

Detroit
Edison

Fermi 2
6400 North Dearborn Highway
Warren, Michigan 48090
(313) 586-4000



Nuclear
Operations

March 28, 1991
NRC-91-0043

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

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

Subject: Relief Request for Inservice Testing
Program for Pumps and Valves

In accordance with 10CFR50.55a(g)(5)(iii), Detroit Edison is transmitting Relief Request VR-2-R1.

Detroit Edison is requesting prompt approval of VR-2-R1 which specifies that the Feedwater Containment Isolation Check Valves B2100F010A and B2100F010B be (1) confirmed open during startup after cold shutdown by verification of feedwater flow to the reactor, and (2) verified closed during refueling outages by confirmation of acceptable leak test results from a Type C air leak test. Please note that this change does not change the testing methods for Feedwater Outboard Containment Isolation Check Valves B2100F016A and B2100F076B.

During the second refueling outage, engineering design package EDP 11591 will remove the disc position indication on B2100F010A and B2100F017. This indication has been a source of recurrent maintenance problems. The problems have included concurrent open and close indications, incorrect position indication, and loss of indication. Removal of the indication will eliminate challenges to the operators; promote ALARA goals by reducing personnel exposure by an average of 1 man-rem per occurrence; and reduce startup delays caused by the resultant drywell deinerting, inerting, and entries by an average of 50 hours per occurrence.

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Removal of the position indication requires a revision to Relief Request VR-2. The existing method, as described in Relief Request VR-2, requires that the B2100F010A and B2100F010B check valves be confirmed open when normal feedwater flow is established and that the check valves be exercised closed during cold shutdown. Without the position indication, the check valves cannot be verified closed during cold shutdown. Also, with the disc position indication mechanism removed, there will be no means by which to determine disc position locally.

This change in test method frequency will not reduce the check valves' margin of safety for the following reasons:

1. The present closure test verifies valve disc position relative to the valve seating surface. This test does not assure that the check valve can satisfy its safety function of providing containment integrity. The only test that confirms that the check valve can provide containment integrity is the Type C air test performed at every refueling in accordance with the Detroit Edison Fermi 2 ISI-IST Program and 10 CFR Part 50, Appendix J.
2. The purpose of the closure exercise performed during cold shutdown is to provide assurance that no internal damage has occurred that would prevent the check valves from swinging to the closed position under back flow conditions. The maintenance history has been reviewed from the date of commercial operation (1/23/80) to the present and there is no record of valve internals failures. B2100F010A was disassembled and inspected during the first refueling outage and no damage or wear to the internal parts was observed. B2100F010B will be disassembled and inspected during the second refueling outage. These valves have soft seats which are currently replaced on a staggered basis such that both are replaced every three refueling cycles. This is performed as part of the Fermi 2 Environmental Qualification Program. When the check valves are disassembled, their internals are inspected for wear and damage with any deficiencies being corrected. To date, no internal wear or damage to the check valves' moving parts has been observed.

Detroit Edison and the check valve vendor have investigated possible solutions to the position indication problems and feel that the present design is the most reliable design currently available. Detroit Edison has considered the other position verification methods described in ASME section XI, Article IWB-3522 (a) and Generic Letter GL 89-04. These methods include visual observation and observation of appropriate pressure indications in the system. Visual observation is not practical because it would require an entry into an inerted

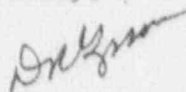
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drywell, and since the disc position indication mechanism is removed, there is no means of determining disc position locally. Observation of appropriate pressure indications in the system involves draining and refilling large sections of feedwater piping and is impractical.

Because this modification has been scheduled for the second refueling outage, Detroit Edison is requesting that Relief Request VR-2-R1 be reviewed and approved as soon as possible. The refueling outage will commence March 29, 1991 and restart is currently scheduled for June 6, 1991. Detroit Edison will do whatever is necessary to provide additional information and address concerns to assure timely review and turn around for this relief request.

If you have any questions on this matter, please contact Mr. Bruce Sheffel at (313)-586-1848.

Sincerely,



Enclosure

cc: A. B. Davis
R. W. DeFayette
W. G. Rogers
J. F. Stang

RELIEF REQUEST NO. VR-2-R1

SYSTEM: FEEDWATER

COMPONENT: B2100F010A B2100F076A
B2100F010B B2100F076B

CATEGORY: A/C

FUNCTION: Valves B2100F010A&B and B2100F076A&B close for containment isolation. Valve B2100F010A opens for HPCI injection.

TEST REQUIREMENTS: Exercise check valves every three months.

BASIS FOR RELIEF: These check valves cannot be tested for operability to the closed position during reactor operation because the feedwater system is needed to maintain primary coolant inventory and these check valves can only close with the cessation of feedwater flow. If a feedwater isolation valve was closed during operation, the feedwater nozzle and spargers would undergo a severe thermal shock when feedwater was restored. This thermal shock could cause cracking and possible failure of the spargers and nozzles. Finally, the air operators on the check valves cannot close the valves against feedwater flow. After startup from a cold shutdown, when normal feedwater is established, these valves are confirmed open. Plant Operations records will be available for verification of normal operation.

Although the check valves can be tested in the open direction during startup after a cold shutdown, the closed status of these check valves must be tested during reactor refueling. There is no means of confirming closed valve position other than during the AT-1 test.

ALTERNATE TESTING: The check valves will be verified open during plant startup after cold shutdown by the verification of feedwater flow to the Reactor. The check valves will be verified closed during reactor refueling by confirmation of acceptable leak test results (AT-1).