

Detroit  
Edison

William S. Orser  
Senior Vice President

Fermi 2  
6400 North Dixie Highway  
Newport, Michigan 48166  
(313) 586-5201



Nuclear  
Operations

April 30, 1992  
NRC-92-0048

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

- References:
- 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43
  - 2) Detroit Edison Letter, NRC-91-0102, "Proposed License Amendment - Upated Power Operation", dated September 24, 1991
  - 3) NRC Letter, dated February 21, 1992, "Fermi-2 - Request for Additional Information Upated Power Operation License Amendment Request (TAC No. M82102)"
  - 4) NRC Letter, dated February 25, 1992, "Fermi-2 - Request for Additional Information Upated Power Operation License Amendment Request (TAC No. M82102)"
  - 5) Detroit Edison Letter, NRC-92-0043, "Detroit Edison Response to NRC Instrumentation and Controls Branch Questions on Fermi 2 Power Upate Submittal", dated March 26, 1992
  - 6) Detroit Edison Letter, NRC-92-0038, "Detroit Edison Response to NRC Mechanical Engineering Branch Questions on Fermi-2 Power Upate Submittal", dated March 23, 1992

Subject: Revision to Proposed License Amendment for Upated Power Operation and to the Fermi 2 Power Upate Safety Analysis (TAC No. M82102)

The purpose of this letter is to provide the NRC Staff with additional Technical Specification (TS) changes necessary for Fermi 2 upated

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power operation and with amendments to the Fermi 2 Power Upate Safety Analysis (PUSA). The power upate license amendment request and the Fermi 2 PUSA were submitted by Reference 2.

This supplemental information is the result of NRC questions on the submittal (References 3 and 4), together with Detroit Edison reviews associated with the NRC questions and implementation of power upate.

Enclosure 1 includes the description and evaluation of the additional TS changes for power upate. These changes involve the Main Steamline Flow Primary Containment Isolation setpoints and the new motor operated valve being added to the Reactor Core Isolation Cooling (RCIC) system.

Enclosure 2, Part 1 and Part 2, is the marked up TS pages for the additional changes and a complete set of the typed proposed Operating License and TS pages, respectively.

Enclosure 3 is the PUSA amendment requested by the NRC staff in Reference 4 and committed to by Detroit Edison in Reference 5. The changes are summarized below:

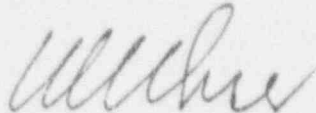
- o Revised Section 3.5 to state that the Reactor Pressure Coolant Boundary (RCPB) piping design will address power upate prior to implementation.
- o Revised Section 5.1.2 to include discussion of the use of the GE instrument setpoint methodology (NEDC-31336) as committed to in Reference 5.
- o Revised Section 10.3 to include performance testing of RCIC and HPCI systems.
- o Revised Section 10.1.1.5 and Table 10-1 to reflect that the RWCU break in the torus room is not a limiting break.
- o Revised Section 11 as appropriate to reflect the additional TS changes described in Enclosure 1.

A substantial portion of Enclosure 3 was provided by General Electric Co. (GE) and is identified as proprietary information. Enclosure 4 provides GE's affidavit to that effect. Therefore, in accordance with 10CFR2.790, it is requested that Enclosure 3 information identified as proprietary be withheld from public disclosure.

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Page #3

Please contact Mr. Terry L. Riley, Supervisor, Nuclear Licensing at (313) 586-1684 to coordinate any further actions on this matter, as needed.

Sincerely,

A handwritten signature in cursive script, appearing to read "T. G. Colburn".

Enclosures

cc: T. G. Colburn  
A. B. Davis  
M. P. Phillips  
S. Stasek

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April 30, 1992  
NRC-92-0048  
Page #4

I, WILLIAM S. ORSER, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

William S. Orser  
WILLIAM S. ORSER  
Senior Vice President

On this 30<sup>th</sup> day of April, 1992, before me personally appeared William S. Orser, being first duly sworn and says that he executed the foregoing as his free act and deed.

Rosalie A. Armetta  
Notary Public

ROSALIE A. ARMETTA  
NOTARY PUBLIC STATE OF MICHIGAN  
MONROE COUNTY  
MY COMMISSION EXPIRES NOV. 20, 1995

GENERAL ELECTRIC COMPANY

AFFIDAVIT

I, David J. Robare, being duly sworn, depose and state as follows:

1. I am Manager, Plant Licensing Services, General Electric Company, and have been delegated the function of reviewing the information described in paragraph 2 which is sought to be withheld and have been authorized to apply for its withholding.
2. The information sought to be withheld is contained in Detroit Edison Report Fermi-2-91-150, Revision 1, "Power Uprate Safety Analysis", April 1992. The GE Proprietary portions of this report are identifiable by the "GE Proprietary Information" designation at the top of the page.
3. In designating material as proprietary, General Electric utilizes the definition of proprietary information and trade secrets set forth in the American Law Institute's Restatement of Torts, Section 757. This definition provides:

"A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business and which gives him an opportunity to obtain an advantage over competitors who do not know or use it...A substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring information...Some factors to be considered in determining whether given information is one's trade secret are (1) the extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and to his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others."

4. Some examples of categories of information which fit into the definition of Proprietary Information are:
  - a. Information that discloses a process, method or apparatus where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;



## GENERAL ELECTRIC COMPANY

- b. Information consisting of supporting data and analyses, including test data, relative to a process, method or apparatus, the application of which provide a competitive economic advantage, e.g., by optimization or improved marketability;
  - c. Information which if used by a competitor, would reduce his expenditures of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality or licensing of a similar product;
  - d. Information which reveals cost or price information, production capacities, budget levels or commercial strategies of General Electric, its customers or suppliers;
  - e. Information which reveals aspects of past, present or future General Electric customer-funded development plans and programs of potential commercial value to General Electric;
  - f. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection;
  - g. Information which General Electric must treat as proprietary according to agreements with other parties.
5. Initial approval of proprietary treatment of a document is typically made by the Subsection Manager of the originating component, the person who is most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within the Company is limited on a "need to know" basis and such documents are clearly identified as proprietary.
6. The procedure for approval of external release of such a document typically requires review by the Subsection Manager, Project Manager, Principal Scientist or other equivalent authority, by the Subsection Manager of the cognizant Marketing function (or delegate) and by the Legal Operation for technical content, competitive effect and determination of the accuracy of the proprietary designation in accordance with the standards enumerated above. Disclosures outside General Electric are generally limited to regulatory bodies, customers and potential customers and their agents, suppliers and licensees then only with appropriate protection by applicable regulatory provisions or proprietary agreements.
7. The document mentioned in paragraph 2 above has been evaluated in accordance with the above criteria and procedures and has been found to contain information which is proprietary and which is customarily held in confidence by General Electric.

## GENERAL ELECTRIC COMPANY

8. The information to the best of my knowledge and belief has consistently been held in confidence by the General Electric Company, no public disclosure has been made, and it is not available in public sources.

All disclosures to third parties have been made pursuant to regulatory provisions of proprietary agreements which provide for maintenance of the information in confidence.

9. Public disclosure of the information sought to be withheld is likely to cause substantial harm to the competitive position of the General Electric Company and deprive or reduce the availability of profit making opportunities because it would provide other parties, including competitors, with valuable information.

GENERAL ELECTRIC COMPANY

STATE OF CALIFORNIA )

COUNTY OF SANTA CLARA )

ss:

David J. Robare, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are truly and correct to the best of his knowledge, information, and belief.

Executed at San Jose, California, this 21<sup>ST</sup> day of APRIL 1992.

*David J. Robare*

David J. Robare  
General Electric Company

Subscribed and sworn before me this 21<sup>st</sup> day of April 1992.



*Paula F. Hussey*  
Notary Public, State of California



Fermi 2  
Proposed License Amendment - Power Uprate  
TAC No. M82102  
Revision 1, April 1992

INSTRUCTIONS

The proposed amendment for operation of Fermi 2 at uprated power level was filed with the NRC on September 27, 1991.

These Revision 1 instructions indicate replacement and additional pages. Please remove the existing pages and insert the replacement and/or additional pages where indicated in the binder originally provided.

<u>LOCATION</u>	<u>REMOVE</u>	<u>INSERT</u>
<u>TAB: Proposed License Amendment</u>		
Following TAB	-	Detroit Edison Letter NRC-92-0048 Pages 1 through 4
	-	Enclosure 1 NRC-92-0048 Pages 1 through 6
Following Enclosure 1 NRC-91-0102 Page 13	Enclosure 2	Enclosure 2 Revision 1, April 1992
	Enclosure 2 - Part 1	Enclosure 2 - Part 1 Revision 1, April 1992
	Technical Specification Page 3/4 3-15	Technical Specification Page 3/4 3-15 Revision 1, April 1992
Following Technical Specification Page 3/4 7-14	-	Technical Specification Page 3/4 7-23 Revision 1, April 1992

# Revision 1 Instructions

## LOCATION

## REMOVE

## INSERT

Following Technical  
Specification  
Page 6-21

Enclosure 2 - Part 2

Enclosure 2 - Part 2  
Revision 1, April 1992

Typed Technical  
Specification  
Pages 3 through 6-21  
(32 pages)

Typed Technical  
Specification  
Pages 3 through 6-21  
(33 pages)

TAB: Power Uprate  
Safety Analysis

Enclosure 3

Enclosure 3  
Revision 1, April 1992

Signature/Proprietary  
Information Notice

Signature/Proprietary  
Information Notice

i/ii (Table of Contents)

i/ii (Table of Contents)

Section 3

3-5/3-6  
3-7/3-8

3-5/3-6  
3-7/3-8

Section 5

5-1/5-2  
through  
5-5/5-6

5-1/5-2  
through  
5-5/5-6

Section 10

10-1/10-2  
through  
10-7/Blank

10-1/10-2  
through  
10-7/Blank

Section 11

11-11/11-12  
through  
11-21/11-22

11-11/11-12  
through  
11-21/11-22

Revision 1 Instructions

LOCATION

REMOVE

INSERT

Following Figure 11-3

Enclosure 4

Enclosure 4  
Revision 1, April 1992

Following Enclosure 4

GE Affidavit  
(2 pages)

William S. Orser  
Senior Vice President

Fermi 2  
6400 North Dixie Highway  
Newport, Michigan 48166  
(313) 586-5201



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power operation and with amendments to the Fermi 2 Power Uprate Safety Analysis (PUSA). The power uprate license amendment request and the Fermi 2 PUSA were submitted by Reference 2.

This supplemental information is the result of NRC questions on the submittal (References 3 and 4), together with Detroit Edison reviews associated with the NRC questions and implementation of power uprate.

Enclosure 1 includes the description and evaluation of the additional TS changes for power uprate. These changes involve the Main Steamline Flow Primary Containment Isolation setpoints and the new motor operated valve being added to the Reactor Core Isolation Cooling (RCIC) system.

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Sincerely,

A handwritten signature in cursive script, appearing to read "W. L. Riley".

Enclosures

cc: T. G. Colburn  
A. B. Davis  
M. P. Phillips  
S. Stasek

USNRC  
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Page #4

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William S. Orser  
WILLIAM S. ORSER  
Senior Vice President

On this 30<sup>th</sup> day of April, 1992, before me personally appeared William S. Orser, being first duly sworn and says that he executed the foregoing as his free act and deed.

Rosalie A. Armetta  
Notary Public

ROSALIE A. ARMETTA  
NOTARY PUBLIC STATE OF MICHIGAN  
MONROE COUNTY  
MY COMMISSION EXP. NOV. 20, 1995

Enclosure 1 to  
NRC-92-0048  
Page 1

ENCLOSURE 1

DESCRIPTION AND EVALUATION  
OF THE PROPOSED TECHNICAL SPECIFICATION CHANGES

REVISION TO PROPOSED TECHNICAL SPECIFICATION PAGES  
FOR UPRATED POWER OPERATION

Introduction

Two changes to the Reference 2 proposed Technical Specification (TS) pages are being made. The first is to provide a corrected Trip Setpoint and Allowable Value for the Main Steam Line Flow-High Primary Containment Isolation Actuation Instrumentation (Table 3.3.2-2 item 1.c.3). The second is to add the Reactor Core Isolation Cooling System warmup bypass valve (E51-F095) to the table of Motor Operated Valves (MOVs) contained in Table 3.8.4.3-1, Motor-Operated Valves Thermal Overload Protection.

Evaluation - Main Steam Line Flow Isolation Actuation Instrumentation

The Trip Setpoint and Allowable Value for the Main Steam Line Flow-High Primary Containment Isolation Actuation Instrumentation is being modified to correct a discrepancy in the assumed fluid density used in the original calculation. This discrepancy was discovered during Detroit Edison's review of General Electric design records.

The new calculation was submitted to the NRC staff with the Reference 5 response to staff questions on instrumentation and controls. This calculation derived the new Trip Setpoint and Allowable Value in accordance with the General Electric Instrument Setpoint Methodology (NEDC-31336).

The current Trip Setpoint and Allowable Value are specified both in terms of differential pressure and percent of rated flow. The specification in terms of percent of rated flow is proposed to be eliminated.

The steam flow instrumentation measures a differential pressure (dp) across a flow restriction in the steam line. Excessive steam flow causes a high dp signal which causes an isolation signal when the dp exceeds the instrument trip setting. The instrumentation does not make a conversion to mass flow rate.

A value listed in terms of percent of rated flow is only equivalent to a dp value under specific steam temperatures and pressures. Under other conditions, the two specified values will represent different mass flow rates. Eliminating the value not actually used in setting the instrumentation will eliminate any potential ambiguity or confusion from the application of the TS.

The dual specifications of the steam flow isolation setpoints for RCIC and the High Pressure Coolant Injection (HPCI) systems were eliminated for similar reasons in Amendment 43 to the Fermi 2 Operating License. Also, the BWR-4 Standard TS only lists a dp value for this function and a dual specification for the Main Steam Flow isolation is not known to exist in other BWR TS.

#### Evaluation -- RCIC Motor Operated Valve

TS 3.8.4.3 requires that the thermal overload protection for MOVs listed in TS Table 3.8.4.3-1 be operable to ensure that the thermal overload protection will not prevent these safety related valves from performing their function. To implement power uprate, a one inch MOV (E51-F095) will be installed around the RCIC steam admission valve (E51-F045). The proposed change adds E51-F095 to the table of safety related valves for which operable thermal overload protection is required by the TS.

The new bypass valve is being added to reduce the chance of a RCIC turbine overspeed trip in accordance with the recommendation of GE Service Information Letter 377. The inclusion of the new bypass valve in the RCIC section of this Table will ensure that safety benefit of the increased RCIC system reliability is not lost due to an inoperable thermal overload protection device.

The original Fermi 2 design included a RCIC warmup bypass valve utilizing a solenoid operated valve. Due to maintainability concerns with this solenoid valve the bypass line was removed from service by blanking the line. Testing had demonstrated that adequate margin between the peak RCIC turbine speed and the RCIC turbine overspeed trip setpoint existed. With the higher steam inlet pressure conditions under uprated power conditions it was determined that the warmup bypass function should be restored.

The desirability of a bypass valve was identified in the Reference 2 submittal. Subsequently, it was determined that for reliability an MOV should be used. As a result of this determination, an additional TS change beyond those identified in Reference 2 is needed.

#### No Significant Hazards Analysis

In accordance with 10CFR50.92, Detroit Edison has made a determination that the proposed amendment involves no significant hazards considerations. To make this determination, Detroit Edison has determined that operation in accordance with the proposed amendment will not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated or 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or 3) involve a significant reduction in a margin of safety.



The proposed change to modify the main steamline flow primary containment isolation actuation setpoint and eliminate the dual specification of the setpoint in terms of percent rated flow does not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The main steamline flow setpoints are changed to reflect the redefinition of rated main steamline flow that accompanies uprated power operation. These limits continue to ensure that an adequate trip avoidance margin is maintained for the normal plant testing of MSIVs and turbine control/stop valves. The setpoints were selected to provide assurance that isolation protection will still be provided for a main steamline break accident. These setpoints have no effect on the probability of the occurrence of a main steamline break. Also, since a high level of assurance of break isolation is maintained, these setpoint changes do not significantly increase the consequences of the main steamline break accident.

The specification of the main steamline flow isolation actuation instrumentation setpoints in terms of percent rated flow is eliminated. The instrumentation is set in accordance with the differential pressure values. The percent rated flow values are informational and the elimination has no effect on the safety analysis. Thus, the change does not significantly affect the probability or consequences of an accident.

- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

The change modifies the main steamline flow primary containment isolation actuation instrumentation to reflect uprated power conditions and to eliminate a dual specification of the setpoint. No new design or operating modes are involved. Therefore, the change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

- 3) Involve a significant reduction in a margin of safety.

The change modifies the instrument setpoint to be consistent with uprated power conditions which has been previously evaluated in Reference 2 and determined to not involve a significant reduction in safety. The elimination of the dual specification of the setpoint is administrative and thus does not affect safety margins.

The proposed change to include the Reactor Core Isolation Cooling warmup bypass valve in TS Table 3.8.4.3-1, Motor-Operated Valve Thermal Overload Protection does not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The inclusion of the RCIC warmup bypass valve in the table for thermal overload protection requirements assures that the thermal overload protection does not impact the valve's function. Since the change acts to increase the RCIC system's reliability it does not result in a significant increase in the probability or consequences of a previously evaluated accident.

- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed modification implements the General Electric Service Information Letter 377 which recommends a one-inch steam inlet bypass valve which reduces the RCIC turbine tendency to overspeed before adequate governor control valve hydraulic oil pressure is achieved from the turbine driven oil pump. This modification will be designed to the same quality standards as the RCIC system.

Line breaks for piping within the RCIC room have been evaluated with satisfactory results and the new MOV meets the same ASME Class II code integrity requirements of the original valve. Other evaluated concerns for electrical design, seismic criteria, operability, and environmental qualification for this modification are in compliance with the system design bases. Based on this compliance and design, there is no creation of a new failure mode or violation of existing failure mode design criteria. The equipment added/modified under this design change does not introduce a failure mechanism that has not been previously evaluated. This will ensure that the possibility of an accident of a new or different type than previously evaluated is not created.

- 3) Involve a significant reduction in a margin of safety.

The proposed change ensures that the function of the new RCIC warmup bypass MOV is not impacted by an inoperable thermal overload protection device. The new valve functions to reduce the peak RCIC turbine speed on startup thus maintaining the margin to the overspeed trip setpoint under uprated power conditions. Therefore, the change does not involve a significant reduction in a margin of safety.

The no significant hazards analysis for power uprate, which is Section 11.4 of the Power Uprate Safety Analysis (PUSA), has been revised to reflect the revised TS proposal. The revisions to PUSA Section 11.4 are included in Enclosure 3 to this submittal.

Based upon the above, Detroit Edison concludes that the revised power uprate amendment does not involve a significant hazards consideration.

#### Environmental Impact

The revision proposed to the power uprate amendment does not affect the environmental evaluation contained in Reference 2. The Reference 2 conclusion that the proposed TS meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements of an Environmental Impact Statement remains valid.

#### Conclusion

Based on the evaluation above: 1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and 2) such activities will be conducted in compliance with the Commission's regulations and proposed amendments will not be inimical to the common defense and security or to the health and safety of the public.

ENCLOSURE 2

PROPOSED OPERATING LICENSE  
AND  
TECHNICAL SPECIFICATION CHANGES

ENCLOSURE 2 - PART 1

PROPOSED OPERATING LICENSE  
AND  
TECHNICAL SPECIFICATION PAGE MARKUPS