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Nuclear  
Operations

September 30, 1992  
NRC-92-0075

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

- References:
- 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43
  - 2) Generic Letter 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping", dated January 25, 1988
  - 3) Generic Letter 88-01, Supplement 1, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping", dated February 4, 1992
  - 4) Detroit Edison Letter to NRC, "Response to NRC Generic Letter 88-01", NRC-88-0191, dated August 5, 1988
  - 5) Detroit Edison Letter to NRC, "Revised Response to NRC Generic Letter 88-01", NRC-89-0088, dated April 27, 1989
  - 6) Detroit Edison Letter to NRC, "Submission of NRC Requested Additional Information on Generic Letter 88-01", NRC-89-0106, dated May 12, 1989
  - 7) NRC Letter to Detroit Edison, "NRC Position on IGSCC on BWR Austenitic Stainless Steel piping Generic Letter (GL) 88-01 (TAC No. 69125)", dated January 4, 1990
  - 8) Detroit Edison Letter to NRC, "Fermi 2 Response to Generic Letter 88-01, Supplement 1, 'NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping'", NRC-92-0090, dated July 29, 1992

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Subject: Proposed Technical Specification Change (License Amendment) - Reactor Coolant System Operational Leakage Technical Specification 3/4.4.3.2  
(Implementation of **Generic Letter 88-01 and 88-01, Supplement 1 Guidance**)

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Pursuant to 10CFR50.90, Detroit Edison Company (DECo) hereby proposes to amend Operating License NPF-43 for the Fermi 2 plant by incorporating the enclosed changes into the Plant Technical Specifications (TS). In Reference 8, the DECo response to Generic Letter GL 88-01, Supplement 1, DECo committed to submitting a TS amendment that incorporates the Generic Letter GL 88-01 (Reference 2) NRC Staff position on leak detection which concerns the reactor coolant system unidentified leakage rate of change limit.

The proposed amendment: (1) changes the reactor coolant system (RCS) unidentified leakage rate of change limit applicable in Operational Condition 1; (2) retains the current RCS unidentified leakage rate of change limit applicable in Operational Conditions 2 and 3; (3) changes the surveillance interval for monitoring RCS unidentified and identified leakage in Operational Condition 1; and (4) incorporates the bases for the above changes in TS Bases. The details of these changes are described in Enclosure 1 of this submittal.

The proposed change in the RCS unidentified leakage rate of change limit applicable in Operational Condition 1 is in accordance with the NRC Staff position on leak detection in Generic Letter GL 88-01 (Reference 2). Retention of the current RCS unidentified leakage rate of change limit applicable in Operational Conditions 2 and 3 provides a limit that takes into account the expected increase in RCS unidentified leakage experienced during normal, routine reactor startups. The proposed change in the RCS unidentified leakage surveillance interval in Operational Condition 1 is equivalent to the NRC Staff acceptable alternate position on the frequency of RCS leakage measurements in Generic Letter GL 88-01, Supplement 1 (Reference 3). The proposed change in the RCS identified leakage surveillance interval in Operational Condition 1 makes it consistent with the proposed RCS unidentified leakage surveillance interval for Operational Condition 1. The proposed change to the TS Bases identifies GL 88-01 and GL 88-01, Supplement 1 as the basis documents for the changes to the RCS unidentified leakage rate of change limit and the RCS unidentified leakage surveillance interval applicable in Operational Condition 1.

DECo has evaluated the proposed Technical Specifications against the criteria of 10CFR50.92 and determined that no significant hazards consideration is involved. The Fermi 2 Onsite Review Organization has approved and the Nuclear Safety Review Group has reviewed the proposed Technical Specifications and concurs with the enclosed

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determinations. In accordance with 10CFR50.91, Detroit Edison has provided a copy of this letter to the State of Michigan.

DECo requests that this amendment be effective 60 days after NRC issuance to allow sufficient time to implement these changes. If you have any questions, please contact Mr. David H. Brown at (313) 586-4213.

Sincerely,



Enclosures:   Enclosure 1 - Evaluation of Proposed Change  
                  Enclosure 2 - Proposed Technical Specifications Mark-up  
                  Enclosure 3 - Technical Specification Change Pages

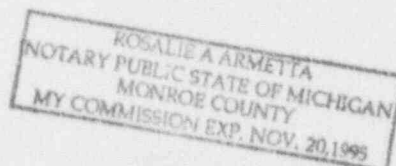
cc: T. Colburn  
     A. B. Davis  
     M. P. Phillips  
     S. Stasek  
     Supervisor, Electric Operators, Michigan  
     Public Service Commission - J. R. Padgett

I, WILLIAM S. ORSER, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

*William S. Orser*  
WILLIAM S. ORSER  
Senior Vice President

On this 30th day of September, 1992, before me personally appeared William S. Orser, being first duly sworn and says that he executed the foregoing as his free act and deed.

*Rosalie A. Armetta*  
Notary Public



ENCLOSURE 1

EVALUATION  
OF  
PROPOSED CHANGE



## INTRODUCTION

On January 25, 1988, the NRC issued Generic Letter GL 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping" (Reference 2). This generic letter presented the NRC staff positions on a variety of subjects associated with intergranular stress corrosion cracking (IGSCC) near weldments in BWR piping. DECO reviewed the staff positions and documented its response in References 4, 5, and 6. On January 4, 1990, the NRC issued a safety evaluation (Reference 7) on the DECO response to GL 88-01. This safety evaluation states that the DECO response to GL 88-01 is complete with the exception of the DECO position concerning the technical specification (TS) limiting condition for operation (LCO) 3/4.4.3.2.e leakage limit.

The current LCO 3/4.4.3.2.e states that reactor coolant system (RCS) leakage shall be limited to a 2 gpm increase in unidentified leakage within any 4 hour period. GL 88-01 states that the RCS leakage shall be limited to a 2 gpm increase in unidentified leakage within any period of 24 hours or less.

On February 4, 1992, the NRC issued Supplement 1 to GL 88-01. This supplement provided alternative positions to those delineated in GL 88-01. One such position concerns the RCS leakage monitoring frequency. GL 88-01 requires that containment sump levels be monitored every 4 hours. GL 88-01, Supplement 1, relaxes this requirement by allowing the containment sumps to be monitored once per shift not to exceed 12 hours.

The current surveillance TS 4.4.3.2.1.b and 4.4.3.2.1.c require the primary containment sump flowrate and the drywell floor drain sump level, respectively, to be monitored at least once every 4 hours.

On July 29, 1992, DECO committed to submitting a TS amendment that incorporates the GL 88-01 NRC Staff position on RCS unidentified leakage limits.

The purpose of this proposed TS amendment is to revise TS 3/4.4.3.2 to incorporate the NRC Staff position on leakage limits in GL 88-01, applicable in Operational Condition 1 only; revise the applicability of the current unidentified leakage rate of change limit to Operational Conditions 2 and 3; incorporate the RCS leakage monitoring frequency consistent with the NRC Staff position in GL 88-01, Supplement 1, applicable in Operational Condition 1 only; and revise the applicability of the current RCS monitoring frequency to Operational Conditions 2 and 3.

## PROPOSED TECHNICAL SPECIFICATION CHANGES

The proposed TS mark-up is contained in Enclosure 2 and Enclosure 3 contains the TS change pages. The specific changes are discussed below.

1. LCO 3.4.3.2.e

The proposed LCO 3.4.3.2.e changes the unidentified leakage rate of change limit from a 2 gpm increase in RCS unidentified leakage within any 4 hour period to a 2 gpm increase in reactor coolant leakage within any 24 hour period. It also limits the applicability of the proposed limit to Operational Condition 1. This change brings the unidentified leakage rate of change limit into agreement with the NRC Staff position on leakage limits in GL 88-01.

2. LCO 3.4.3.2.f

The proposed LCO 3.4.3.2.f retains the current RCS unidentified leakage rate of change limit (2 gpm increase within any 4 hour period) but makes it applicable in Operational Conditions 2 and 3 only. This change prevents the unnecessary entry into the unidentified leakage rate of change action statement due to the changes in RCS unidentified leakage experienced during routine startups.

3. TS 3.4.3.2, Action Statement e

The proposed TS 3.4.3.2 Action Statement e also changes the unidentified leakage rate of change limit from a 2 gpm increase in RCS unidentified leakage within any 4 hour period to a 2 gpm increase in RCS unidentified leakage within any 24 hour period. This change makes Action Statement e consistent with the proposed change in LCO 3.4.3.2.e.

4. TS 3.4.3.2 Action Statement f

The proposed TS 3.4.3.2 Action Statement f retains the current RCS unidentified leakage rate of change limit (2 gpm increase within any 4 hour period) but makes it applicable in Operational Conditions 2 and 3 only. This change makes Action Statement f consistent with the proposed LCO 3.4.3.2.f.

5. Surveillance Requirement 4.4.3.2.1.c

The proposed Surveillance Requirement 4.4.3.2.1.c changes the drywell floor drain sump level monitoring frequency in Operational Condition 1 from at least once per 4 hours to at least once per 12 hours. The current 4 hour drywell floor drain sump level monitoring frequency is retained in Operational Conditions 2 and 3. A note is also added to ensure that the 25% surveillance interval extension provision in TS 4.0.2 is not applicable to the surveillance requirement in Operational Condition 1. The change to the drywell floor drain sump level monitoring frequency for Operational Condition 1 is equivalent to the NRC staff position on RCS leakage monitoring intervals discussed in GL 88-01, Supplement 1.

6. Surveillance Requirement 4.4.3.2.1.b

The proposed Surveillance Requirement 4.4.3.2.1.b changes the primary containment sump flowrate monitoring frequency in Operational Condition 1 from at least once per 4 hours to at least once per 12 hours. The current 4 hour primary containment sump flowrate monitoring frequency is retained in Operational Conditions 2 and 3. A note is also added to ensure that the 25% surveillance interval extension provision in TS 4.0.2 is not applicable to the surveillance requirement in Operational Condition 1. This change makes the Surveillance Requirement 4.4.3.2.1.b monitoring frequency consistent with the frequency proposed in Surveillance Requirement 4.4.3.2.1.c.

7. Bases 3/4.4.3.2

The proposed Bases 3/4.4.3.2 includes a statement that the proposed unidentified leakage rate of increase limit and surveillance interval for Operational Condition 1 meet the guidance of GL 88-01 and GL 88-01, Supplement 1. This change provides the basis for the unidentified leakage rate of change limit proposed in LCO 3.4.3.2.e, LCO 3.4.3.2.f, and the proposed surveillance interval in Surveillance Requirement 4.4.3.2.1.c.

DISCUSSION

RCS operational leakage TS 3/4.4.3.2 ensures that the integrity of the reactor coolant pressure boundary is maintained in Operational Conditions 1, 2, and 3 by providing limits for pressure boundary leakage, total leakage, unidentified leakage, and pressure isolation valve leakage. RCS leakage is determined to be within the TS limits by:

1. Monitoring primary gaseous radioactivity;
2. Monitoring the primary containment sump flowrate for identified leakage and the drywell floor drain sump level for unidentified leakage;
3. Monitoring the reactor vessel head flange leak detection system;
4. Leak testing pressure isolation valves; and
5. Verifying the high/low pressure interface valve leakage monitor alarm setpoints.

The proposed TS changes deal with: (1) the RCS unidentified leakage rate of change limit, and (2) the surveillance intervals for monitoring the primary containment sump flowrate and drywell floor drain sump level. The purpose of LCO 3.4.3.2.e, TS 3.4.3.2 Action Statement e, and Surveillance Requirement 4.4.3.2.1.c is to provide the unidentified leakage rate of change limit and surveillance interval needed to maintain the integrity of the RCS and, in



particular, type 304 and 316 austenitic stainless steel piping that is subject to high stress or that contains relatively stagnant, intermittent, or low flow fluids. GL 88-01 and GL 88-01, Supplement 1, provide both the NRC Staff positions on leakage limits and the surveillance intervals to fulfill this purpose.

The proposed change to LCO 3.4.3.2.e brings the unidentified leakage rate of change limit into agreement with the subject NRC position as defined in GL 88-01. The proposed leakage rate of change limit is one-sixth of the existing TS limit. Therefore, the proposed limit enhances the ability to identify and take action to correct a RCS leak in austenitic stainless steel piping because the proposed limit is sensitive to a much smaller rate of change in unidentified leakage. Therefore, action will be taken to identify the leak source and take corrective measures earlier than the current TS require.

The applicability of the proposed change to LCO 3.4.3.2.e is limited to Operational Condition 1. This is necessary to ensure that the expected increase in unidentified leakage associated with reactor vessel heatup and pressurization during routine startups does not cause an unnecessary shutdown due to temporarily exceeding the 2 gpm increase in unidentified leakage over 24 hours limit. The unidentified leakage associated with a routine startup attains a steady state value and is not indicative of weld or pipe failures due to IGSCC. Leakage due to IGSCC induced weld or pipe cracks would continue to increase as the plant operates in Operational Condition 1 and, therefore, would be limited by the proposed LCO 3.4.3.2.e.

The proposed LCO 3.4.3.2.f maintains the current unidentified leakage rate of change limit and ensures that the RCS is monitored for IGSCC related failures throughout startup.

The proposed change to TS 3.4.3.2 Action Statement e makes it consistent with the proposed change to LCO 3.4.3.2.e.

The proposed TS 3.4.3.2 Action Statement f maintains the same requirements contained in the current Fermi 2 TS 3.4.3.2 Action Statement e except that it limits applicability to Operational Conditions 2 and 3. This change is consistent with the proposed LCO 3.4.3.2.f described above.

The proposed change to Surveillance Requirement 4.4.3.2.1.c for Operational Condition 1 is in agreement with the NRC position on RCS leakage monitoring intervals described in GL 88-01, Supplement 1. In GL 88-01, Supplement 1, the NRC concluded that a 4 hour monitoring interval (the current interval in Fermi 2 TS) would create an unnecessary hardship for plant operators. The NRC has determined that the once per shift, not to exceed 12 hours monitoring interval is an acceptable alternative that facilitates the implementation of GL 88-01. The proposed 12 hour surveillance interval meets both the once per shift and the 12 hour maximum surveillance interval requirements of GL 88-01, Supplement 1, because the shift surveillance interval defined in Fermi 2 TS Table 1-1, "Surveillance Frequency Notation", is at least once per 12 hours. Therefore, the proposed surveillance interval is equivalent to the GL 88-01, Supplement 1

interval. The addition of the note, "The provisions of Specification 4.0.2 are not applicable to the surveillance requirement in Operational Condition 1", to Surveillance Requirement 4.4.3.2.1.c ensures that the 25% maximum allowable extension is not applied to the surveillance interval.

Retaining the 4 hour surveillance interval in Surveillance Requirement 4.4.3.2.1.c for Operational Conditions 2 and 3 ensures that the RCS unidentified leakage rate of change is measured at a frequency compatible with the 2 gpm increase over 4 hour limit in the proposed LCO 3.4.3.2.f and TS 3.4.3.2 Action Statement f.

The proposed change to Surveillance Requirement 4.4.3.2.1.b makes its monitoring frequency consistent with the frequency proposed in Surveillance Requirement 4.4.3.2.1.c as discussed above. There is no individual RCS identified leakage limits in TS. Identified leakage is used, along with unidentified leakage, to demonstrate that the total leakage is within the 25 gpm total leakage limit of LCO 3.4.3.2.c. More frequent monitoring in Operational Condition 1 is unnecessary because quantifying identified leakage by itself will not demonstrate that RCS operational leakage is within the limits of LCO 3.4.3.2.

The proposed change to TS Bases 3/4.4.3.2 identifies GL 88-01 and GL 88-01, Supplement 1, as the documents that provide the bases for the unidentified leakage rate of change limit and the surveillance interval proposed for Operational Condition 1.

The proposed amendment does not change the remaining TS 3.4.3.2 limiting conditions for operation (or their respective action statements) that concern no RCS pressure boundary leakage, the 5 gpm unidentified leakage limit, the 25 gpm total leakage limit, or the RCS pressure isolation valve limit.

Based on the above discussion, DECo finds the proposed TS changes acceptable.

#### NO SIGNIFICANT HAZARDS CONSIDERATION

In accordance with 10CFR50.92, DECo has made a determination that the proposed amendment involves no significant hazards considerations. To make this determination, DECo must establish that operation in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety.

The proposed TS changes deal with: (1) the RCS unidentified leakage rate of change limit and (2) the surveillance intervals for monitoring the primary containment sump flowrate and drywell floor drain sump level. The purpose of LCO 3.4.3.2.e, 3.4.3.2 Action Statement e, and Surveillance Requirement 4.4.3.2.1.c is to provide the unidentified leakage rate of change limit and

surveillance interval needed to maintain the integrity of RCS type 304 and 316 austenitic stainless steel piping that is subject to high stress or that contains relatively stagnant, intermittent, or low flow fluids. GL 88-01 and GL 88-01, Supplement 1, provide both the NRC Staff position on leakage limits and the surveillance intervals to fulfill this purpose.

This amendment:

- 1) Does not involve a significant increase in the probability or consequences of an accident previously evaluated. This amendment does not alter the design, function, or operation of the RCS or the RCS leakage detection system. The proposed changes for the RCS unidentified leakage rate of change limit and the drywell floor drain sump level monitoring interval proposed for Operational Condition 1 are based on the NRC staff positions in GL 88-01 and GL 88-01, Supplement 1. Limiting the applicability of the GL 88-01 based RCS unidentified leakage rate of change limit to Operational Condition 1 ensures that the reactor is not unnecessarily shut down if the increase in unidentified leakage experienced during routine plant startups temporarily exceeds the 2 gpm over 24 hour limit. The proposed RCS unidentified leakage rate of change limit for Operational Conditions 2 and 3 maintains the current limit and ensures that the RCS is monitored for IGSCC related failures throughout the reactor startup. The proposed TS ensures that, when the unit is in Operational Condition 1, action is taken to identify and correct RCS leaks in austenitic stainless steel piping earlier because the proposed limit is one-sixth of the current limits. In GL 88-01, Supplement 1, the NRC found that a 4 hour monitoring interval (the current interval in Fermi 2 TS) creates an unnecessary hardship for plant operators. The NRC has determined that the once per shift, not to exceed 12 hours monitoring interval is an acceptable alternative that facilitates the implementation of GL 88-01 leak detection requirements. The proposed 12 hour surveillance interval for Operational Condition 1 meets both the once per shift and the 12 hour maximum surveillance interval requirements of GL 88-01, Supplement 1, because it is in accordance with the shift surveillance interval definition in Fermi 2 TS. The proposed changes also ensure that the 12 hour surveillance interval for Operational Condition 1 cannot be extended by incorporating the requirement that TS 4.0.2 is not applicable. The current 4 hour surveillance interval in Operational Conditions 2 and 3 is retained and is more conservative than the requirements of GL 88-01, supplement 1. The proposed change to the primary containment sump flow rate monitoring interval in Operational Condition 1 does not change the total leakage limit in TS 3/4.4.3.2 and is consistent with the proposed drywell floor drain sump level monitoring interval. The current primary containment sump flowrate monitoring interval in Operational Conditions 2 and 3 is not changed. The proposed changes to the TS Bases reference GL 88-01 and GL 88-01, Supplement 1 as the basis documents for the RCS unidentified leakage rate of change limit and unidentified leakage monitoring interval in Operational Condition 1 and, therefore, reflect the proposed LCO and Surveillance Requirements discussed above.

- 2) Does not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed amendment does not alter the configuration of the facility, plant operations, or the accident analysis assumptions. The proposed amendment does not change the methods by which RCS unidentified leakage is measured. In Operational Condition 1, action to identify and correct RCS leakage in austenitic stainless piping is taken for a smaller rate of change in RCS unidentified leakage. In Operational Conditions 2 and 3, the current Fermi 2 TS unidentified leakage rate of change limit is maintained. As stated above, the NRC has determined that the once per shift, not to exceed 12 hours monitoring interval for unidentified RCS leakage is an acceptable alternative that facilitates the implementation of GL 88-01. As stated above, the proposed 12 hour surveillance interval for Operational Condition 1 is equivalent to the NRC Staff position in GL 88-01, Supplement 1. The current 4 hour surveillance interval in Operational Conditions 2 and 3 is retained and remains more conservative than the GL 88-01, supplement 1 requirements. The proposed primary containment sump flow rate monitoring interval for Operational Condition 1 does not change the limit for total leakage in TS 3/4.4.3.2 and is consistent with the proposed drywell floor drain sump level monitoring interval. The current 4 hour surveillance interval for Operational Conditions 2 and 3 is not changed. The proposed changes to the TS Bases reference GL 88-01 and GL 88-01, Supplement 1, as the basis documents and therefore reflect the LCO and Surveillance Requirements proposed in this amendment request.
- 3) Does not involve a significant reduction in the margin of safety. For Operational Condition 1, the proposed amendment incorporates the more stringent RCS unidentified leakage rate of change limit required by GL 88-01. This limit is one-sixth of the current TS limit and is, therefore, more conservative. For Operational Conditions 2 and 3, the proposed change maintains the current Fermi 2 TS unidentified leakage rate of change limit. The proposed amendment also incorporates a drywell floor drain sump level monitoring surveillance interval for Operational Condition 1 that is equivalent to the interval found acceptable by the NRC in GL 88-01, Supplement 1. The current 4 hour surveillance interval in Operational Conditions 2 and 3 is retained and is more conservative than the requirements of GL 88-01, supplement 1. The proposed change to the primary containment sump flow rate monitoring interval in Operational Condition 1 does not change the limit for total leakage in TS 3/4.4.3.2 and is consistent with the proposed drywell floor drain sump level monitoring interval. The current primary containment sump flowrate monitoring interval for Operational Conditions 2 and 3 is not changed. The proposed changes to the TS Bases reference GL 88-01 and GL 88-01, Supplement 1 as the basis documents for the RCS unidentified leakage rate of change limit and unidentified leakage monitoring interval in Operational Condition 1 and, therefore, reflect the proposed LCO and Surveillance Requirements discussed above.

Based on the above, DECo has determined that the proposed amendment does not involve a significant hazards consideration.



#### ENVIRONMENTAL IMPACT

DECo has reviewed the proposed TS changes against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor significantly change the types or significantly increase the amounts of effluents that may be released offsite, nor significantly increase the individual or cumulative occupational radiation exposures. Based on the foregoing, DECo concludes that the proposed TS do meet the criteria given in 10 CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

#### CONCLUSION

Based on the evaluation above: 1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and 2) such activities will be conducted in compliance with the Commission's regulations and proposed amendments will not be inimical to the common defense and security or to the health and safety of the public.