submitted to the Michigan Department of Environment, Great Lakes and Energy (EGLE).

NPDES Permit Changes

Fermi 2 has been operating under permit number MI00378028 that was renewed June 28, 2024 and became effective July 1, 2024. A minor permit revision completed by EGLE was issued on November 27, 2024 and became effective on December 1, 2024. As required by Section 3.2 of the EPP, the NRC was notified of the renewal within 30 days following the date of the renewal (See NRC-24-0046 Approval of the National Pollutant

Discharge Elimination System Permit Application for Reissuance, Dated July 25, 2024 and NRC-24-0072, Revised Approval of the National Pollutant Discharge Elimination System Permit Application for Reissuance, dated December 16, 2024). The renewed NPDES permit had the following changes to Outfall 001: increased reporting frequency of Phosphorus from quarterly to monthly, added monthly chloride and sulfate monitoring, included a monthly average thermal discharge limit and annual C. dubia and fathead minnow testing (acute and chronic). Monitoring for these new permit conditions began July 1, 2024.

There were no changes to NPDES MI00378028 in 2025.

NPDES Non-compliances in 2025

There was one instance of non-compliance with Fermi 2 NPDES permit in 2025, which included 2 findings.

An EGLE inspector was on site April 22, 2025 to perform a routine site inspection of site NPDES compliance. 1 finding was identified during the inspection and 1 finding was identified during a subsequent review of monthly Discharge Monitoring Reports (DMR).

Finding #1 – Inadequate test method used for temperature monitoring provided to EGLE staff. The information was not noted in the records provided. This is a violation of Part II.B.2 of the Permit because WRD staff was unable to determine compliance with 40 Code of Federal Regulations (CFR) Part 136.

Finding #2 – Nine recording result violations were discovered during a records review of monthly DMRs dating back to July 2024 to April 2025.

On October 31, 2025 DTE provided a written response to EGLE confirming all violations identified were rectified.

6.0 ENVIRONMENTAL PROTECTION PLAN NON-COMPLIANCES

Overview

In accordance with Section 5.4.1 of the EPP, all occurrences of non-compliance with the EPP must be reported along with a discussion of actions taken to correct the situation.

Activities and Controls

No incidents of EPP noncompliance occurred at Fermi 2 in 2025.

7.0 DESIGN OR OPERATION CHANGES

Overview

In accordance with the Fermi 2 EPP, before engaging in additional construction or operational activities, which might affect the environment, Fermi 2 is required to prepare and record an environmental evaluation of such activity. If the evaluation should indicate that the proposed activity involves an un-reviewed environmental question, DTE Electric Company must provide a written evaluation of the activity and obtain prior approval from the Director, Office of Nuclear Reactor Regulation. Activities are excluded from this requirement if all measurable, non-radiological effects are confined to the on-site areas previously disturbed during site preparation and plant construction.

Activities and Controls

During the period covered by this report, there were no changes to station design or operational activities that created an un-reviewed environmental question per the requirements of the EPP.

8.0 UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS

Overview

According to Section 4.1 of the EPP, any unusual occurrence or important event which indicates, or could result in, significant environmental impact causally related to plant operation must be reported to the NRC within 24 hours, followed by a written report within 30 days.

The following are considered examples of unusual or important environmental events:

- Excessive bird impacts
- On-site plant or animal disease outbreaks
- Mortality or unusual occurrence of any species protected by the Endangered Species Act
- Fish kills
- Increase in nuisance organisms or conditions

Activities and Controls

No unusual or important environmental events occurred during 2025. Accordingly, no non-routine reports were submitted.

9.0 CONCLUSIONS

In 2025, DTE Electric Company - Fermi 2 successfully maintained compliance with the EPP.