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Detroit Edison



November 11, 1998
NRC-98-0145

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

- References: 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43
- 2) NRC Generic Letter No. 98-04,
"Potential for Degradation of the Emergency Core
Cooling System and the Containment Spray System
After a Loss-of-Coolant Accident Because of
Construction and Protective Coating Deficiencies
and Foreign Material in Containment",
dated July 14, 1998

Subject: Detroit Edison's 120 Day Response to Generic Letter No. 98-04

NRC Generic Letter 98-04 (Reference 2) requests licensees to submit information on their programs or plans for providing assurance that problems associated with material conditions of protective coatings inside nuclear power plant containments have been properly addressed. A written response is required within 120 days from the date of the generic letter.

The enclosure to this letter provides Detroit Edison's 120 day response to Generic Letter 98-04. Detroit Edison has participated in the Boiling Water Reactor Owners' Group (BWROG) Containment Coatings Committee for evaluating Service Level 1 protective coatings concerns inside containment.

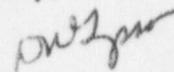
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The following new commitment is made in this letter:

- The next planned assessment of coatings will take place during the seventh refueling outage (RF07) scheduled for the year 2000.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson, Director, Nuclear Licensing at (734) 586-4258.

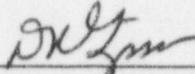
Sincerely,



Enclosure

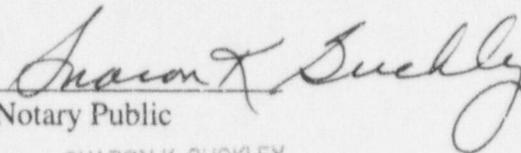
cc: A. J. Kugler
A. Vogel
Regional Administrator, Region III
NRC Resident Office
Supervisor, Electric Operators,
Michigan Public Service Commission

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, Nuclear Generation

On this 10th day of Nov., 1998 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
SHARON K. BUCKLEY
Notary Public, Monroe County, MI
My Commission Expires Sept. 22, 2000

Detroit Edison's Response to the NRC to Generic Letter No. 98-04

The following is Detroit Edison's response to Generic Letter 98-04. This response follows the format of NRC's request for information of Items (1) and (2) shown below:

NRC's Request for Information - Item (1):

[Provide] A summary description of the plant-specific program or programs implemented to ensure that Service Level 1 protective coatings used inside the containment are procured, applied, and maintained in compliance with applicable regulatory requirements and the plant-specific licensing basis for the facility. Include a discussion of how the plant-specific program meets the applicable criteria of 10 CFR Part 50, Appendix B, as well as information regarding any applicable standards, plant-specific procedures, or other guidance used for: (a) controlling the procurement of coatings and paints used at the facility, (b) the qualification testing of protective coatings, and (c) surface preparation, application, surveillance, and maintenance activities for protective coatings. Maintenance activities involve reworking degraded coatings, removing degraded coatings to sound coatings, correctly preparing the surfaces, applying new coatings, and verifying the quality of the coatings.

Detroit Edison's Response:

Fermi 2 has implemented controls for the procurement, application, and maintenance of Service Level 1 protective coatings used inside the containment in a manner that is consistent with the licensing basis and regulatory requirements applicable to Fermi 2. The requirements of 10 CFR 50, Appendix B are implemented through Detroit Edison Specifications 3071-359 and 3071-360 which contain appropriate technical and quality requirements for the Service Level 1 coatings.

For Fermi 2, Service Level 1 coatings in the suppression chamber are subject to the requirements of ANSI N 101.4. [Note: This response applies to Service Level 1 coatings used in primary containment that are procured, applied and maintained by Fermi 2 or its contractors. This response does not address the relatively small amount of coatings applied by vendors on supplied equipment and miscellaneous structural supports.] The Service Level 1 coatings in the drywell are subject to the requirements of ANSI N 101.4 for concrete surfaces and for steel surfaces described in Updated Final Safety Analysis Report (UFSAR) Table 6.2-8. Adequate assurance that the applicable requirements for the procurement, application, inspection, and maintenance are implemented is provided by Fermi 2 procedures and programmatic controls. A description of Fermi's plant specific programs are provided below:

- a) Service Level 1 coatings used for new applications or repair/replacement activities are procured from a vendor(s) with a quality assurance program meeting the applicable requirements of 10 CFR 50, Appendix B. The applicable technical and quality requirements which the vendor is required to meet are specified by Fermi 2 in procurement documents. Acceptance activities are conducted in accordance with procedures which are consistent with

ANSI N 45.2 requirements (e.g., receipt inspection, source surveillance). These technical and quality specifications combined with appropriate acceptance activities provides adequate assurance that the coatings received meet the requirements of the procurement documents.

- b) The qualification testing of Service Level 1 coatings used for new applications or repair/replacement activities inside containment meets the applicable portions of ANSI N 5.12, ANSI N 45.2, and ANSI N 101.4 and Regulatory Guide 1.54. These coatings, including any substitute coatings, have been evaluated to meet the above standards and regulatory requirements.
- c) The surface preparation, application and surveillance during installation of Service Level 1 coatings used for new applications or repair/replacement activities inside containment meets the applicable portions of the above standards and regulatory requirements. Where the requirements of the standards and regulatory commitments did not address or were not applicable to repair/replacement activities, they were performed in a manner consistent with the generally accepted practices for coating repair/replacement. These practices are described in various ASTM standards and coating practice guidelines. They were issued by industry organizations subsequent to those to which Fermi 2 had a regulatory commitment. Fermi 2 recognizes that the NRC has not formally endorsed many of the more recent ASTM standards or industry guidelines, but nonetheless, they provide useful information which can be applied to provide assurance that repair/replacement activities on Service Level 1 coatings are effective in maintaining the acceptability of the coatings.

Condition assessments of Service Level 1 coatings inside containment are periodically conducted in accordance with the Fermi 2 surveillance program. As localized areas of degraded coatings are identified, those areas are evaluated and scheduled for repair or replacement, as necessary. The periodic condition assessments, and the resulting repair/replacement activities, assure that the amount of Service Level 1 coatings which may be susceptible to detachment from the substrate is minimized.

NRC's Request for Information - Item (2):

[Provide] Information demonstrating compliance with Item (i) or Item (ii):

- (i) For plants with licensing-basis requirements for tracking the amount of unqualified coatings inside the containment and for assessing the impact of potential coating debris on the operation of safety-related SSCs during a postulated design basis LOCA, the following information shall be provided to demonstrate compliance:
 - a) The date and findings of the last assessment of coatings, and the planned date of the next assessment of coatings.
 - b) The limit for the amount of unqualified protective coatings allowed in the containment and how this limit is determined. Discuss any conservatism in the method used to determine this limit.

- c) If a commercial-grade dedication program is being used at your facility for dedicating commercial-grade coatings for Service Level 1 applications inside the containment, discuss how the program adequately qualifies such a coating for Service Level 1 service. Identify which standards or other guidance are currently being used to dedicate containment coatings at your facility; or,
- (ii) For plants without the above licensing-basis requirements, information shall be provided to demonstrate compliance with the requirements of 10 CFR 50.46b(5), "Long-term coating" and the functional capability of the safety-related SSCs as set forth in your licensing basis. If a licensee can demonstrate this compliance without quantifying the amount of unqualified coatings, this is acceptable. The following information shall be provided:
 - a) If commercial-grade coatings are being used at your facility for Service Level 1 applications, and such coatings are not dedicated or controlled under your Appendix B Quality Assurance Program, provide the regulatory and safety basis for not controlling these coatings in accordance with such a program. Additionally, explain why the facility's licensing basis does not require such a program.

Detroit Edison's Response:

This response is in reference to Item (i). Fermi 2 has a licensing basis requirement to track the amount of unqualified coatings inside the containment (Ref. UFSAR Table 6.2-8, "Primary and Secondary Containments Surface Coating Schedule") and for assessing the impact of potential coating debris on the operation of safety-related SSCs during a postulated design basis LOCA. The following information is provided to demonstrate compliance:

- a) The date of the latest condition assessment at Fermi 2 was October 1998. This assessment identified areas on the interior of the suppression pool (torus) needing coating repair. Coating repairs were performed in both the immersion area and the vapor area of the torus. The interior of the drywell shell had minor coating degradation which did not require immediate coating repair. The next planned assessment of coatings will take place during the next (seventh) refueling outage, which is scheduled for the year 2000.
- b) The limit for unqualified coatings of 73 lbm is documented in the Fermi 2 UFSAR Table 6.2-8 which is part of the current licensing basis. The initial plant licensing was consistent with applicable regulatory requirements, where the type and quantity of debris were not explicitly considered when the original calculations for the Emergency Core Cooling System (ECCS) strainer head loss were performed.

In response to NRC Bulletin 96-03, large passive replacement ECCS strainers were installed at Fermi 2 in September 1998. The following is a discussion of the licensing basis resolution with respect to the bulletin.

The design input to the ECCS strainer calculations for the amount of unqualified coatings, qualified coatings in steam/water jet zone of influence, and degraded qualified coatings in the containment (as identified from periodic visual inspections) is documented in the new ECCS strainer hydraulic calculations. The amount of these coating materials must be managed, in addition to the quantity of fibrous, particulate, and other miscellaneous debris, to ensure that the analyzed functional capability of the ECCS is not compromised.

The new ECCS pump suction strainers have been designed to perform satisfactorily in the presence of 100% of the containment coatings which are installed in the LOCA pipe break steam/water jet zone of influence. This amount of coating debris is determined in accordance with the methodology documented in the BWR Owners' Group Utility Resolution Guidance (URG) document (NEDO-32686), Section 3.2.2.2.1.1.

The strainer assemblies were designed to withstand a 100 lbm of coating debris. This amount accounts for potential debris which may result from coatings which are unqualified and/or degraded. Results of BWR Owners' Group LOCA testing of coupons representing unqualified coating systems provide compelling evidence that failure of typical unqualified coating systems which pass a visual inspection is highly unlikely in the first 30 minutes of the LOCA.

Only for the first 2 to 15 minutes of the LOCA event, depending upon the pipe break size, would suppression pool turbulence levels be adequate to maintain coating debris in suspension in the pool where it would be available for accumulation on the ECCS strainers. Since the coating debris would quickly settle to the bottom of the suppression pool after the turbulence subsides, none of the coating debris (if eventually released sometime after the first 30 minutes of the LOCA) would be available to accumulate on the strainers. In sizing the replacement ECCS strainers for Fermi 2, no credit was taken for the delayed release of coating debris; therefore, these designs are conservative with respect to the limit on this coating debris source. Fermi 2 is participating in the BWR Owners' Group Containment Coatings Committee and activities in progress are expected to result in an increase in the quantity of containment coating debris that can be accommodated on the strainers without challenging their functional capability.

- (c) Fermi 2 does not employ commercial grade dedication for Service Level 1 coatings inside containment.