

THE DETROIT EDISON COMPANY

Enrico Fermi Unit I Decommissioned

Atomic Power Plant

Docket No. 50-16

License No. DPR-9

Report for

year beginning July 1, 1980 and ending June 30, 1981

EF-127

Prepared by: William G. Harrison Date: 7-14-81
William G. Harrison
Custodial Delegate

Approved by: Edward P. Griffing Date: 7/16/81
Edward P. Griffing
Custodian

Approved by: Eldon L. Alexanderson Date: 7/17/81
Eldon L. Alexanderson
Chairman, Review Committee

TABLE OF CONTENTS

	Page
I. PREFACE.....	1
II. RETIREMENT STATUS.....	1
Primary System.....	1
Primary Sodium Storage.....	1
Administrative and Surveillance Procedures.....	2
III. HEALTH PHYSICS.....	2
Personnel Exposure.....	2
Environmental Surveys.....	3
IV. PERIODIC TEST ACTIVITIES.....	3
Weekly Tests and Inspections.....	3
Monthly Inspections.....	3
Quarterly Tests.....	4
Semi-Annual Tests.....	4
Annual Tests.....	6
V. REVIEW COMMITTEE.....	6
Members of Review Committee.....	6
Audit Subcommittee.....	6
VI. NOTEWORTHY ITEMS.....	7
Health Physics Building.....	7
Lower Reactor Building.....	7
(LRB) Water Intrusion Alarm.....	7
Fuel and Repair Building (FARB).....	7
Hot Sump Pump.....	7
Fire Fighting Equipment.....	7
Site Improvements.....	7

I

PREFACE

This annual report is issued by The Detroit Edison Company in compliance with the provisions of the United States Nuclear Regulatory Commission, Provisional Operating License No. DPR-9, as amended, and is intended to provide a summary of the status and events at the decommissioned Enrico Fermi Atomic Power Plant during the past twelve months.

II

RETIREMENT STATUS

Primary System

The primary system, established during decommissioning, and consisting of the reactor vessel, primary sodium piping, primary shield tank, machinery dome, primary sodium service system and secondary sodium system extending out to welded pipe caps remains blanketed with carbon dioxide. This was done to provide a passivating atmosphere for any sodium that remains. A continuous supply of carbon dioxide maintains this cover gas at approximately 2 inches of water column pressure.

Primary Sodium Storage

There has been no change in sodium inventory from the previous annual report (EF-126), dated June 30, 1980. Periodic inspections for evidence of sodium leakage were performed in accordance with Technical Specifications and described in Section IV of this report.

Administrative and Surveillance Procedures

Revision II to the Administrative and Surveillance Procedures Manual was prepared during the year for approval at the 1981 Annual Review Committee meeting.

Need for this revision was brought about by the dismantling of the Health Physics Building in the Fall of 1980, which necessitated changing the location of the Personnel Radiation Monitoring Station from the Health Physics Building to the inside S.W. corner of the Fuel and Repair Building.

Section VI of the Administrative and Surveillance Procedures dealing with radiological water, sediment and smear survey analysis was changed to reflect the current established procedures allowing the Enrico Fermi II Radchem section to perform all analyses testing for the decommissioned facility.

Section VII of the Administrative and Surveillance Procedures was revised reflecting the appointment of E. P. Griffing to the position of Enrico Fermi II Plant Superintendent and custodian of decommissioned Fermi I facility replacing W. W. White.

III

HEALTH PHYSICS

Personnel Exposure

There are twenty (20) thermoluminescent dosimeters processed monthly. Records indicate two (2) exposures greater than 10 mREM. The exposures were 20 and 42 mREM.

Environmental Surveys

A total of twenty (20) environmental sample analyses of raw surface water, raw city water and sediment were reported during this period. Sample analyses covered the period from June, 1980 through June, 1981. The results of these samples were within the normal range experienced in the past. These values are given in the Periodic Test Activities, Section IV.

IV

Periodic Test Activities

Weekly Tests and Inspections

1. Water Intrusion Alarm - Continuity tests of the water intrusion alarm circuits for FARB, lower Reactor Building and biological shield wall areas, were conducted as required by Technical Specification. One repair was made following a malfunction detected by a weekly test.
2. Sodium - Storage tanks and drums of frozen sodium stored in the Reactor Building were inspected for evidence of leakage. Weekly inspections revealed no leakage or discrepancies.

Monthly Inspections

1. Controlled Area Inspections - Visual inspection of fence, gates, doors (locked), operation of sump pump and liquid level of MK-15 in the FARB were conducted within specified intervals. No discrepancies were found during this reporting period.

Quarterly Tests

1. Smear Surveys - The Reactor Building and FARB were checked for presence of gamma radiation and transferable contamination. The results of these smear surveys indicated no decontamination procedures were required.

Typical Smear Test Values in DPM/ft²

Reactor Building

<u>Date</u>	<u>High</u>	<u>Low</u>	<u>Avg.</u>
7/24/80	99	<3.6	15
10/28/80	500	<10	110
1/07/81	550	<10	160
5/07/81	500	<10	180

Fuel & Repair Building

<u>Date</u>	<u>High</u>	<u>Low</u>	<u>Avg.</u>
7/24/80	8	<3.6	<3.6
10/28/80	350	<10	90
1/07/81	500	<10	140
5/07/81	550	<10	170

Semi-Annual Tests

Water Intrusion Alarms - Both of the required semi-annual functional tests of the water intrusion detectors in the FARB, lower Reactor Building and biological shield wall were successfully conducted; one on 7/24/80 and the other on 1/4/81.

Raw Water Gross Beta Activity uCi/ml

<u>Location</u>	<u>10/28/80*</u>	<u>5/7/81**</u>
Reactor Channel	$3.1 \pm 1.3 \times 10^{-9}$	$<4.0 \times 10^{-8}$
Swan Creek	$3.2 \pm 1.5 \times 10^{-9}$	$<4.0 \times 10^{-8}$
Detroit City Water	$2.6 \pm 1.2 \times 10^{-9}$	$<4.0 \times 10^{-8}$
Monroe City Water	$4.0 \pm 1.4 \times 10^{-9}$	$<4.0 \times 10^{-8}$
Lake Erie	$4.1 \pm 1.3 \times 10^{-9}$	$<4.0 \times 10^{-8}$
South Lagoon	$2.8 \pm 1.3 \times 10^{-9}$	$<4.0 \times 10^{-8}$

Sediment Samples Gamma Activity uCi/dry gram

<u>10/28/80*</u>	<u>Cs¹³⁷</u>	<u>Ra²²⁶</u>	<u>K⁴⁰</u>
Reactor Channel	$<6 \times 10^{-8}$	6.4×10^{-7}	6.8×10^{-6}
Swan Creek	4.2×10^{-7}	1.6×10^{-6}	1.6×10^{-5}
South Lagoon	3.1×10^{-7}	1.8×10^{-6}	1.6×10^{-5}
<u>5/7/81**</u>	<u>Cs¹³⁷</u>	<u>Ra²²⁶</u>	<u>K⁴⁰</u>
Reactor Channel (outfall)	1.9×10^{-8}	2.2×10^{-7}	4.9×10^{-6}
Swan Creek	3.7×10^{-7}	1.1×10^{-6}	2.2×10^{-5}
South Lagoon	6.6×10^{-9}	6.9×10^{-7}	4.2×10^{-6}

The above results are similar to past results indicating no influence from the plant.

Carbon Dioxide Cover Gas Pressure

The semi-annual test of the Hi and Lo Pressure alarm settings were successfully completed on 7/11/80 and 1/19/81. Setpoints were within the limits established and no adjustments were required.

*NUS Corp. Analysis

**Detroit Edison Company Analysis

Annual Tests

Carbon Dioxide Cover Gas Pressure Relief Valve

The annual test of the carbon dioxide cover gas pressure relief valve setting was successfully completed on 6/19/81. The relief actuation pressure less than 5 PSIG was verified.

V

Review Committee

Members of the Review Committee

E. L. Alexanderson - Chairman
E. P. Griffing - Custodian
G. W. Bethke
W. G. Harrison
P. J. Lavelly
J. E. Meyers
M. A. Nelson
E. H. Newton
E. M. Page
R. G. Rateick

The Committee met on July 29, 1980. Formal minutes of these meetings are on file.

Audit Subcommittee

Present members of the Audit Subcommittee are: Mr. E. M. Page and Mr. R. G. Rateick. The Subcommittee met at the facility on December 18, 1980, January 2, 1981, June 11, 1981 and July 2, 1981 for inspection of the facility and review of records and procedures. Memorandums containing their findings are on file. The Review Committee will discuss the findings of the Audit Subcommittee in their regular annual meeting required to be convened between June 30, 1980 and August 31, 1981.

VI

Noteworthy Items

Health Physics Building

The Health Physics Building was dismantled in October 1980. The Building Foundation slab was left intact. All associated liquid radioactive waste drain lines were permanently plugged and marked. (Detailed prints are on file).

Lower Reactor Building (LRB) Water Intrusion Alarm

The LRB Water Intrusion Alarm failed in the test mode July 6, 1980. The affected area was checked and found dry. Instrument Department personnel made a sensitivity adjustment and rechecked for proper operation.

Fuel and Repair Building (FARB) Hot Sump Pump

In February 1981 surfacewater entered the west below grade wall of the FARB around a pipe penetration sleeve and hence, to the lower level floor drains.

The remaining hot sump pump also failed at this time. A portable electric submersible pump was installed to maintain the hot sump level. As a result of the water intrusion the M-15 holding tank level increased from 46 to 60 inches. Repairs were made to the penetration sleeve. The M-15 tank level has not changed since.

Fire Fighting Equipment

Six CO₂ and seven ansul metal-x fire extinguishers in the protected area were tested and refilled.

Site Improvement

The embankment outside the west end of the Fuel and Repair Building was shored up and covered with four inch thick rip rap to prevent future erosion.