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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Annual Non-Radiological Environmental Operating Report

Pursuant to Section 5.4.1 of the Environmental Protection Plan, enclosed is the 2005 Annual Non-Radiological Environmental Operating Report for Fermi 2.

Should you have any questions regarding this report, please contact Gregory Mulleavy, Supervisor, Chemical Engineering, at (734) 586-5039.

Sincerely,

A handwritten signature in black ink that reads "Donald K. Cobb". The signature is written in a cursive, somewhat stylized font.

Enclosure

cc: D. H. Jaffe
T. J. Kozak
NRC Resident Office
Regional Administrator, Region III
Supervisor, Electric Operators,
Michigan Public Service Commission

JE25



2005 Annual Nonradiological Environmental Operating Report

Detroit Edison - Fermi 2
6400 North Dixie Highway
Newport, MI 48166

Reporting Period:

January 1, 2005 to December 31, 2005

Prepared by:

Fermi 2
Environmental Health
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2005 ANNUAL NONRADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

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2005 ANNUAL NONRADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

1.0 EXECUTIVE SUMMARY

The following is a brief summary of the 2005 Annual Nonradiological Environmental Operating Report for the Detroit Edison Enrico Fermi Unit 2 Power Plant (Fermi 2):

- No terrestrial monitoring activities were conducted, or required. Based on the findings of the terrestrial monitoring program, which was concluded in 1994, no further aerial-photographic evaluations are planned.
- Seven herbicides were approved for use and four were utilized on site. It was determined that one herbicide, Hyvar XL, was inadvertently over applied by a certified applicator due to improper calibration of the equipment used. This was not a reportable event. All other herbicides were applied within the parameters of site procedures, and the applications were in compliance with State and Federal requirements.
- 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.
- No noncompliances with the Fermi 2 National Pollutant Discharge Elimination System (NPDES) Permit occurred in 2005.
- The site's new NPDES permit was issued in September 2005 and became effective in January 2006.

2005 ANNUAL NONRADIOLOGICAL 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 Nonradiological Environmental Protection Program (EPP) at the Detroit Edison 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 Nonradiological Environmental Protection Plan (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 nonradiological 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.
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 nonradiological 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 noncompliances with the EPP and the corrective actions taken to correct the noncompliances.

- Describe any nonroutine 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

Fermi 2 operates a 1,217 megawatt (gross) electrical General Electric Boiling Water Reactor 4 Nuclear Power Plant. The Fermi 2 power block is situated in the northeast quarter of a 1,120-acre site that is located approximately 8 miles east-northeast of Monroe, Michigan and 20 miles southwest of Detroit, Michigan. The site is fenced with locked or guarded gates.

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 and is currently undergoing decommissioning. Subsequent to shut down, 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. Also, there is an emergency backup diesel generator for the site's station blackout (SBO) combustion turbine generator (CTG-11-1), located adjacent to the combustion turbine generators. In addition, five 2-megawatt SBO diesel generators are being installed in this area to eventually take the place of CTG-11-1. It is expected that the new SBO diesel generators will be operational in 2007.

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 Detroit Edison. 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 Detroit Edison and the U.S. Fish and Wildlife Service (FWS), the Lagoon Beach Unit of the Detroit River International Wildlife Refuge has been located on site since September 2003. Fermi, in collaboration with FWS, Ducks Unlimited, and other organizations, was awarded a North American Wetlands Conservation Act grant for the restoration of approximately 40 acres of wetlands on site. In 2005, Fermi and FWS began converting the refuge land under the site's transmission lines into coastal prairie. This project will benefit the site two-fold: native habitat of a type not currently found on site will be established and the prairie will also be a cost-saving measure as tree-cutting maintenance under the lines in those areas will be eliminated. Fermi and FWS personnel also began installing FWS "Blue Goose" signs around the lagoon beach unit's boundaries.

3.0 TERRESTRIAL MONITORING

Overview

Section 4.2.1 of the Fermi 2 EPP requires that a special surveillance program be conducted to evaluate changes to vegetative communities within a 1 kilometer radius of the cooling towers. This program involves analysis of low altitude overflights prior to harvest utilizing color infrared photography, backed up by field reconnaissance inspections to verify areas of vegetative stress and nonstress 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.

No terrestrial monitoring activities were conducted, or required, in 2005. Based on the findings and conclusions of the above-described study, 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.
3. Records of on-site herbicide use 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

Herbicide use on-site is managed in accordance with Section 2.6 of the Chemistry and Environmental Monitoring Conduct Manual, Chapter 6 (MCE06). In accordance with this procedure, all herbicides used on site in 2005 were pre-approved per the Herbicide Application Request Form, which meets the requirements of items 1 and 2 listed above. Once a herbicide is approved, the registered pesticide applicator must fill out a Herbicide Application Record for each application which meets the criteria specified in item 3 listed above.

In 2005, seven different herbicides were approved for use and four were utilized on-site. It was determined that one herbicide, Hyvar XL, was inadvertently over applied by a certified applicator within the security isolation zones, due to improper calibration of the equipment used. This was not reportable to any regulatory agency.

An investigation into the herbicide misapplication showed that herbicide applications were not part of the typical duties of the certified applicator in question. This individual was not as well trained and supervised in the applicator role as other certified herbicide applicators working on site who perform applications routinely. As a corrective measure, the applicator in question voluntarily turned in his applicator card and will no longer be applying herbicides on site. Also, the supervisor of on-site certified herbicide applicators verified that each applicator goes through a calibration process on the application equipment each year and that written calibration documentation will be maintained on these annual calibrations.

All other herbicides were applied within the parameters of site procedures, and the applications were in compliance with State and Federal requirements.

5.0 AQUATIC MONITORING

Overview

According to Section 2.1 of the EPP, the NRC will rely on the Michigan Department of Environmental Quality (MDEQ) for the protection of the aquatic environment from nonradiological 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 MDEQ.

NPDES Permit Changes

Fermi 2 applied for renewal of its NPDES Permit on March 31, 2004. The site continued to operate under the old permit throughout 2005. The new permit was issued by the MDEQ on September 30, 2005; however, it did not become effective until January 1, 2006.

NPDES Noncompliances in 2005

No noncompliances with the Fermi 2 NPDES Permit occurred in 2005.

6.0 ENVIRONMENTAL PROTECTION PLAN NONCOMPLIANCES

Overview

In accordance with Section 5.4.1 of the EPP, all occurrences of noncompliance 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 2005.

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 unreviewed environmental question, Detroit Edison 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, nonradiological 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 unreviewed 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 2005. Accordingly, no nonroutine reports were submitted.

9.0 CONCLUSIONS

In 2005, the environmental health program at Fermi 2 successfully maintained compliance with the EPP and all applicable environmental regulations with the exception of an over application of herbicide due to improper calibration of equipment. This event was not reportable to any regulatory agency and no significant environmental impact occurred as a result of this event.