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August 27, 2012  
NRC-12-0057

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

- References:
- 1) Enrico Fermi Atomic Power Plant, Unit 1  
NRC Docket No. 50-16  
NRC License No. DPR-9
  - 2) Detroit Edison Letter to USNRC,  
"Enrico Fermi Atomic Power Plant Unit 1  
Fermi 1 Decommissioning Project Schedule and Cost  
Changes", NRC-11-0040, dated August 16, 2011
  - 3) Detroit Edison Letter to USNRC,  
"Update on Fermi 1 Return to Passive SAFSTOR Status",  
NRC-12-0019, dated March 29, 2012

Subject: Enrico Fermi Atomic Power Plant, Unit 1  
Annual Report Period Ending June 30, 2012

Pursuant to Section F.7, Reporting Requirements, of the Technical Specifications for Provisional Operating License No. DPR-9, the annual report for the period ending June 30, 2012 for the SAFSTOR Fermi 1 facility is attached.

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

Sincerely,

A handwritten signature in cursive script that reads "Joseph H. Plona".

Enclosure

USNRC  
NRC-12-0057  
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cc: NRC Regional Administrator, Region III  
T. Smith, NRC (Washington, D.C.)  
NRC Resident Inspector- Fermi 2  
P. Lee, NRC Region III  
Michigan Department of Natural Resources & Environment  
(yalek@michigan.gov)

**DETROIT EDISON COMPANY**  
**ENRICO FERMI ATOMIC POWER PLANT, UNIT 1**

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

**Annual Report for Period**  
**July 1, 2011 through June 30, 2012**

Approved by:  Date: 8/27/12  
Daniel T. Breiding  
Custodian

**ENRICO FERMI ATOMIC POWER PLANT, UNIT 1**  
**ANNUAL REPORT**  
**JULY 1, 2011 THROUGH JUNE 30, 2012**

**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, during the past twelve (12) months ending June 30, 2012.

In summary, required activities were conducted in accordance with the Operating License and Technical Specifications. Fermi 1 performed decommissioning activities with the removal of contaminated components. Detroit Edison has returned Fermi 1 to a passive monitoring SAFSTOR status from the active final decontamination phase of SAFSTOR during this period.

**2.0 SAFSTOR STATUS**

**2.1 Health Physics**

**2.1.1 Personnel Exposure**

From July 1, 2011 through June 30, 2012, all monitored Fermi 1 personnel wore Dosimeters of Legal Record (DLRs). Electronic Dosimeters (EDs) were worn from July 1, 2011 through June 30, 2012 as secondary dosimetry at Fermi 1. All visitors were appropriately escorted and wore EDs, as a minimum, when entering all Fermi 1 Radiologically Restricted Areas (RRA).

The accumulated whole body dose from activities associated with Fermi 1 was 12.862 (REM) for this reporting period. The total dose is based on data from the following:

Over the 2011 – 2012 monitoring period, the DLR used by Radiological Workers at Fermi 1 changed from Thermoluminescent Detectors (TLD) to Optically Stimulated Luminescence (OSL). Furthermore, some Fermi 1 Radiological Workers worked the Fermi 2 spring outage. However, because Fermi 1 dose cannot be differentiated from Fermi 2 dose on DLRs, ED dose assigned to Fermi 1 Radiation Worker Permits was used to determine Fermi 1 dose for the first half of 2012. The source of the total whole body dose, for all Fermi 1 Radiation Workers, is as outlined below.

- 12.738 REM (TLD) July 01, 2011 – December 31, 2011
- 0.121 REM (ED) January 01, 2012 – March 30, 2012
- 0.003 REM (ED) April 01, 2012 – June 30, 2012

## **2.2 Surveillance Program**

### **2.2.1 Environmental Surveys**

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

### **2.2.2 Weekly Tests and Inspections**

General area --- The Fermi 1 staff performed walk through and visual inspections as required by Technical Specifications. No significant issues were identified during the inspections.

### **2.2.3 Monthly Inspections**

Controlled Area Inspections --- During the specified interval, Fermi 1 staff conducted visual inspections of the fences, gates, and doors and surveyed the sump water levels from the top access of all active sumps. No significant issues were identified during the inspections.

### **2.2.4 Quarterly Surveillances**

Radiological Surveys --- The Radiation Protection technicians checked the Reactor Building and the Fuel and Repair Building (FARB) for presence of gamma radiation, as well as beta, gamma, and alpha contamination. There were no unexpected radiation readings detected. The results of the quarterly contamination surveys indicated general area walkways remain <500-dpm/100 cm<sup>2</sup> beta/gamma and <20-dpm/100-cm<sup>2</sup> alpha.

## **3.0 DECOMMISSIONING PROJECT**

The Fermi 1 Decommissioning Project continued during this period including equipment removal and decontamination activities. Details are discussed below.

Based on a review performed last year, Detroit Edison had decided to return to a passive monitoring SAFSTOR status from the active final decontamination phase of SAFSTOR. Selected activities were completed this period prior to returning to passive SAFSTOR. Details are discussed in the 10 CFR 50.82 notification letter (Reference 2 and 3).

The Fermi 1 staff collected groundwater monitoring well samples and no plant related radioactive isotopes were detected above background levels.

The following activities were conducted during this period:

- Completed cutting free the Transition Deck (TD) from Lower Reactor Vessel (LRV) and Transfer Rotor Container (TRC). Removed the LRV, TD and TRC from Reactor Building and shipped off site for disposal.
- Removed remaining graphite shielding from areas on and around reactor.
- Evaporated plant water using drum dryers.
- Removed some abandoned equipment in Reactor Building lower level.

- Performed decontamination of Sodium Tunnel.
- Continued removal of upper portions of Primary Sodium Storage Tanks, cleaned out slag and decontaminated remaining tank “bellies” to reduce contamination levels.
- Neutralized caustic, removed liquid/sludge from and removed/shipped primary sodium 30” lines.
- Processed residual sodium from within stainless steel encased graphite cans from rotating shield plug.
- Decontaminated operating floor surfaces to reduce loose contamination in preparation for return to passive SAFSTOR.
- A “back out checklist” was created for each building/area/room within the EF1 Controlled Area as to how each area would be left as the facility was returned to passive SAFSTOR. With the exception to FARB 1<sup>st</sup> floor general area and FARB trestle way these checklists were completed for each building/area/room.
- Isolated selected areas for which Final Status Surveys had been completed to maintain their status during passive SAFSTOR.

### 3.1 Radiological Surveys

Radiological surveys were conducted in accordance with plant procedures. No unexpected radiological conditions were encountered during this reporting period.

### 3.2 Radiological Shipments

The Fermi 1 team shipped the following materials offsite from Fermi 1 during the reporting period. Tools and equipment shipped to Fermi 2 are not included in this table.

| Shipment Number | Material Description                 | Destination                     | Shipment Category | Activity (mCi) | Volume Gross (ft3) | Weight Gross (lbs) |
|-----------------|--------------------------------------|---------------------------------|-------------------|----------------|--------------------|--------------------|
| EF1-11-012      | Contaminated Laundry                 | Unitech Morris, IL              | LQ                | 7.4E00         | 295                | 6000               |
| EF1-11-013      | Contaminated Laundry                 | UniTech, Morris IL              | LQ                | 5.92E00        | 236                | 4800               |
| EF1-11-014      | Graphite Samples                     | GEL Laboratories, Charleston SC | Exempt            | Exempt         | 0.5                | 15                 |
| EF1-11-015      | Contaminated Laundry                 | UniTech, Morris IL              | LQ                | 8.88E00        | 354                | 7200               |
| EF1-11-016      | Contaminated Laundry                 | UniTech, Morris IL              | LQ                | 5.92E00        | 236                | 4800               |
| EF1-11-017      | DAW/Metal Waste/Pipes/Asbestos Waste | Energy Solutions BWF, Clive UT  | LSA               | 1.91E+02       | 4830               | 189000             |

| Shipment Number | Material Description   | Destination                     | Shipment Category | Activity (mCi) | Volume Gross (ft3) | Weight Gross (lbs) |
|-----------------|--|---------------------------------|-------------------|----------------|--------------------|--------------------|
| EF1-11-018      | DAW/Metal/Sand/PCB Bulk Product Waste                              | Energy Solutions BWF, Clive UT  | LSA               | 1.24E+01       | 690                | 31500              |
| EF1-11-019      | Contaminated Laundry   | UniTech, Morris IL              | LQ                | 7.40E00        | 295                | 6000               |
| EF1-11-020      | Reactor Vessel Transition Deck                                     | Energy Solutions BWF, Clive UT  | LSA               | 1.17E+04       | 6275               | 267970             |
| EF1-11-021      | Lower Reactor Vessel   | Energy Solutions BWF, Clive UT  | LSA               | 7.98E+04       | 1144               | 336500             |
| EF1-12-001      | Contaminated Laundry   | UniTech, Morris IL              | LQ                | 1.48E+01       | 620                | 12000              |
| EF1-12-002      | Oil Samples  | GEL Laboratories, Charleston SC | Exempt            | Exempt         | 250 ml             | 5                  |
| EF1-12-003      | 20' sealand of equipment   | EnergySolutions Memphis, TN     | LQ                | 4.89 E00       | 1560               | 21400              |
| EF1-12-004      | Transfer Rotor Container w/portion of Transition Deck and asbestos | EnergySolutions BWF, Clive UT   | LSA               | 1.93E+02       | 4000               | 118500             |
| EF1-12-005      | Glycol Sample  | GEL Laboratories, Charleston SC | Exempt            | Exempt         | 2 liters           | 5                  |
| EF1-12-006      | 6 Empty laundry boxes and 1 box with respirators                   | UniTech, Morris IL              | LQ & Empty        | 1.18 E00       | 413                | 3790               |

BWF – Bulk Waste Facility  
 DAW – Dry Active Waste

#### **4.0 RADIOLOGICAL EFFLUENTS**

There were no unplanned radiological gaseous effluent releases during the reporting period. All measurable releases were associated with the decommissioning project. The maximum dose to an offsite member of the public from these releases was  $7.56E-07$  mrem Total Effective Dose Equivalent (TEDE) derived from a total of  $1.54E03$  uCi (micro curies) of tritium. 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. The individual dose calculated due to gaseous effluent releases was below the Technical Specification dose limit of 5 mrem TEDE.

#### **5.0 50.59 EVALUATIONS, DESIGN CHANGES AND LER's**

##### **5.1 10 CFR 50.59**

There were no 10 CFR 50.59 evaluations performed during this period. Screenings determined that 50.59 evaluations were not required.

##### **5.2 Design Changes**

There were no Design Changes during this reporting period.

##### **5.3 Licensee Event Reports**

There were no Licensee Event Reports during this reporting period.

#### **6.0 AUDIT SUBCOMMITTEE**

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

All audit reports are maintained on file.