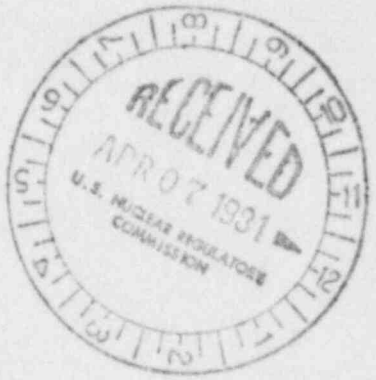
TIC

Detroit Edison
2000 Second Avenue
Detroit, Michigan 48226
(313) 237-8000

March 26, 1981
EF2-49,962



Mr. James G.Keppler, Director
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Mr. Keppler:

Reference: Enrico Fermi Power Plant, Unit 2
USNRC Licensing Docket: 50-341
USNRC IE Bulletin 80-25 (12-19-80)

Subject: Detroit Edison Response to NRC IE Bulletin 80-25

The enclosed Detroit Edison internal report number EF2-52,500 is herein transmitted to you in response to IE Bulletin 80-25.

The Project Engineering Organization (PEO) for the Enrico Fermi Nuclear Power Plant, Unit 2, has reviewed the unit's safety-related systems with respect to the operating problems experienced with Target Rock Safety Relief Valves (SRV's) described in the subject Bulletin. PEO has determined that Fermi 2 uses the same type/design valve cited in this Bulletin. This report commits to an effective program for testing these SRV's. The Report also states that operating and maintenance procedures will be revised to include the required actions. Further, the report gives assurance that the SRV pneumatic supply system design concept has been revised to achieve improved system reliability.

Although some of the actions called for in IEB 80-25 cannot be completed by the requested due date, they will be completed and reported upon either prior to or during initial startup of Fermi 2.

Should you require additional information from Detroit Edison in this matter, please advise us.

Very truly yours,

Donald A. Wells, Manager
Quality Assurance

JDR:mb
Encl.

APR 2 1981

8104090409

Q

The foregoing statements and the enclosed report are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

Donald A. Wells, Manager
Quality Assurance

MARGARET M. SIEFERT
Notary Public, [illegible] County, Mich.
My Commission [illegible], 1983

Subscribed and sworn to
before me this 27th day of
March, 1981.

cc: Director
Division of Reactor Construction Inspection
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Director
Division of Reactor Operations Inspection
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Bruce Little, Resident Inspector
U. S. Nuclear Regulatory Commission
Resident Inspector's Office
6450 North Dixie Highway
Newport, MI 48166

Detroit
Edison

ENRICO FERMI NUCLEAR POWER PLANT

UNIT NO. 2

USNRC LICENSING

DOCKET NO. 50-341

SUMMARY REPORT

OF

RESPONSE TO IE-BULLETIN NO. 80-25

Operating Problems with Target Rock
Safety Relief Valves on BWRs

March 11, 1981

(REFERENCE NO. EF2-52,500)

RESPONSE TO IE-BULLETIN NO. 80-25

Operating Problems with Target Rock
Safety Relief Valves on BWRs

INTRODUCTION

IE Bulletin 80-25 is addressed to a series of failure events affecting the two-stage pilot operated Target Rock safety relief valves at Boston Edison Company's Pilgrim Nuclear Power Station - Unit 1.

Fermi 2 has this same type design valve. One type of malfunction that had occurred, involved failure of an SRV to open and on another occasion, to close upon manual demand, due to foreign material causing the SRV solenoid and the main stage piston to stick. The other type of malfunction involved the inadvertent opening of an SRV due to overpressurization of the pneumatic supply which caused leakage through the SRV solenoid sufficient to open the SRV.

NRC DIRECTIVE

IEB 80-25 has directed that BWR plants with operating licenses or near term operating licenses to review their system and take the following action.

1. For facilities where the SRVs are not presently installed, initiate a Q. C. inspection of the solenoid actuators to verify that they are free from excessive Loc-tite material contamination. For facilities where the SRVs are installed, initiate a full pressure functional test and include in the test report the results of all attempts to operate each SRV.

2. Revise operating/maintenance procedures to include the requirement for any SRV that fails to function as designed, and the malfunction cause has not been clearly identified and corrected, that the entire valve is to be removed, inspected and tested in accordance with the periodic surveillance rehabilitation requirements for these valves.

3. Relief valve protection is to be provided in close proximity to the SRVs. High and low pressure annunciation for the SRV pneumatic supply is to be provided with the pressure source located as close to the SRVs as practicable. Operating procedures should include operator guidance in responding to a high or low pressure alarm. Consideration should be given to replacing the solenoid operators with a design that can withstand greater pneumatic supply overpressure.

4. The review results and intended action on the above three items are to be reported by the due date. Any corrective modifications are to be completed within 6 months of the time the decision was made to take this action.

RESPONSE

In response to the action directed, the results of Edison's review, to date, is as follows.

1. INSPECTION OR FUNCTIONAL TESTING OR SRV SOLENOIDS

The Target Rock Technical Manual for the Model 7567F safety relief valves at Fermi 2 cautions against excessive usage of the Loc-tite in the assembly of the solenoid valve assembly. (Assembly 7567F-010, October 1980, Section 9.1.7 on page 9-4).

The factory assembly inspection procedures are being reviewed to determine if they had already addressed the cautions on excessive use of Loc-tite materials in the manufacturer's written assembly instructions.

Although the Fermi 2 SRVs are not yet installed, they have been completely assembled ready for installation. To disassemble and again inspect these solenoids does offer some risk of exposing them to further contamination and will invalidate all post assembly factory Q. C. tests performed previously on these solenoids. Very little will be gained to repeat this factory inspection and testing.

These valves will be functionally tested by manual initiation of the SRV solenoids under the plant "Startup Testing Program." Startup Testing Procedure No. 24 for the SRVs will be revised to address the concerns of foreign particles (Loc-tite) contamination. This will include repeated actuations and a report on the results of each actuation.

2. SRV "MAINTENANCE INSPECTION PROCEDURES"

Completion of the final plant operating and maintenance procedures prior to initial operation, will include instructions that will include the actions called for in IEB 80-25 concerning the inspection/overhaul of malfunctioning SRVs.

3. OVERPRESSURE PROTECTION FOR THE SRV PNEUMATIC SUPPLY

The SRV pneumatic supply system design concept has been recently revised to achieve improved system reliability. The detailed engineering on this system revision will soon be initiated and final modifications will be completed prior to initial operation. This includes equipment changes and operating procedures revisions that address the concerns of IEB 80-25.

A review of the latest design concept, that addressed itself to the Pilgrim overpressurization problem, has been performed in response to IE Information Notice 80-40.

This review has shown that the normal nitrogen supply and backup control air supply to the pneumatic supply system, already have relief valve protection to prevent overpressurization from exceeding 130 PSIG. This is well below the pressure that must be reached to cause leakage through the present Fermi 2 SRV solenoid valve design. The only other possible source of overpressurization to the pneumatic supply are the emergency nitrogen bottle connections. Although the use of these connections to feed the pneumatic supply system will be very rare, the remote possibility of overpresssurization through these connections will be prevented by additional relief valves on the pneumatic supply piping just ahead of the pneumatic supply primary containment isolation valves. This will provide protection from all sources of overpressure, and provides additional redundant protection from the normal nitrogen and backup control air sources.

With adequate overpressure protection to prevent the pneumatic supply pressure from reaching high enough levels to cause inadvertent SRV operation, there is no requirement to replace the existing SRV solenoid valve design. Until an alternate solenoid valve design, capable of withstanding significantly higher pressures, has been fully tested and qualified to meet the requirements of SRV operation, no attempt to replace the existing design should be considered.

The Fermi 2 SRV pneumatic supply system does have system pressure monitoring and high/low pressure annunciation in the unit control room. Its source is located outside the primary containment. Since all sources for pneumatic supply overpressurization are connected ahead of this source, its location is fully capable of detecting any overpressurization that can impact the SRVs regardless if the containment isolation valves are open or closed.

This source location will not detect a loss of pneumatic supply to the SRVs and ADS accumulators upon closure of a pneumatic supply containment isolation valve. Therefore, valve closure annunciation will be provided in the control room to alert the operator. Valve position indication in the control room is available to provide continuous awareness of the valve position to the operator.

Operating procedures which will be completed prior to initial operation will provide operator guidance in responding to any occurrence of high/low pneumatic supply pressure or closure of the pnuematic supply containment isolation valves.

COMMITMENT

Although some of the actions called for in IEB 80-25 cannot be completed by the requested due date, they will be completed and reported upon prior to and during initial Startup of Fermi 2.

o o o o o o