William T. O'Connor, Jr.
Vice President, Nuclear Generation

Fermi 2
6400 North Dixie Hwy., Newport, Michigan 48166
Tel: 734.586.6201 Fax: 734.586.4172

**Detroit Edison**

*A DTE Energy Company*

August 26, 2005
NRC-05-0058

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, D.C. 20555

Reference: Enrico Fermi Atomic Power Plant, Unit 1
NRC Docket No. 50-16
NRC License No. DPR-9

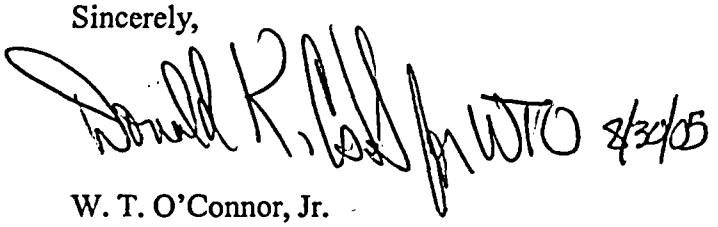
Subject: Enrico Fermi Atomic Power Plant, Unit 1
Annual Report Year Ending June 30, 2005

Pursuant to Section I.8 (Reporting Requirements) of the Technical Specifications for Provisional Operating License No. DPR-9, enclosed is the annual report for the year ending June 30, 2005 for the SAFSTOR Fermi 1 facility.

A020

Should you have any questions, please contact Lynne S. Goodman, Manager, Fermi 1 at 734-586-1205.

Sincerely,



W. T. O'Connor, Jr.
Vice President, Nuclear Generation

WTO/NH/ljd

Enclosure

cc: NRC Regional Administrator, Region III
T. Smith, NRC (Washington, D.C.)
NRC Resident Inspector- Fermi 2
P. Lee, NRC Region III
L. Shekter-Smith (Michigan Dept of Environmental Quality)

**DETROIT EDISON COMPANY**

**ENRICO FERMI ATOMIC POWER PLANT, UNIT 1**

**Docket No. 50-16**
**License No. DPR-9**

**Annual Report for Period**
**July 1, 2004 through June 30, 2005**

*Approved by:* _____ *Date:* 8/25/05

Lynne S. Goodman
Custodian

# ENRICO FERMI ATOMIC POWER PLANT, UNIT 1
# ANNUAL REPORT
# JULY 1, 2004 THROUGH JUNE 30, 2005

## 1.0 PREFACE

This report provides a summary of the activities performed and the results of the facility surveillance program of the Enrico Fermi Atomic Power Plant, Unit 1 Decommissioning Project, during the past twelve (12) months ending June 30, 2005.

In summary, required activities were conducted in accordance with the Operating License and Technical Specifications. Fermi 1 continues decommissioning activities with the removal of contaminated components as well as residual sodium to achieve license termination, and thus reducing any future liability for DTE Energy.

## 2.0 SAFSTOR STATUS

### 2.1 Health Physics

#### 2.1.1 Personnel Exposure

From July 1, 2004, through June 30, 2005, all personnel monitored at Fermi 1 wore Thermoluminescent Dosimeters (TLDs) and wore Direct Reading Dosimeters (DRDs). All visitors were appropriately escorted and wore temporary DRDs as a minimum when entering all Radiological Restricted Areas (RRA).

The accumulative whole body dose, from activities associated with Fermi 1, as measured by TLDs was 525 millirem for this reporting period.

### 2.2 Surveillance Program

#### 2.2.1 Environmental Surveys

No liquid radiological releases occurred during this period; therefore, environmental monitoring samples were not obtained.

#### 2.2.2 Weekly Tests and Inspections

- **General area** --- Walk through and visual inspections were performed as required by Technical Specifications. There were two issues identified with the sump pumps, which were checked more frequently than during the required monthly inspections. The discharge line for sump pump #3 was found frozen. Heat trace and insulation were installed. Sump pump #10 was observed to be not pumping

successfully. Since this pump had been replaced recently, the vendor supplied a replacement for the malfunctioning pump. Other minor issues were addressed.

### 2.2.3 Monthly Inspections

- **Controlled Area Inspections** — Visual inspections were conducted within the specified intervals of the fences, gates, and doors; and the water level in the sump pumps from the top access of all active sumps was surveyed. On one occasion was there a malfunction from one of the sump pumps. Sump pump #10, being used to service the Waste Gas Building basement, was found with a higher than normal water level. During these monthly surveillances, the acceptance criteria were met each month, except on the occasion of the sump pump malfunction.

### 2.2.4 Quarterly Surveillances

- Radiological Surveys --- The Reactor Building and the Fuel and Repair Building (FARB) were checked for presence of gamma radiation and beta, gamma, and alpha contamination. The results of the quarterly contamination surveys indicated general area walkways remain <500-dpm/100 $cm^2$ beta/gamma and <20-dpm/100-$cm^2$ alpha. No changes were observed in radiation or contamination levels.

## 3.0 DECOMMISIONING PROJECT

The Fermi 1 Decommissioning Project continued during this period. Sodium cleanup is discussed below. The transfer rotor container drive mechanism was removed, though its drive shaft could not be disconnected from the fuel pot carousel. It was verified that the rotating shield plug could be rotated with the existing reduction gear assembly. The work requests for removal of the equipment mounted on top of the reactor rotating shield plug (i.e., offset handling mechanism, control rod drive mechanisms, and hold-down mechanism), and the rotating shield plug internals, have been prepared. Removal of the Fuel and Repair Building (FARB) ventilation piping was completed, and other removed equipment was cut to size for future shipment.

Other accomplishments include the inspection of the internals of the Auxiliary Fuel Storage Facility (Equipment Decay Tank (EDT) #2), pulling of the shield plugs from EDT #1, and cutting an access door in the bottom side of EDT #1 to facilitate passing equipment through the operating floor. In addition, power supplies are being setup and cables routed to support energizing the original heaters on the reactor to support future processing of residual sodium inside of the reactor.

Ground water monitoring was conducted during the reporting period, and no licensed material was detected in the ground water. Samples were analyzed for tritium and gross gamma nuclides by Fermi 2 Radiation Protection and Chemistry personnel. An additional well was installed in June 2005 based on analysis of groundwater flow direction.

## 3.1 Sodium Cleanup

Primary sodium cleanup activities continued. The tanks processed in the Inert Gas Building last period have been dried in preparation for disposal. Processing of the Primary Overflow Tank was completed. The tank's contents have been neutralized and the neutralized solution pumped to the primary sodium storage tanks. The reaction chamber used for processing pipe and small equipment that contain residual alkali-metals developed through wall cracks on the bottom of the vessel. This failure was documented in the Corrective Action Program, and the vessel cut-up for disposal. A new reaction chamber was designed, procured, and assembled for use in the Primary Cold Trap Room. The new design incorporates a sacrificial tray where the high temperature chemical reaction will take place versus the original design that allowed the reaction to take place on the bottom of the vessel shell.

Primary loop #1 was separated from the reactor and was setup for processing. Heaters and insulation were added to the outside of the loop #1 intermediate heat exchanger (IHX) to promote draining of any residual sodium remaining in the IHX tube bundle. Primary loops #2 and #3 are also in various stages of being separated from the reactor and having abandoned pipes removed in preparation for processing setup. Removal of small bore piping containing sodium from the Reactor Building lower level continued during this period.

## 3.2 Radiological Surveys

No unexpected radiological conditions were encountered during this reporting period.

## 3.3 Radiological Shipments

During the reporting period one Low Specific Activity (LSA) shipment was sent to Duratek for processing and disposal.

## 4.0 RADIOLOGICAL EFFLUENTS

There were no unmonitored radiological gaseous or particulate effluent releases for the reporting period. There were no particulate releases for the reporting period. All measurable releases were associated with the sodium removal project. The maximum dose to an offsite member of the public from these releases was 5.78E-6 mrem total

effective dose equivalent from tritium. The total amount of tritium released was 1.17E-2 Ci. The gaseous effluent releases were below the Technical Specification air dose limit of 10 mrad of gamma radiation and 20 mrad of beta radiation per year.

## 50.59 EVALUATIONS AND DESIGN CHANGES

### 5.1 10 CFR 50.59

No 10 CFR 50.59 screenings conducted during this period determined that a 50.59 evaluation was required.

### 5.2 Design Changes

There were no formal design changes implemented during this report period. Removal of abandoned systems continued using work request documents per the Fermi 1 Quality Assurance Program.

## 6.0 AUDIT SUBCOMMITTEE

The Audit Subcommittee inspected the physical facility and reviewed the Technical Specification surveillance records twice during the reporting period. No major problems were found.

All audit reports are maintained on file.