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Nuclear Operations

September 5, 1997
NRC-97-0107

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

References: 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

2) NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", Revision 1, April 1995.

Subject: Proposed Technical Specification Change (License Amendment) for the Addition of a Special Test Exception to Allow Inservice Leak and Hydrostatic Testing to be Performed at Temperatures Greater Than 200°F but Less Than or Equal to 212°F While Considering the Reactor to Remain in OPERATIONAL CONDITION 4

Pursuant to 10CFR50.90, The Detroit Edison Company hereby proposes to amend Operating License NPF-43 for the Fermi 2 nuclear power plant by incorporating the enclosed changes into the Fermi 2 Technical Specifications. The proposed change adds a Special Test Exception to allow the unit to remain in OPERATIONAL CONDITION 4 (reactor coolant temperature less than or equal to 200°F) with actual reactor coolant temperatures greater than 200°F, but not to exceed 212°F, when performing inservice leak and hydrostatic testing.

This proposed amendment is similar to amendments previously approved by the NRC Staff for Nine Mile Point Unit 2 in a Safety Evaluation Report (SER) dated November 12, 1993, for Hope Creek Generating Station in an SER dated April 18, 1994, and for Susquehanna Steam Electric Station in an SER dated February 13,

1995. This change is also consistent with the Improved Technical Specifications (Reference 2) which allow performance of inservice leak and hydrostatic testing while in Mode 4 (OPERATIONAL CONDITION 4 – COLD SHUTDOWN) with the reactor coolant temperature greater than 200°F.

Detroit Edison is requesting that this license amendment request be processed in an exigent manner in order to support an upcoming mid-cycle outage to replace a leaking fuel assembly. This outage is scheduled to begin October 3, 1997. The outage will be shorter in duration and will not result in replacement of the amount of fuel typical of a refueling outage, therefore, the reactor coolant system leakage test will be performed at a higher decay heat load than is encountered following a normal refueling outage. The added temperature range allowed by the requested license amendment is necessary to support performance of the required system leakage testing on the disassembled components.

Enclosure 1 provides a description and an evaluation of the proposed change.

Enclosure 2 provides the no significant hazards consideration assessment for this change using the standards delineated in 10CFR50.92.

Enclosure 3 provides the rationale for supporting an exigent change as described in 10CFR50.91(a)(6).

Enclosure 4 provides the environmental impact analysis of this change required by 10CFR51.22.

Enclosure 5 provides hand-marked pages of the current Technical Specifications showing the proposed changes. A typed version of the affected Technical Specification pages with the proposed changes incorporated is also included.

Detroit Edison has evaluated the proposed Technical Specification change and has determined that no significant hazards are considered to be involved pursuant to 10CFR50.92. The Fermi 2 Onsite Review Organization has reviewed and recommends approval of the proposed changes. The Nuclear Safety Review Group has reviewed the proposed changes and concurs with the enclosed determinations. In accordance with 10CFR50.91, Detroit Edison is providing a copy of this letter to the State of Michigan.

In order to support the upcoming mid-cycle outage, we request approval of this license amendment request no later than October 8, 1997.

There are no commitments being made in this letter.

Please contact Mr. Norman K. Peterson at (313) 586-4258 if you have any questions regarding this submittal.

Sincerely,

Anthony F. Earley, Jr.
President & COO

Enclosures

cc: A. B. Beach
G. A. Harris
M. J. Jordan
A. J. Kugler
J. R. Padgett Supervisor, Electric Operators,
Michigan Public Service Commission

I, ANTHONY F. EARLEY, JR. do hereby affirm that the foregoing statements are based on facts and circumstances that are true and accurate to the best of my knowledge and belief.

Anthony F. Earley, Jr.
ANTHONY F. EARLEY, JR.
President & COO

On this 5th day of Sept., 1997 before me personally appeared Anthony F. Earley, Jr. being first duly sworn and says that he executed the foregoing as his free act and deed.

Bernadette E. Wilson
Notary Public

BERNADETTE E. WILSON
Notary Public, Wayne County, MI
My Commission Expires Dec. 7, 2001

ENCLOSURE 1

DESCRIPTION AND EVALUATION OF THE REQUESTED REVISION TO THE TECHNICAL SPECIFICATIONS:

Addition of a Special Test Exception to Allow Inservice Leak and Hydrostatic Testing to be Performed at Temperatures Greater Than 200°F but Less Than or Equal to 212°F While Considering the Reactor to Remain in OPERATIONAL CONDITION 4

DESCRIPTION OF CHANGE:

This proposed change adds a Special Test Exception, 3/4.10.7, "Inservice Leak and Hydrostatic Testing," to allow the performance of pressure testing at a reactor coolant temperature of greater than 200°F but less than or equal to 212°F while considering the plant to remain in OPERATIONAL CONDITION 4. This Special Test Exception will relax the Primary Containment Integrity requirements normally associated with reactor coolant temperatures greater than 200°F, thus allowing less restricted access to the Reactor Pressure Vessel (RPV) head area of primary containment for the performance of required inspections. This Special Test Exception however, will require that the OPERATIONAL CONDITION 3 Technical Specification requirements for Secondary Containment Isolation, Secondary Containment Integrity, Secondary Containment Automatic Isolation Dampers, and Standby Gas Treatment System (SGTS) OPERABILITY be met.

This change includes the associated revisions to the Index, the Table 1.2, "OPERATIONAL CONDITIONS" definition of OPERATIONAL CONDITION 4, and the Bases for Emergency Core Cooling Systems (ECCS) and Special Test Exceptions, to support incorporation of the proposed Special Test Exception. The hand-marked current Technical Specification pages showing the proposed changes are attached.

EVALUATION:

Inservice leak and hydrostatic testing required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code is performed following a refueling outage or other activity which has resulted in the reactor coolant system being breached. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by Limiting Condition for Operation (LCO) 3.4.6, "Reactor Coolant System Pressure/Temperature Limits." These limits are

conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

Allowing the reactor to be considered to remain in OPERATIONAL CONDITION 4 during inservice leak and hydrostatic testing, when the reactor coolant temperature is greater than 200°F, but less than or equal to 212°F, is an exception to the OPERATIONAL CONDITION 3 requirements for Primary Containment Integrity and the required full complement of redundant Emergency Core Cooling Systems (ECCS) associated with operation above 200°F. Because inservice leak and hydrostatic tests will be performed water solid or nearly water solid, at less than or equal to 212°F, and at relatively low decay heat values in comparison to those assumed in the safety analyses, the stored energy in the reactor core and coolant will be very low. Under these conditions, the potential for failed fuel with a subsequent increase in reactor coolant activity to above the LCO 3.4.5, "Reactor Coolant System Specific Activity" limits will be minimized. The secondary containment, including automatic isolation dampers, and the SGTS will be OPERABLE and capable of handling airborne radioactivity from leaks that could occur during the performance of inservice leak and hydrostatic testing.

Airborne activity will not be significant in the event of a leak because the reactor coolant temperature will be limited to 212°F and therefore, little or no flashing of reactor coolant will occur. Requiring Secondary Containment Integrity and the secondary containment related systems to remain OPERABLE will ensure that potential airborne radiation from leaks will be filtered through the SGTS, and thus will limit radiation releases to the environment. The required pressure testing conditions ensure that the consequences of a steam or water leak will be conservatively bounded by the consequences of the main steam line break outside of primary containment analysis described in Section 15.6.4 of the Updated Final Safety Analysis Report (UFSAR). Therefore, these requirements will conservatively limit radiation releases to the environment.

Large primary system leaks will result in the reactor vessel rapidly depressurizing, allowing the low pressure ECCS systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in OPERATIONAL CONDITION 4 by LCO 3.5.2, "ECCS-Shutdown," will be more than adequate to maintain the core flooded under this relatively low decay heat load condition. Small system leaks will be detected by leakage inspections before any significant inventory loss can occur.

The protection provided by the existing OPERATIONAL CONDITION 4 Technical Specifications, in conjunction with the OPERATIONAL CONDITION 3 secondary containment operability requirements imposed by this Special Test Exception, will

ensure plant safety during the performance of inservice leak and hydrostatic tests and would ensure that the plant responds appropriately during accident conditions, should they occur. Therefore, the requested changes can be implemented without endangering the health and safety of the public.

ENCLOSURE 2

NO SIGNIFICANT HAZARDS CONSIDERATION

Addition of a Special Test Exception to Allow Inservice Leak and Hydrostatic Testing to be Performed at Temperatures Greater Than 200°F but Less Than or Equal to 212°F While Considering the Reactor to Remain in OPERATIONAL CONDITION 4

1. **Does this change involve a significant increase in the probability or consequences of an accident previously evaluated**

The proposed change allows the performance of inservice leak and hydrostatic testing at a reactor coolant temperature of greater than 200°F but less than or equal to 212°F while considering the plant to remain in OPERATIONAL CONDITION 4. This change to permit the average reactor coolant temperature to be increased above 200°F, but not greater than 212°F while performing inservice leak and hydrostatic testing will not significantly increase the probability of an accident previously evaluated. These tests are performed nearly water solid with all control rods fully inserted. Therefore, the stored energy in the reactor core and coolant will be very low and the potential for causing fuel failures with a subsequent increase in coolant activity is minimal. The restrictions provided in the proposed Special Test Exception, to require Secondary Containment Integrity and Standby Gas Treatment System OPERABILITY, provide assurance that any potential releases into secondary containment will be restricted from direct release to the environment and will be adequately filtered if released. With the reactor coolant temperature limited to 212°F, there will be little or no flashing of coolant to steam, and any release of radioactive materials will be minimized. Therefore, this change will not significantly increase the consequences of an accident. In the event of a large primary system leak, the reactor vessel will rapidly depressurize allowing the low pressure Emergency Core Cooling Systems (ECCS) to operate. The capability of the required ECCS in OPERATIONAL CONDITION 4 is adequate to maintain the core flooded under these conditions. Small system leaks will be detected by leakage inspections, which are an integral part of the inservice leak and hydrostatic testing program, before any significant inventory loss can occur. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does this change create the possibility of a new or different kind of accident from any accident previously evaluated.**

Allowing the reactor to be considered to remain in OPERATIONAL CONDITION 4 during inservice leak and hydrostatic testing, with reactor coolant temperatures greater than 200°F but less than or equal to 212°F, is an exception to certain OPERATIONAL CONDITION 3 requirements including those associated with Primary Containment Integrity and full complement operability of the ECCS systems. The inservice leak and hydrostatic test conditions remain unchanged otherwise. The reactor coolant system is designed for temperatures exceeding 500°F with similar pressures; and therefore, any leaks occurring will be bounded by the main steam line break outside containment analysis provided in Section 15.6.4 of the UFSAR. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. **Does this change involve a significant reduction in a margin of safety.**

The proposed change allows inservice leak and hydrostatic testing to be performed with reactor coolant temperatures of up to 212°F, and the reactor to be considered to remain in OPERATIONAL CONDITION 4. The reactor vessel head will be in place, Secondary Containment Integrity will be maintained and the systems required in OPERATIONAL CONDITION 4 will be OPERABLE in accordance with the Technical Specifications; therefore, the proposed change will not have a significant impact on any design basis accident or safety limit. Inservice leak and hydrostatic testing is performed water solid, or nearly water solid with reactor coolant temperature $\leq$ 212°F. The stored energy in the core and coolant will be very low and the potential for failed fuel and a subsequent increase in coolant activity will be minimal. The reactor pressure vessel will rapidly depressurize in the event of a large primary system leak, and the low pressure ECCS systems required to be OPERABLE in OPERATIONAL CONDITION 4 will be adequate to maintain the core flooded, thus ensuring that the fuel will not exceed the 2200 °F peak clad temperature limit. Additionally, requiring Secondary Containment Integrity will result in any potential airborne radiation being filtered through the SGTS, thus ensuring that offsite doses remain well within the 10CFR100 limits. Small system leaks will be detected by leakage inspections before any significant inventory loss can occur. Therefore, this special test exception will not involve a significant reduction in a margin of safety.

ENCLOSURE 3

RATIONALE FOR SUPPORT OF EXIGENT CHANGE

Detroit Edison requests that this license amendment request be processed in an exigent manner as allowed by 10CFR50.91(a)(6). During May of 1997, increasing offgas radiation levels led to the identification of a small fuel leak. At that time, action was taken to mitigate the leak, and planning was initiated for an outage to allow for identification and replacement of the leaking fuel. It was determined that the best time for this outage, based upon plant safety, customer needs, system load demands, and fuel optimization concerns, would be October of 1997. Conducting an outage at that time is a conservative measure even though the leakage has not approached regulatory limits. This mid-cycle outage is expected to begin October 3, 1997, with an expected duration of 16 days. A reactor coolant system inservice leak test (System Leakage Test) will be required to be performed prior to startup from this outage. The outage will be shorter in duration and will not result in replacement of the amount of fuel typical of a refueling outage, therefore, the reactor coolant system inservice leak test will be performed at a higher decay heat load than is encountered following a normal refueling outage. During the final planning for this outage, it was recently recognized that the anticipated decay heat levels would not allow for sufficient time to conduct the required leakage test in a controlled, deliberate manner within the Technical Specification limits governing test temperatures. Without this Special Test Exception, Detroit Edison is not confident that the leakage test pressurization, inspection, and recovery can be accomplished within the 200°F reactor coolant temperature limit, thus necessitating receipt of this Special Test Exception prior to the performance of the leak test.

Detroit Edison has used its best efforts to make a timely application for this amendment. However, this short time frame may not allow the normal public notice and comment period described in 10CFR50.91(a)(2), and still ensure receipt of the license amendment in time to support leak testing and subsequent plant startup as currently scheduled. Therefore, the requested exigent treatment of this license amendment request could not be avoided. In making preparations for this unexpected outage, it was only recently concluded that a Special Test Exception would be necessary. The matter was discussed with the NRC Staff, and the license amendment request was prepared and reviewed in an expeditious manner. Therefore, Detroit Edison requests that this license amendment request be handled in an exigent manner as allowed by 10CFR50.91(a)(6), and that it be approved by October 8, 1997.

ENCLOSURE 4

ENVIRONMENTAL IMPACT

Detroit Edison has reviewed the proposed Technical Specification change against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not involve a significant hazards consideration. Neither does it significantly change the types or significantly increase the amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, Detroit Edison concludes that the proposed Technical Specifications do meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

ENCLOSURE 5

FERMI 2

NRC DOCKET NO. 50-341
OPERATING LICENSE NPF-43

LICENSE AMENDMENT REQUEST:

TECHNICAL SPECIFICATION CHANGE

Part 1 of this enclosure contains a hand marked copy of the current Technical Specifications, indicating the proposed changes. A typed version of the Technical Specifications incorporating the proposed changes is provided in Part 2.