

Detroit
Edison

Douglas R. Gipson
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March 25, 1996
NRC-96-0003

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

- References:
- 1) Fermi 2
Docket No. 50-341
NRC License No. NPF-43
 - 2) NRC letter to Detroit Edison, "Partial Denial and Issuance of Amendment Re: Charcoal Testing Standards for Control Room Emergency Filtration System and Standby Gas Treatment System for Fermi 2 (TAC No. M82788)", dated March 31, 1995
 - 3) Detroit Edison letter to NRC, "Proposed Technical Specification Change (License Amendment) -- Charcoal Testing Standards for Control Room Emergency Filtration System and Standby Gas Treatment System", NRC-93-0077, dated July 29, 1993

Subject: Proposed Technical Specification Change -- Charcoal Testing Standards for Control Room Emergency Filtration System and Standby Gas Treatment System

The Detroit Edison Company (Detroit Edison) hereby files an application to amend the Fermi 2 Technical Specifications. The proposed change modifies the charcoal testing standards for the Control Room Emergency Filtration System (CREFS) and the Standby Gas Treatment System (SGTS).

In Reference 2, the NRC did not approve the portion of a proposed Technical Specification change (Reference 3) to update the charcoal testing standards for these systems to more current standards. For the CREFS, the proposed change to allow testing of the charcoal with a non-standard face velocity was denied. For the SGTS, the staff found that the resulting testing requirements would allow an acceptance criteria that was not sufficiently conservative. In each case, the staff found that the

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proposed technical standard (ASTM D3803-1989) for performing the test to be acceptable but denied the change due to these unacceptable aspects.

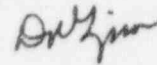
The purpose of this submittal is to propose Technical Specifications for CREFS and SGTS charcoal testing that conform to the staff positions set forth in Reference 2.

Detroit Edison has evaluated the proposed Technical Specification changes 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 Specification changes and concurs with the enclosed determinations. In accordance with 10CFR50.91, Detroit Edison has provided a copy of this letter to the State of Michigan.

This letter contains no specific commitments.

If you have any questions or comments, please contact Mr. Glen D. Ohlemacher of my staff at (313) 586-4275.

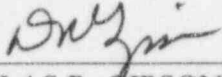
Sincerely,



Enclosure

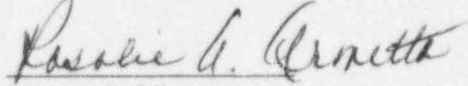
cc. T. G. Colburn
M. J. Jordan
H. J. Miller
A. Vogel
Supervisor, Electric Operators, Michigan
Public Service Commission - J. R. Padgett

I, DOUGLAS R. GIPSON, 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.



DOUGLAS R. GIPSON
Senior Vice President

On this 25th day of March, 1996 before me personally appeared Douglas R. Gipson, being first duly sworn and says that he executed the foregoing as his free act and deed.



Notary Public

ROSALIE A. ARMETTA
NOTARY PUBLIC - MONROE COUNTY, LA
MY COMMISSION EXPIRES 10/11/99

BACKGROUND

The proposed change modifies the charcoal testing standards for the Control Room Emergency Filtration System (CREFS) and the Standby Gas Treatment System (SGTS).

In Reference 2, the NRC did not approve the portion of a proposed Technical Specification change (Reference 3) to update the charcoal testing standards for these systems to more current standards. For the CREFS, the proposed change to allow testing of the charcoal with a non-standard face velocity was denied. For the SGTS, the staff found that the resulting testing requirements would allow an acceptance criteria not sufficiently conservative to assure sufficient system filtration. In each case, the staff found that the proposed technical standard (ASTM D3803-1989) for performing the test to be acceptable but denied the change due to these unacceptable aspects.

The purpose of this submittal is to propose Technical Specifications for CREFS and SGTS charcoal testing that conform to the staff positions set forth in Reference 2.

EVALUATION

The proposal makes changes to Surveillance Requirements (SRs) 4.6.5.3.b.2 and 4.6.5.3.c for SGTS and to SRs 4.7.2.1.c.2 and 4.7.2.1.d for the CREFS. The proposed Technical Specification change pages are attached. These changes are divided into two categories that are evaluated separately below:

Adoption of New Testing Protocol and Specification of Test Temperature and Relative Humidity Conditions

In Reference 2 the NRC staff evaluated the adoption of the ASTM D3803-1989 testing protocol and the specification of the test temperature and relative humidity. This evaluation is as follows:

The staff endorses both the adoption of the ASTM D3803-1989 testing protocol for the laboratory test for charcoal and the specification of the test temperature and relative humidity conditions. The adoption of the 1989 version of ASTM D3803 is consistent with the information in NRC Information Notice (IN) 87-32, "Deficiencies in the Testing of Nuclear-Grade Activated Charcoal." In IN 87-32, the staff identified problems associated with the laboratory testing protocols presented in the 1979 and 1986 versions of ASTM D3803 and in RDT-16-1T. In IN 86-76, "Problems Noted in Control Room Emergency Ventilation Systems," the staff identified the fact that some licensees were selecting an inappropriate temperature for the laboratory test of charcoal.

The licensee's incorporation of ASTM D3803-1989 into its SRs removes the existing testing protocol which over predicts the capability of charcoal to remove methyl and elemental forms of iodine. The switch to the 1989 version also provides a degree of confidence, both to the staff and to the licensee, that the results of the laboratory test are an adequate indication of the performance capability of the charcoal in the event of an accident. Therefore the staff has concluded that the use of the 1989 version and the stipulation of the test conditions for temperature and relative humidity are acceptable.

The temperature and relative humidity conditions specified are 30°C and 70% respectively. These values bound the expected accident conditions at the filter and are based upon the operation of heater units in the charcoal filtration train.

Based upon the above, Detroit Edison believes the adoption of ASTM D3803-1989 and the specification of temperature and relative humidity test conditions to be acceptable.

Specification of Test Bed Depth and Revision of Acceptance Criteria for SGTS

As also proposed in Reference 3, Detroit Edison is proposing to specify the charcoal bed depth for the SGTS and CREFS. This change clarifies that the entire bed depth is used to demonstrate a methyl iodine penetration less than the specified acceptance criteria.

For the CREFS, the change was denied because the NRC staff found the additional specification of a non-standard air velocity to be unacceptable. This proposal does not specify an air velocity thus requiring the standard velocity contained in the test protocol to be used.

For the SGTS, the staff found that the use of the existing acceptance criteria (0.175%) for methyl iodine penetration when tested in a 6 inch bed to be less conservative than the guidance of Regulatory Guide (RG) 1.52 Revision 2, Table 2, which specifies allowable penetration and assumed adsorber efficiency. The basis for the staff's denial is given below:

When Table 2 of RG 1.52 was developed, it was intended that the allowable penetration for the laboratory test would be higher than the efficiency assumed in the accident analysis to ensure that, at the end of the operating cycle, the charcoal will be capable of removing methyl iodine at an efficiency at least as great as that assumed in the staff's SE. In Table 2, the minimum allowable penetration for any system is 10% for a 2-inch bed. In order for the staff to ensure that the charcoal will perform in a manner which was assumed for the accident evaluation requires an acceptable test protocol and an acceptance criteria which will ensure a standard of excellence (quality) associated with the charcoal. If the acceptance criteria for the laboratory test of charcoal permits an allowable penetration of 0.175% for a 6-

inch bed, this equates to a penetration of approximately 12% per 2-inch bed which falls above the maximum penetration of 10% per 2-inch bed which is presented in Table 2. Therefore, the staff has concluded that the licensee's proposed clarification is inappropriate and that the licensee should ensure that the SRs limit allowable penetration to 10% per 2-inch bed, which is consistent with RG 1.52.

For a 6 inch bed the maximum allowable penetration that equates to a maximum penetration of 10% per 2 inch bed is 0.100%. This is the proposed acceptance criteria for the SGTS charcoal.

In addition, the bed depths specified for the CREFS charcoal filter trains do not result in an allowed maximum penetration of greater than 10% per 2 inch bed.

Based upon the above, Detroit Edison believes the concerns expressed by the NRC staff in Reference 2 have been resolved and the proposed change to specify charcoal bed depths for SGTS and CREFS as well as to revise the SGTS charcoal acceptance criteria are acceptable.

NO SIGNIFICANT HAZARDS EVALUATION

Detroit Edison has concluded that the proposed changes to the Fermi 2 TS do not involve a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

1. The proposed TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated. By providing an improved protocol for charcoal testing the proposal provides greater assurance that the installed charcoal can perform its design function and, thus, the consequences of evaluated accidents remain valid. The method of laboratory analysis has no effect upon how the plant is operated, including the method of sample removal. Therefore, the probability of any evaluated accident is unchanged.
2. The proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposal has no effect on the manner of plant operation. The proposal does not involve any change to the plant design. Therefore, the change creates no new accident modes.
3. The proposed TS changes do not involve a significant reduction in a margin of safety. By providing an improved protocol for charcoal testing the proposal acts to maintain existing safety margins. The change to the SGTS charcoal acceptance criteria also acts to ensure that the existing margins, as discussed in Regulatory Guide 1.52, Revision 2, are maintained.

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

ENVIRONMENTAL IMPACT

Detroit Edison has reviewed the proposed Technical Specification changes against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not involve a significant hazards consideration, nor significantly change the types or significantly increase the amounts of effluents that may be released offsite. In addition the proposed changes do not involve a significant increase in 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.

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.

The proposed amendment is requested to be issued with a period of 45 days allowed for implementation.

PROPOSED TECHNICAL SPECIFICATION
CHANGES