UNITED STATES NUCLEAR REGULATORY COMMISSION

DETROIT EDISON COMPANY

FERMI 2

DOCKET NO. 50-341

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from the requirements of 10 CFR Part 50, Appendix J, III.C, related to Type C local leak rate testing of containment isolation valves, to Detroit Edison Company (the licensee), for operation of the Fermi 2 Plant, located in Monroe County, Michigan.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

The proposed action would grant an exemption from the requirements of Appendix J, Paragraph III.C of 10 CFR Part 50 and approve alternative local leak rate testing of the containment isolation valves (CIVs) in the low pressure coolant injection (LPCI) lines of the residual heat removal (RHR) system. These lines are 24-inch injection lines whose primary containment penetrations are designated as X-13A and X-13B. Each contains an outboard-of-containment motor-operated gate valve in series with an inboard-of-containment check valve having a 1-inch bypass line which contains a normally locked closed solenoid operated globe valve. The gate and globe valves are remotely operated from the control room. Under the provisions of General Design Criterion (GDC) 55 of Appendix A of 10 CFR Part 50, these valves would be required to be designed in accordance with one of the listed configurations

and designated as CIVs unless it can be demonstrated that the containment isolation provisions are acceptable on some other defined basis. The outside containment configuration contains a remote manual valve rather than an automatic or locked closed valve, but is acceptable because LPCI is required to operate for core cooling during an accident; therefore, no automatic containment isolation signal is used. The inboard valve configuration meets the explicit requirements of GDC 55.

In a letter dated May 24, 1993, the licensee provided justification to consider differing from the explicit requirements of GDC 55 in accordance with guidance contained in the staff's Standard Review Plan (SRP), NUREG-0800, Section 6.2.4 "Containment Isolation System." Subsection II.6.e allows only a single CIV, outside containment, if the system is closed outside containment and certain other provisions are met. On this basis, the licensee proposed that the check valves and 1-inch solenoid operated globe valves inside containment no longer be considered as containment isolation valves and; therefore, no longer subject to the requirements of Paragraph III.C of Appendix J to 10 CFR Part 50. These valves would still be considered reactor coolant pressure isolation valves and subject to those leak testing provisions which are identified in Technical Specification 4.4.3.2.2.

The licensee also requested an exemption from Paragraph III.C.2 which requires that CIVs subject to Type C tests, unless pressurized with fluid from a seal system, shall be pressurized with air or nitrogen to a pressure of Pa, the calculated peak containment internal pressure during a design basis accident. The licensee proposed an alternative test to measure the external leakage of the CIVs (the motor operated gate valves outside containment) using water as a test medium with a limited allowable leakage.

The Need for the Proposed Action

The proposed exemption is needed because compliance to Paragraph III.C.2 of 10 CFR Part 50, Appendix J, would result in extended outage time and additional personnel radiation exposure while testing the CIVs described above, without additional safety benefit. The licensee's basis for proposing the alternate testing for the CIVs was demonstration of the existence of a water seal between the inboard and outboard containment valve configurations of these penetrations that would be maintained for at least 30 days following an accident, the consideration of the RHR system as a closed system outside of containment, and operation of the RHR pumps which assures that through-seat leakage would be leakage in towards containment despite any single active failure. With through seat leakage not a concern, the only other containment isolation valve leakage of concern would be external to the valve (such as a stem or bonnet leak). The licensee's proposed alternative testing provides an acceptable basis to resolve this concern. Therefore, adequate containment integrity is demonstrated and the underlying purpose of the regulations is achieved.

Environmental Impact of the Proposed Action

The proposed exemption would allow the substitution of an alternative testing for the required Type C leak rate testing for containment isolation valves. The staff has determined that the alternative testing would provide an acceptable basis for demonstrating containment integrity. The related proposed alternative basis for compliance with the provisions of GDC 55 does not require an exemption, but does formulate, in part, the basis for approval of the proposed exemption. The staff has determined that the justification provided by the licensee adequately meets the SRP Section 6.2.4, II.6.e review

criteria for an alternative basis to meet the requirements of GDC 55. The alternative design requirements provide adequate assurance of containment integrity. Although the inboard containment valve configurations will no longer be tested to the Type C integrated leak rate test criteria, these valves will continue to be leak tested to demonstrate their reactor coolant pressure isolation valve function. Therefore, post-accident radiological releases are not expected to exceed previously determined values as a result of the proposed action. Further, the exemption is not expected to have an impact on plant radiological effluent releases. The proposed action does have the potential to reduce occupational exposure by reducing the amount of time personnel are required to spend in a radiologically restricted area.

With regard to potential non-radiological impacts, the proposed action and related change to the Technical Specifications involve a change in the surveillance requirements and will not affect non-radiological plant effluents nor does it have any other environmental impact. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed exemption.

Alternative to the Proposed Action

Since the Commission concluded that there are no significant environmental effects that would result from the proposed action, any alternatives with equal or greater environmental impacts need not be evaluated.

The principal alternative would be to deny the requested exemption and amendment. This would not reduce environmental impacts of plant operation and would result in reduced operational flexibility and greater occupational exposure to plant personnel.

Alternative Use of Resources

This action does not involve the use of resources not previously considered in connection with the Commission's Final Environmental Statement, dated August 1981, for Fermi 2.

Agencies and Persons Consulted

The staff consulted with the State of Michigan regarding the environmental impact of the proposed action. The State had no comments.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed exemption.

Based upon the foregoing environmental assessment, the staff concludes that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this proposed action, see the licensee's application and request for exemption dated May 24, 1993. This document is available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, DC 20555, and at the local public document room located at the Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161.

Dated at Rockville, Maryland, this 14th day of April, 1994.

FOR THE NUCLEAR REGULATORY COMMISSION

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