



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. NPF-43  
DETROIT EDISON COMPANY  
FERMI-2  
DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated January 30, 1992, the Detroit Edison Company (DECo or the licensee) requested amendment to the Technical Specifications (TS) appended to Facility Operating License No. NPF-43 for Fermi-2. The proposed amendment would remove two valves from TS Table 3.4.3.2-1 and 3.4.3.2-2 because these valves are no longer reactor coolant system pressure boundary isolation valves.

2.0 EVALUATION

The elimination of two valves from the above TS tables will have the effect of eliminating the surveillance requirements for these valves. The two valves in question, the reactor pressure vessel (RPV) head spray inboard isolation valve (E11-F022) and the RPV head spray outboard isolation valve (E11-F023). The RPV head spray line has previously been permanently disconnected (flanged) from the reactor vessel and, therefore, these valves no longer perform a reactor coolant system pressure boundary isolation function. Thus, it is appropriate to eliminate these valves from TS Table 3.4.3.2-1, "Reactor Coolant System Pressure Isolation Valves" and Table 3.4.3.2-2, "Reactor Coolant System Interface Valves Leakage Pressure Monitors."

The RPV head spray feature was an operating mode for the Residual Heat Removal (RHR) System associated with the RHR shutdown cooling mode. When RHR is operating in the shutdown cooling mode, reactor coolant is returned to the RPV through a recirculation system loop, or with head spray installed, part of the flow could be diverted to a spray nozzle in the RPV head. The intent of the head spray feature was to maintain saturated conditions in the RPV head volume by condensing steam being generated by the hot RPV walls and internals and to decrease thermal stratification in the RPV coolant during shutdown cooling. However, operating experience has shown that RPV differential temperature limits can be met as long as the TS allowable cool down rate for the reactor coolant is not exceeded while in shutdown cooling. Consequently, head spray was not needed nor was it used.

The RHR head spray mode performed no safety-related functions. The safety analysis did not take credit for this mode of RHR in mitigating the consequences of an accident or malfunction and it was not required for the

safe shutdown of the plant. Because head spray was not required for its intended function nor any safety functions, a design change was made to disconnect the head spray line from the RPV head spray nozzle to reduce the thermal duty on the RPV. Additionally, the licensee has stated that approving the proposed changes will reduce radiation exposure to personnel who previously performed surveillances of these valves.

The two isolation valves, E11-F022 and E11-F023, remain installed and continue to perform a primary containment isolation function. The valves are listed in TS Table 3.6.3-1, "Primary Containment Isolation Valves," and are subject to the associated surveillance requirements. However, the valves no longer perform a RCS pressure isolation function.

The staff has reviewed the licensee's basis for removal of the RPV head spray line from the RPV head spray nozzle. The RPV head spray performed no safety-related functions and because credit was not taken in the safety analysis for mitigation of the consequences of any accident; additionally, removal of this line eliminated a potential leakage pathway from the reactor coolant system. Lastly, approval of the proposed TS will reduce radiation exposure to plant personnel currently required to perform surveillance of these valves. Based on the above, the staff finds the licensee's proposed changes to be acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents which may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (57 FR 22261). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: T. Colburn

Date: July 31, 1992