

Detroit Edison



March 22, 2000
NRC-00-0014

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

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

Subject: 1999 Annual Reports for Fermi 2

Improved Technical Specifications (ITS) were implemented at Fermi 2 on October 31, 1999. Prior to ITS implementation, an annual operating report covering the activities of the unit for the previous calendar year was required to be submitted prior to March 1 of each year. The information contained in the annual report included Technical Specification required items such as the occupational radiation exposure history, main steam relief valve challenges, summary of Emergency Core Cooling System (ECCS) outage data, and specific activity analysis of the primary coolant.

Although ITS no longer requires submittal of all of the information identified above in an annual operating report, ITS does contain requirements for submitting a report for occupational radiation exposure (Technical Specification 5.6.1) and safety relief valve challenges (Technical Specification 5.6.6). Both reports shall be submitted by April 30 of each year. Enclosures A and B are provided in accordance with Technical Specification 5.6.1 and 5.6.6 to meet these requirements.

Enclosure C is attached containing a report on service life of the main steam bypass line. This satisfies the commitment stated in a Detroit Edison letter to the NRC dated November 7, 1986 [VP-86-0154].

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Enclosure D is attached in accordance with 10 CFR 50.46(a)(3)(ii) and contains a report on Emergency Core Cooling System (ECCS) cooling performance evaluation model changes or errors.

Should you have any questions or require additional information, please contact me at (734) 586-4258.

Sincerely,



Norman K. Peterson
Director - Nuclear Licensing

Enclosure A: Occupational Radiation Exposure Report
Enclosure B: Safety Relief Valve Challenge Report
Enclosure C: Service Life of Main Steam Bypass Line
Enclosure D: ECCS Cooling Performance Evaluation Model Changes or Errors

cc: J. Dyer
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NRC Resident Office

FERMI 2

OCCUPATIONAL RADIATION EXPOSURE REPORT

JANUARY 1 - DECEMBER 31, 1999

DETROIT EDISON COMPANY

NRC DOCKET NO. 50-341

FACILITY OPERATING LICENSE NO. NPF-43

Detroit Edison Fermi 2
1999 Regulatory Guide 1.16 Direct Reading Dosimeter (DRD) Deep Dose Equivalent (DDE) Dose Report

Function	Department	Personnel Receiving Exposure			DRD DDE Manrem		
		Station Employees	Utility Employees	Contract Workers	Station Employees	Utility Employees	Contract Workers
Plant	Maintenance	138	6	71	8.406	0.058	0.145
Operations	Operations	94	1	23	3.853	0.002	2.104
	Health Physics	47	0	4	5.24	0	0.287
	Supervisory	166	18	209	2.582	0.115	0.398
	Engineering	99	3	11	0.814	0.001	0.018
Reactor	Maintenance	0	0	0	0	0	0
Operations	Operations	0	0	0	0	0	0
	Health Physics	0	0	0	0	0	0
	Supervisory	0	0	0	0	0	0
	Engineering	0	0	1	0	0	0
Reactor	Maintenance	0	0	0	0	0	0
Maintenance	Operations	1	0	0	0.113	0	0
	Health Physics	1	0	0	0.259	0	0
	Supervisory	2	0	1	0.013	0	0.01
	Engineering	0	0	0	0	0	0
Special	Maintenance	25	2	18	4.134	0.065	0.774
Maintenance	Operations	1	0	0	0.01	0	0
	Health Physics	0	0	0	0	0	0
	Supervisory	6	10	36	0.125	0.041	0.299
	Engineering	3	0	3	0.013	0	0.022
Waste	Maintenance	0	0	0	0	0	0
Processing	Operations	2	0	7	0.027	0	0.907
	Health Physics	0	0	0	0	0	0
	Supervisory	4	0	1	0	0	0.01
	Engineering	0	0	1	0	0	0
Refueling	Maintenance	0	0	0	0	0	0
	Operations	0	0	0	0	0	0
	Health Physics	0	0	0	0	0	0
	Supervisory	0	0	0	0	0	0
	Engineering	0	0	0	0	0	0
Total	Maintenance	163	8	89	12.54	0.123	0.919
	Operations	98	1	30	4.003	0.002	3.011
	Health Physics	48	0	4	5.499	0	0.287
	Supervisory	178	28	247	2.72	0.156	0.717
	Engineering	102	3	16	0.827	0.001	0.04
Grand Total		Personnel		1015	Manrem		30.845

NOTE: This report was produced using only secondary (DRD) external dosimetry - it does not include any internal exposure.

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SAFETY RELIEF VALVE CHALLENGE REPORT

JANUARY 1 - DECEMBER 31, 1999

DETROIT EDISON COMPANY

NRC DOCKET NO. 50-341

FACILITY OPERATING LICENSE NO. NPF-43

Safety Relief Valve Challenges

There were no instances in 1999 where reactor pressure was high enough to require Safety Relief Valve (SRV) actuation. There were no instances in 1999 where an SRV actuation was demanded by an automatic logic system. SRVs were manually actuated in 1998 for surveillance/post-maintenance testing following the sixth refueling outage (RFO6) as described below:

<u>Date</u>	<u>Affected SRV</u>	<u>Comments</u>
10/27/98	All	Surveillance Testing/Post Maintenance Testing Following 1998 Refuel Outage. All SRVs lifted on demand.

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SERVICE LIFE OF MAIN STEAM BYPASS LINE

JANUARY 1 - DECEMBER 31, 1999

DETROIT EDISON COMPANY

NRC DOCKET NO. 50-341

FACILITY OPERATING LICENSE NO. NPF-43

Service Life of Main Steam Bypass Line

In accordance with a Detroit Edison letter to the NRC dated November 7, 1986 [VP-86-0154], the cumulative time the main steam bypass lines are operated with the bypass valves between 30 percent and 45 percent open will be reported annually. A cumulative value of 100 days is not to be exceeded without prior NRC notification.

Evaluations performed by Stone and Webster and by Hopper and Associates concluded that the bypass lines are acceptable for safe operation when operated within the 100 day constraint. Based on these evaluations, the new main steam bypass piping that was installed in 1985 has a service life that will allow it to function for the life of the plant under anticipated operating conditions. The main steam bypass lines cumulative usage was 37.4 days as of December 31, 1999.

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ECCS COOLING PERFORMANCE EVALUATION MODEL CHANGES OR ERRORS

JANUARY 1 - DECEMBER 31, 1999

DETROIT EDISON COMPANY

NRC DOCKET NO. 50-341

FACILITY OPERATING LICENSE NO. NPF-43

ECCS Cooling Performance Evaluation Model Changes or Errors

No changes or errors which impact the Fermi 2 licensing basis Peak Cladding Temperature (PCT) were identified in 1999. However, an error was discovered in GE's GESTR-LOCA and SAFER codes used to calculate fuel peak clad temperature (PCT) during a LOCA.

This error is associated with the counter current flow limiting (CCFL) calculation. The SAFER code models CCFL in the upper part of the bundle at the upper tie plate (UTP). The CCFL correlation uses the UTP flow area and a coefficient based on test data to determine the liquid downflow into the bundle. This correlation is based on the original GE6 type fuel. For newer fuel types (i.e. GE8, GE9, GE10 and some Siemens fuel) CCFL occurs at the top spacer due to enlarged UTP flow areas. Therefore, the CCFL constant must be adjusted to account for the difference in flow areas at the spacer and UTP. This was recognized for GE11 and later fuel types but was not applied to GE8, GE9, GE10 and some Siemens fuel types.

As indicated above, this error only applies to GE8, GE9, GE10 and some Siemens fuel. It does not apply to GE11 fuel nor to the original GE6 fuel. Since the Fermi 2 core contains only GE11 fuel, this error has no impact on Fermi 2. Our SAFER/GESTR-LOCA analysis was performed in July of 1991 using GE6, GE8, and GE9 fuel types. An additional analysis was performed in April of 1992 to analyze GE11 fuel. The limiting fuel type was found to be GE6. Therefore, the limiting PCT reported in our UFSAR represents the GE6 fuel, even though GE6 fuel is no longer loaded in the reactor core.

The licensing basis remains as reported to the NRC in Detroit Edison Letter NRC-96-0052, dated May 28, 1996.