

Detroit  
Edison

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April 19, 1994  
NRC-94-0035

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) NRC Bulletin 93-02, Supplement 1: Debris Plugging  
of Emergency Core Cooling Suction Strainers, dated  
February 18, 1994

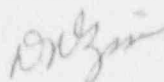
Subject: Detroit Edison Response to NRC Bulletin 93-02,  
Supplement 1

The purpose of this letter is to provide Detroit Edison's response to NRC Bulletin 93-02, Supplement 1 (Reference 2). This bulletin was issued to notify licensees of the vulnerability of Emergency Core Cooling System (ECCS) suction strainers in BWRs and containment sumps in PWRs to clogging during the recirculation phase of a Loss-Of-Coolant Accident (LOCA), and to request actions to ensure reliability of the ECCS in view of the discussed concern. A written response was required within 60 days of the date of this bulletin.

Accordingly, pursuant to the oath and affirmation requirements of 10CFR50.54(f), Detroit Edison has reviewed Bulletin 93-02, Supplement 1 and provides the response in the Enclosure to this letter, as required under the "Reporting Requirements" section of this supplement. As requested, a copy is being submitted to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III.

If you have any questions, please contact Mr. Girija S. Shukla at (313) 586-4270.

Sincerely,



Enclosure

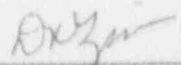
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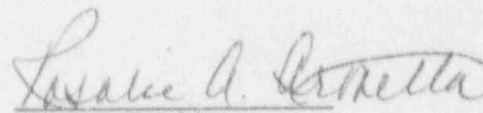
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I, DOUGLAS R. GIPSON, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

  
DOUGLAS R. GIPSON  
Senior Vice President

On this 19th day of April, 1994, before me personally appeared Douglas R. Gipson, being first duly sworn and says that he executed the foregoing as his free act and deed.

  
Notary Public

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

DETROIT EDISON RESPONSE TO NRC BULLETIN 93-02, SUPPLEMENT 1

(Debris Plugging of Emergency Core Cooling Suction Strainers)

The following is Detroit Edison's response to NRC Bulletin 93-02, Supplement 1. The bulletin requests that licensees take the following interim actions to enhance the capability to prevent or mitigate the loss of Emergency Core Cooling System (ECCS) following a Loss of Coolant Accident (LOCA) due to strainer clogging:

0 NRC Requested Action:

"Provide training and briefings to apprise operators and other appropriate emergency response personnel of the information contained herein and in the referenced information notices regarding the potential for suppression pool strainer clogging."

Detroit Edison Response:

Fermi 2 has established a training lesson plan that is currently being included in the licensed operator requalification training cycle. This lesson plan covers the material in the Bulletin and the material in the Information Notices referenced in the Bulletin. The operators are being made aware that there is a potential for a combination of LOCA generated and operational debris that can reach the suppression pool and clog the strainers.

The appropriate emergency response personnel are also being briefed with the information requested in the Bulletin to apprise them of the potential for suppression pool strainer clogging.

The operator training will be completed by May 2, 1994 and the emergency response personnel briefing will be completed by May 13, 1994.

0 NRC Requested Action:

"Assure that the emergency operating procedures make the operator aware of the possible indications of ECCS strainer clogging and provide guidance on mitigation."

Detroit Edison Response:

The existing symptom based Emergency Operating Procedures (EOPs) along with a new event based Abnormal Operating Procedure (AOP) will satisfy this requested action. There are several indications and instruments in the main control room that would

indicate degraded system performance that could possibly be due to clogging of the ECCS suction strainers. These indications and instruments are:

- Low or erratic ECCS flow, discharge pressure, or motor currents.
- Minimum flow valve open indication. A reduction in the suction pressure due to potential strainer clogging may reduce ECCS flow causing the minimum flow valve to open when it should be closed.
- Inability to control and maintain parameters such as RPV water level, containment pressure, drywell temperature, suppression pool temperature and suppression pool level within the specified EOP action levels and limits.

In the event that inadequate pump performance was detected, the existing symptom based EOPs would provide the necessary mitigative steps that would lead the operator to restore the reactor water level through injection systems with alternate suction sources. If the alternate suction sources were unsuccessful, the EOPs would direct the operator to use alternate injection systems such as Residual Heat Removal (RHR) service water. The EOPs do not require recognition of a specific event such as ECCS suction strainer clogging. This is why a new event based AOP is the proper way to address ECCS suction strainer clogging.

Fermi 2 will establish a new AOP that will provide the operators with the available indications that will enable them to recognize specific strainer clogging. Once strainer clogging is recognized, the AOP will provide the operators with the necessary mitigative actions. This new AOP will be prepared by May 27, 1994. Operator training on this new AOP will be conducted during the normal operator training requalification cycle, and will be completed by August 1, 1994. Fermi 2 is currently shut down in an outage scheduled to go beyond these action completion dates.

0 NRC Requested Action:

"Institute procedures and other measures to provide compensatory actions to prevent, delay, or mitigate a loss of available NPSH margin under LOCA conditions. Such measures should be consistent with providing the design basis emergency system functions for core and containment cooling. Actions to assure sufficient core and containment cooling may include:

- Reduction of flow (consistent with delivering the required ECCS flow) through the strainers to reduce the head loss and extend the time for debris deposition

- Operator realignment of existing systems to allow backflushing of clogged strainers
- Operator realignment of existing systems to allow injection to the core from water sources other than the suppression pool
- Intermittent operation of the containment sprays, when possible, to reduce the transport of debris to the strainers
- Other plant-specific measures which assure availability of sufficient core and containment cooling to meet the design basis of the plant"

Detroit Edison Response:

The following is the Detroit Edison response to each possible action listed in the supplement:

- "Reduction of flow (consistent with delivering the required ECCS flow) through the strainers to reduce the head loss and extend the time for debris deposition."

Fermi 2's existing EOPs currently have provisions to throttle or secure the ECCS pumps to restore and maintain the appropriate RPV level and cooling. If determined applicable, the new AOP will provide the necessary steps to deliver the reduced flow consistent with design bases requirements. This reduction in flow may reduce the strainer head loss and may extend the time for debris deposition.

- "Operator realignment of existing systems to allow backflushing of clogged strainers."

Fermi 2 will review the existing ECCS and plant systems for possible available post LOCA backflushing configurations. Any appropriate backflushing configuration will be considered for inclusion in the new AOP for suppression pool strainer clogging.

- "Operator realignment of existing systems to allow injection to the core from water sources other than the suppression pool."

The following Emergency Core Cooling Systems have the capability of being realigned to water sources other than the suppression pool:

High Pressure Coolant Injection (HPCI) - Condensate Storage Tank

RHR Low Pressure Coolant Injection (LPCI) - RHR Service Water

Core Spray (CS) - Condensate Storage Tank

The preferred water source of HPCI is the condensate storage tank. The EOPs currently allow overriding the automatic controls to realign HPCI from the suppression pool to the condensate storage tank when necessary. Also, the EOPs allow manual aligning of CS to the condensate storage tank for suction.

In the event that the preferred injection systems are not available, the EOPs provide the direction to allow injection of RHR Service Water.

When event-specific conditions permit, the new AOP will provide the operator with the ability to realign to alternate water sources.

- "Intermittent operation of the containment sprays, when possible, to reduce the transport of debris to the strainers."

Containment sprays are not automatically initiated and are only manual initiated in accordance with the EOPs. The EOPs also specify the times and conditions for initiation and securing the spraying. Fermi 2 does not intend to change the EOPs and does not intend addressing intermittent spraying in any other procedure.

- "Other plant specific measures which assure availability of sufficient core and containment cooling to meet the design basis of the plant."

Fermi 2 has existing housekeeping procedures for the primary containment (drywell, torus, and vent system). Fermi-2 also intends to fully desludge and clean all underwater surfaces inside the torus during our current Refueling Outage.