



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

May 13, 2015

**LICENSEE:** DTE Electric Company

**FACILITY:** Fermi 2

**SUBJECT:** SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON MARCH 17, 2015, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND DTE ELECTRIC COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION, SET 29 PERTAINING TO THE FERMI 2 LICENSE RENEWAL APPLICATION (TAC NO. MF4222)

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of DTE Electric Company (DTE or the applicant) held a telephone conference call on March 17, 2015, to discuss and clarify the staff's draft request for additional information (DRAI) 3.2.2.2-1a concerning the Fermi 2 license renewal application. The telephone conference call was useful in clarifying the intent of the staff's DRAI.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains the DRAI discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

**/RA/**

Daneira Meléndez-Colón, Project Manager  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures:

1. List of Participants
2. Summary of Telephone Conference Call

cc w/encls: Listserv

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TELEPHONE CONFERENCE CALL  
FERMI 2  
LICENSE RENEWAL APPLICATION

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MARCH 17, 2015

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SUMMARY OF TELEPHONE CONFERENCE CALL  
FERMI 2  
LICENSE RENEWAL APPLICATION  
MARCH 17, 2015

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of DTE Electric Company (DTE or the applicant) held a telephone conference call on March 17, 2015, to discuss and clarify the following draft request for additional information (DRAI) concerning the Fermi 2 license renewal application (LRA).

**DRAI 3.2.2.2-1a**

Background:

By letter dated February 5, 2015, DTE responded to an initial request for additional information (RAI) regarding spray nozzles in the reactor heat removal (RHR) system, which are being managed by the Water Chemistry – BWR Program. For the drywell spray headers, the response confirms that the portions inside the drywell are not safety-related and there is no flow control function for the associated spray nozzles. For the suppression chamber spray nozzles, the response states that the suppression pool is inerted to less than 4 percent oxygen during power operation which reduces the potential for corrosion. The response also describes the quarterly surveillance test on the suppression chamber spray system and states that greater-than-minimum flow rates were achieved during every surveillance test for the last 4 years. The response also states that if significant blockage were to develop, the flow rates through the suppression chamber spray header would indicate a decreasing trend. In addition, the response describes the 5-year surveillance test that verifies the drywell spray nozzles are unobstructed. The response concludes that the LRA did not need to be revised.

Issue:

As noted in the initial RAI, the LRA defines “flow control” as “provide control of flow rate or establish a pattern of spray.” The RHR system spray nozzles in LRA Table 3.2.2-2, which show an intended function of “flow control,” only list “loss of material” as the aging effect requiring management. While the staff recognizes that loss of material in a spray nozzle may affect its spray pattern, loss of material would only tend to allow higher flow rates, and the RAI response does not include any discussion regarding activities to monitor nozzle spray patterns. Verifying the total flow into the suppression chamber does not confirm “flow control” for individual nozzles. Based on the RAI response, it remains unclear to the staff how only managing “loss of material” will address the “flow control” function for individual spray nozzles due to potential plugging from corrosion products. The staff notes that for other aging management review (AMR) items the LRA includes “fouling” as an aging effect requiring management, while the Generic Aging Lessons Learned (GALL) Report considers “fouling” as an aging mechanism. As it relates to nozzle plugging, the staff considers “fouling” to be an appropriate aging effect.

The staff notes that containment inerting to less than 4 percent oxygen appears to be the only basis provided in the RAI response that relates to a lack of corrosion product accumulation due to periodic wetting and drying of upstream steel piping. Although the inerted atmosphere may

ENCLOSURE 2

reduce the amount of corrosion, the staff concludes that there is still sufficient oxygen to support ongoing general corrosion in the steel piping upstream of the nozzles. In addition, a relatively low level of oxygen in the water within the system is sufficient to cause ongoing corrosion issues within the suppression pool or attached steel piping. The staff notes the operating experience included in the Fitzpatrick license renewal safety evaluation report (ADAMS Accession No. ML080250372) discusses blockage in some spray nozzles found during past surveillance tests. Based on the above, the response did not provide sufficient bases to establish that corrosion product accumulation from upstream steel piping cannot cause flow blockage in the suppression chamber nozzles.

In its review of the response, the staff notes that blockage for the suppression chamber spray nozzles is to some degree being managed through various surveillance activities. However, the only program credited in the LRA for the nozzles is the Water Chemistry Control – BWR Program, which does not include these surveillance activities. In addition, activities in the One Time Inspection Program to confirm the effectiveness of the Water Chemistry Control – BWR Program, only include fouling as it relates to reduction of heat transfer and do not address fouling as it relates to plugging of spray nozzles.

The staff also notes that the One Time Inspection Program currently includes inspections of internal and external surfaces of the piping in several systems that pass through the waterline region of the suppression pool. However, neither the suppression pool spray piping nor the spray nozzles are included in those activities. In that regard, the suppression pool spray piping is different than most other piping because it is periodically wetted during surveillance activities, but the water will drain between tests and the inside will be exposed to the suppression pool atmosphere. As discussed in NRC Information Notice 2013-06, “Corrosion in Fire Protection Piping Due to Air and Water Interaction,” piping systems filled with water or kept completely dry are not as susceptible to internal corrosion as piping partially filled with water and air; however, even a properly designed system is susceptible to corrosion when it is filled with water numerous times because of testing. The staff acknowledges that this information notice only addressed fire water system piping, but there is some commonality with potential problems in the suppression pool spray piping.

As required by 10 CFR 54.21(a)(1), the Integrated Plant Assessment must “demonstrate that the effects of aging will be adequately managed” for each component within the scope of license renewal. While the RAI response discusses activities that could be credited for verifying that the intended functions of the suppression chamber spray nozzles will be maintained consistent with the current licensing basis, these activities were not included in the LRA, and therefore, cannot be credited during the staff’s review.

If the surveillance activities discussed in the RAI response will be credited for managing the effects of aging, then they need to be described in the LRA. However, if the current suppression chamber spray header surveillances will be credited, then several additional aspects may need to be addressed. It is not clear to the staff that only trending of the flow rate through the spray header would be sufficient to identify flow blockage. Unless individual spray nozzles are being verified to be unobstructed (which, based on DTE’s RAI response, is performed for the nonsafety-related drywell spray nozzles that do not require aging management), it is not clear to the staff how other activities can demonstrate that the effects of

aging will be adequately managed so that the “flow control” intended function of the spray nozzles will be maintained consistent with the current licensing basis.

Request:

Confirm that all portions of the suppression pool spray piping will drain such that an air-to-water interface does not exist inside the piping. Provide the bases to demonstrate that fouling does not need to be managed for the suppression chamber spray nozzles in order to adequately maintain the “flow control” intended function of the spray nozzles consistent with the current licensing basis. As an alternative, provide an appropriate AMR item that addresses the aging effects associated with the spray nozzle “flow control” intended function. If applicable, include a description of the associated aging management activities that are either an enhancement to an existing program or a plant-specific aging management program.

Discussion:

The applicant noted a minor error with the numbering of the draft RAI. The staff agreed to revise the draft RAI number to 3.2.2.2-1a.

The applicant provided clarification on its response to RAI 3.2.2.2-1, dated February 5, 2015.

The staff provided clarification related to its concern in draft RAI 3.2.2.2-1a. The staff stated that it will revise the draft RAI to clarify the staff’s concerns and request.

The applicant understands the staff’s concerns and will provide a response to the RAI.

This request will be sent as a formal RAI pending its revision. A mutually agreeable date for the response will be within 40 days from the date of the official letter.