



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 28, 2016

Mr. Keith Polson
Site Vice President - Nuclear Generation
DTE Electric Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: SAFETY EVALUATION REPORT WITH OPEN ITEMS RELATED TO THE
LICENSE RENEWAL OF FERMI 2 (TAC NO. MF4222)

Dear Mr. Polson:

By letter dated April 24, 2014, DTE Electric Company (DTE or the applicant) submitted a license renewal application (LRA) pursuant to Title 10 of the *Code of Federal Regulations* Part 54, to renew operating license NPF-43 for Fermi Nuclear Power Plant, Unit 2 (Fermi 2), for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff determined that the LRA was complete and acceptable for docketing on June 11, 2014.

The staff has reviewed the Fermi 2 LRA and has developed the enclosed "Safety Evaluation Report with Open Items Related to the License Renewal of Fermi 2" (ML16027A270), hereinafter referred to as the Safety Evaluation Report (SER). This SER reflects the status of the staff's review of the LRA to date, requests for additional information (RAIs), and the applicant's responses to the staff's RAIs and other questions related to the LRA through December 15, 2015, unless otherwise noted, and identifies open items remaining in the review.

The staff has identified 1 open item in its review, which must be resolved before it can make a final determination on the application. SER Section 1.5 includes the open item with a summary of information required to resolve each issue. The open item has an associated RAI described below. Despite active efforts to reach technical resolution, the staff's review of this issue continues, pending resolution of this RAI.

Open Item 4.3.3-1: Effects of Reactor Water Environment on Fatigue Life

By letter dated September 24, 2015, the applicant provided its response to RAI 4.3.3-3. In this letter, the applicant stated that there are locations where the environmentally assisted fatigue (EAF) correction factors (F_{en}) were recalculated using average transient temperatures or maximum operating temperatures. The RAI 4.3.3-3 response also states that these F_{en} factors were recalculated in a manner consistent with NUREG/CR-6909, "Effect of LWR Coolant Environments on the Fatigue Life of Reactor Materials."

The staff and applicant held a telephone conference call on December 15, 2015, to discuss and clarify the applicant's response to RAI 4.3.3-3. Specifically, the topic of the telephone conference was to clarify the manner in which the average temperatures were calculated to confirm consistency with NUREG/CR-6909. During the telephone conference call, the applicant

described the methods used to calculate average temperatures. Based on these descriptions, the staff determined that the applicant's average temperature calculations were not always consistent with the guidance in NUREG/CR-6909 when the minimum temperature is below the temperature threshold for a given material. This may result in the underestimation of both the F_{en} factors and the resulting EAF cumulative usage factors (CUF_{en}) for some locations.

By letter dated January 14, 2016, the staff issued RAI 4.3.3-3a requesting that the applicant assess the impact of revising the evaluations to use the correct determination of average temperature in a manner consistent with NUREG/CR-6909 and submit a description of the impact of this revision to the previous screening and F_{en} evaluation results for staff review. The staff stated that the assessment should include a description of whether the revised average temperature calculations impact the selection of sentinel locations.

In accordance with the schedule for completing the review of Fermi 2 LRA, the applicant is requested to review the enclosed SER, verify its accuracy, and provide comments to the staff within 30 days from the date of this letter. The next milestone for this project is the Advisory Committee on Reactor Safeguards Subcommittee meeting on **March 2, 2016**.

If you have any questions regarding this matter, please contact the license renewal project manager, Ms. Meléndez-Colón, at 301-415-3301 or by e-mail at Daneira.Melendez-Colon@nrc.gov.

Sincerely,

/RA/

Christopher G. Miller, Director
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosure:
As stated

cc: Listserv

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Letter to K. Polson from C. Miller Dated January 28, 2016

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