

Detroit  
Edison

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April 20, 1990  
NRC-90-0065

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

Reference: 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43  
2) NRC Inspection Report No. 50-341/89024,  
dated January 24, 1990  
3) Detroit Edison letter to  
the NRC, NRC-90-0043, dated  
March 9, 1990  
4) NRC letter to Detroit Edison,  
dated April 3, 1990

Subject: Additional Response to Violation 89-024-01 Part E and  
Weaknesses

This response is being submitted as agreed upon between Detroit Edison and NRC Region III (see Reference 4). A revision to the response on Violation 89-024-01 Part E and the weakness on page 33 of Reference 2 is provided. Both concerns related to deviations from procedures or specifications during implementation of modifications without prior documented engineering evaluation as required by procedures. Shortly after these concerns were noted, procedural changes were implemented which allows field changes to work packages prior to issuance of an approved design change. Thus, work can proceed, on an interim basis, based upon engineering verbal concurrence. Revisions to the design change are expedited and reconciled with the field installation prior to closing the work package and returning the component/system to operation.

A revision to the response to the weakness on the control of Raychem heat shrink was made to include a description of the procedural controls for this material and training provided on its installation.

If you have any questions please contact Patricia Anthony, Compliance Engineer, (313) 586-1617.

Sincerely,

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Q PDC

*B. Ralph Sylvia*

Enclosures (3)

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IE01

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Revised Response to NOV 89-024-01, Part E

Part E of the Notice of Violation 89-024-01 states:

"Mechanical craft workers omitted steps 8.4 and 8.5 from installation procedure 0298-60684 without obtaining concurrence from nuclear engineering and did not follow drawing C5140-300 nor the instructions associated with the installation of EDP-5546, "MSIV Manifold Assemblies," Revision 2. As a result, the air supply system was not purged during installation of the MSIV manifold assemblies in accordance with EDP-5546, "MSIV Manifold Assemblies," Revision 2, and steel plugs from discarded manifolds were utilized to plug one of two 4-way pneumatic valve exhaust ports on each newly installed MSIV manifold, which was not consistent with drawing C5140-300."

The field installation of the MSIV manifold observed was inconsistent with drawing C5140-300. Based upon followup review after the inspection, it was discovered that drawing C5140-300 reflects the manufacturer's shop condition of the manifold rather than field installation configuration (with steel plugs). The field configuration was consistent with the vendor installation instructions D298-60684, which were correct. This was confirmed by field personnel by comparing the new manifold to the existing manifold. The installation of the plugs was performed in accordance with the approved vendor installation instructions. Based upon maintenance supervision decision, it was concluded to follow the approved instructions for installing the steel plug.

At the time of implementation of EDP 5546, maintenance personnel concluded that the purge (specified in steps 8.4 and 8.5 of the vendor instructions) was not necessary even though the EDP installation instructions (Section C item 1) specified performance of steps 7 through 16 of vendor instruction D298-60684. They did not obtain a revision to the EDP prior to omitting the step as required by NPP-CM1-01, "Implementation of Modifications".

During the changeout of the air manifolds to the inboard MSIV (nitrogen supply line), piping was disconnected at the union and a special plug for the union was installed to maintain cleanliness. Plugs remained in system until reassembly. The outboard valves (air supply lines) were disassembled at a flange and pipe ends were taped for cleanliness. Also, the outboard lines were subsequently purged, as a good practice.

Corrective Actions Taken and Results Achieved:

After the omission of the purge was questioned, the event was documented on DER 89-1370 and reviewed. The system engineer evaluated the problem and concluded that purge was unnecessary. Additionally, the vendor was contacted and confirmed that, for this installation, purging was unnecessary.

Installation instructions D298-60684 from vendor manual VMRI-423 are generic instructions written by the vendor to cover the worst conditions that could potentially be encountered. Specifically, step 8.4 directed air system purging once modifications to the air supply system piping are completed. EDP 5546 did not result in any air supply system piping modifications. Therefore, the purging step was not applicable although it was specified in EDP 5546. Step 8.5 directs inspection of the lines following purging.

Corrective Actions Taken to Prevent Further Violations:

On December 5, 1989, procedures FIP-CM1-01 and NPP-CM1-01 were revised to allow field changes to work packages prior to issuance of an approved design change. Implementation impact is evaluated and affected components/systems cannot be returned to service or declared operable until the design change paper is issued and work performed is reconciled with the approved design change paper. Once this change was implemented, a site-wide notice of this change was issued to personnel. Therefore, appropriate personnel are aware of the requirements for revising EDPs while work is in progress.

Date When Full Compliance Will Be Achieved:

Fermi 2 is presently in compliance with its design modification process.

Revised Response to Weakness on Page 14

Per discussions as documented in Reference 4, Detroit Edison is revising its response to the weakness identified on page 14 of the inspection report.

On Page 14 of Reference 2, the report concludes that "...there is a high potential of using restricted use repair parts in an unrestricted basis on EQ and safety related systems/components." This related to the installation of heat shrink during observed maintenance activity.

Detroit Edison Revised Response

The heat shrink tubing in question is non-safety related and is used as a color coding device to identify the individual vendor wiring (jumper/lead wires) within the Main Steam Isolation Valve (MSIV) Leakage Control System Target Rock solenoid valve. Specifically, the heat shrink tubing does not serve any safety related insulation function. The usage observed was at the solder joint tab of the Potter Brumfield valve position relay. The solder connection was required since the valve position reed switch was replaced. The vendor confirmed that insulation at this relay tab solder connection was not required, is used for color coding purposes only, and is not required to maintain environmental qualification.

It should be noted that the tubing does not perform a safety related function. The report questions the effectiveness of the Central Component Data Base and Spare Parts Reference System in that it does not place restrictions on the usage of non-safety related parts on EQ and safety related components. Detroit Edison believes that placing limits and controls on the EQ and safety related parts rather than stating usage restrictions on non-EQ/non-safety related parts places emphasis properly. Site procedures for cable installation and termination address the appropriate use of Raychem heat shrink tubing by referencing the site specification and/or vendor instructions. Therefore, adequate administrative controls exist. General training on the installation and removal techniques for Raychem has been provided to the appropriate maintenance personnel.

Overall, use of EQ and safety related parts is controlled by the Material Management Department per management directive, FMD-PM2, "Procurement of Materials, Equipment, and Services", its implementing procedures and associated material management procedures. When any procedures are revised, a determination is made of any appropriate training requirements. New employees would receive training on those procedures considered applicable to their job responsibilities as part of the procedural compliance training course.

Revised Response to Weakness on Page 33

On page 33 of the report, concerns with the implementation of GE specifications for MSIVs via EDP 5546 were expressed. The inspector concluded two concerns were not addressed. These were:

The valve operator shall open the valve with a 200 psi differential pressure tending to hold the valve closed, utilizing 90 psig air pressure to the valve actuator.

The valve operator shall be provided with equipment for exercising the valve from 100% open to 90% open at the same speed.

Detroit Edison Revised Response

The design modifications to the MSIVs, as outlined below, did not reduce the ability of the valves to open against 200 psid, and additional testing was determined to be unnecessary. Specific design verification testing requirements are listed in Section 5.2.3 of the General Electric Purchase Specification for the MSIVs. The GE required tests were performed after the recent design modifications. There are no additional testing requirements specified by GE, as stated in the NRC Inspection Report.

The modifications performed under EDP 5958 did not change the area of the hydraulic cylinder, main poppet or pilot poppet. Therefore, the lifting force applied and required by the valve remains the same. This modification was also reviewed with and confirmed by the valve manufacturer and GE as not affecting the operability of the valve. Based on this design basis and technical review, the original 200 psid differential test under paragraph 4.3.7.6 of the GE specification was not challenged.

No design modification to the rib guides of the valves was performed. Rather, as recommended by GE in their Services Information Letter (SIL) No. 473, guide rib wear was "inspected and repaired as necessary", to be within the original manufacturer's tolerances. Also, packing as described in EDP 5958 remained the same graphitic material as already existed. However, reduction in the number of packing rings minimized the stem packing frictional area and, thus, improved the valves' operability characteristics. (Reference EPRI "Valve Stem Packing Improvements," final report NP-5697, dated May 1988).

The purpose of the partial closure test is to verify the operability of MSIVs during normal plant conditions. The valve stem travel is limited to 10 percent in order to prevent a plant scram. This test is accomplished by energizing the test solenoid and venting the air from the bottom of the air cylinder through the exhaust port of a manifold 3-way valve. When the air pressure is not applied to the top of the air cylinder, the valve closing springs provide the isolation valve closing force. The closing speed during exercising is much slower than the closing speed during the accident response (fast closure).

The slow exercise speed was set during the post modification test (PMT) (reference DER 89-1348). The PMT verified the valve spring capability to close MSIVs within the specified time during both fast and slow closures. Therefore, a separate partial closure test was not necessary for the PMT conducted after the implementation of EDP 5546.

In order to resolve this concern, section 4 of EDP 5546, which specifies acceptance testing, was revised via ECR (Engineering Change Request) 5546-2 on December 3, 1989 to read as follows:

Functional testing shall be performed in accordance with Item 12, 13, 14, and 15 of the Automatic Valve Co. Instruction D298-60684 (Ref. Vendor manual VMR1-42.3).

NOTE: The following guidelines shall be followed:

- 1) Valve shall open at a rate of one inch plus or minus 1/2 inch, per second, (i.e., approximate 9 to 20 sec). (Ref. GE Spec. 21A9257, Section 4.3.7.5.)
- 2) Exercise the valve from 100 percent open to fully closed position in 45 to 60 seconds. (Ref. GE Spec. 21A9257, Part of 4.3.5.7.9.)

This more clearly defines how the GE specification should be incorporated in the acceptance testing. The discussion of corrective actions to prevent recurrence in enclosure 1 also applies to this concern. The actions described there assure that deviations from procedures (or specifications, as in this case) are evaluated and documented prior to installation or testing of modifications.