



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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December 22, 2014

Mr. Vito Kaminskas
Site Vice President - Nuclear Generation
DTE Electric Company
Fermi 2 - 280 OBA
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
FERMI 2 LICENSE RENEWAL APPLICATION – SET 18 (TAC NO. MF4222)

Dear Mr. Kaminskas:

By letter dated April 24, 2014, DTE Electric Company (DTE or the applicant) submitted an application pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54, to renew the operating license NPF-43 for Fermi 2, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These requests for additional information were discussed with Ms. Lynne Goodman, and a mutually agreeable date for the response is January 30, 2015. If you have any questions, please contact me at 301-415-3301 or by e-mail at Daneira.Melendez-Colon@nrc.gov.

Sincerely,

/RA/

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

Docket No. 50-341

Enclosure:
Requests for Additional Information

cc w/encl: Listserv

December 22, 2014

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Site Vice President - Nuclear Generation
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FERMI 2, LICENSE RENEWAL APPLICATION – SET 18 (TAC NO. MF4222)

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**FERMI 2
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION SET 18
(TAC NO. MF4222)**

RAI B.1.31-1

Background:

The applicant stated that license renewal application (LRA) aging management program (AMP) B.1.31, "Non-EQ [Environmental Qualification] Insulated Cables and Connections," will be consistent with the program described in NUREG-1801, Revision 2, "Generic Aging Lessons Learned (GALL) Report" (GALL Report), Section XI.E1, "Insulation Material for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." No exceptions or enhancements were identified by the applicant for LRA AMP B.1.31.

However, LRA AMP B.1.31, "Non-EQ Insulated Cables and Connections," states in the program description that adverse localized environments will be determined based on a plant spaces approach. Basis document, FERMI-RPT-12-LRD04, "Aging Management Program Evaluation Results – Electrical," also states in the program description that an adverse localized environment is a plant specific condition that will be determined based on a plant spaces approach. In addition, the AMP basis document, under program element "parameters monitored or inspected," states that, "[t]he adverse localized environment is a plant-specific condition that will be determined based on a plant spaces approach."

GALL Report AMP XI.E1, "Insulation Material for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements," states in part:

Adverse localized environments can be identified through the use of an integrated approach. This approach may include, but is not limited to, (a) the review of Environmental Qualification (EQ) zone maps that show radiation levels and temperatures for various plant areas, (b) consultations with plant staff who are cognizant of plant conditions, (c) utilization of infrared thermography to identify hot spots on a real-time basis, and (d) the review of relevant plant-specific and industry operating experience.

NUREG-1800, Revision 2, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (SRP-LR), Section 2.5.1, "Areas of Review," states in part:

For an electrical and I&C [instrumentation and control] system that is WSLR [within the scope of license renewal], an applicant may not identify the specific electrical and I&C components that are subject to an AMR [aging management review]. For example, an applicant may not "tag" each specific length of cable that is "passive" and "long-lived," and performs an intended function as defined in 10 CFR 54.4(b). Instead, an applicant may use the so-called "plant spaces" approach.

ENCLOSURE

Under the “plant spaces” approach, an applicant would identify all “passive,” “long-lived” electrical equipment within a specified plant space as subject to an AMR, regardless of whether these components perform any intended functions. For example, an applicant could identify all “passive,” “long-lived” electrical equipment located within the turbine building (“plant space”) as subject to an AMR for license renewal. In the subsequent AMR, the applicant would evaluate the environment of the turbine building to determine the appropriate aging management activities for this equipment.

Issue:

LRA AMP B.1.31 and FERMI-RPT-12-1 LRD04 (page 48) suggest that the “plant spaces” approach that reviews all buildings/areas, rooms within the scope of license renewal provides a means to determine potential adverse localized environments. The “plant spaces” approach is referenced in SRP-LR, Section 2.5, as a scoping and screening approach. SRP-LR Section 2.5.1 states that based on the spaces approach an applicant could evaluate plant environments to determine the appropriate aging management activities for the subject equipment.

The “plant spaces” approach proposed by the applicant is not referenced as an example of an integrated approach in either GALL Report AMP XI.E1 or the SRP-LR for the identification of an adverse localized environment. Additionally, the use of the “plant spaces” approach alone may not consider relevant plant specific and industry operating experience or other aspects for the identification of an adverse localized environment as described in GALL Report AMP XI.E1.

Request:

Explain how the use of the “plant spaces” scoping and screening approach, as described in SRP-LR Section 2.5.1, “Areas of Review,” was adopted to identify adverse localized environments consistent with the integrated approach described in GALL Report AMP XI.E1 including the use of EQ zone map reviews, consultations with plant staff, plant specific and industry operating experience, inspection, and testing (e.g., thermography).

RAI 3.5.2.2.1.3.1-1

Background:

Section 54.21(a)(3) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54 requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL Report and when evaluation of the matter in the GALL Report applies to the plant.

The AMR item in LRA Table 3.5.2-1 (LRA page 3.5-64) for component type “[s]teel elements (inaccessible areas): drywell shell; drywell head; drywell shell in sand pocket region” to manage the loss of material due to corrosion aging effect, makes reference to item 3.5.1-4 in LRA

Table 3.5.1 and AMR item II.B1.1.CP-63 in the GALL Report. Items 3.5.1-4 and 3.5.1-5 in LRA Table 3.5.1 refer to the further evaluation in LRA Section 3.5.2.2.1.3, item 1, that addresses loss of material due to general pitting, and crevice corrosion that could occur in steel elements of inaccessible areas for all types of pressurized water reactor and boiling water reactor containments.

Issue:

AMR item II.B1.1.CP-63 does not appear to exist in the GALL Report. Further, the component type description for the above mentioned AMR item in LRA Table 3.5.2-1 does not appear to include or address the inaccessible portion of the drywell shell embedded in the concrete floor of the drywell.

Request:

1. Identify the appropriate AMR item in the GALL Report and the corresponding item in LRA Table 3.5.1 that would apply to the material, environment, and aging effect being managed by the AMR item in LRA Table 3.5.2-1 mentioned above for inaccessible areas of the Fermi 2 steel drywell, including the portion of the shell embedded in concrete.
2. Update the affected LRA tables, as applicable, based on the response to Request 1.

RAI 3.5.2.2.1.3.1-2

Background:

Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL Report and when evaluation of the matter in the GALL Report applies to the plant.

LRA Section 3.5.2.2.1.3.1 addresses the further evaluation, corresponding to LRA Table 3.5.1, items 3.5.1-4 and 3.5.1-5, and corresponding GALL Report items related to the loss of material due to general, pitting, and crevice corrosion of the inaccessible areas of the drywell shell and torus of Mark I steel containments. SRP-LR Section 3.5.2.2.1.3.1 states, in part, “[t]he GALL Report recommends further evaluation of plant-specific programs to manage this aging effect if corrosion is indicated from the IWE examinations.”

Issue:

The further evaluation in LRA Section 3.5.2.2.1.3.1 does not address the plant-specific operating experience related to loss of material due to corrosion of the inaccessible areas of the drywell shell and torus of the Fermi 2 primary containment. The staff needs additional information to determine whether or not a plant-specific AMP is necessary to manage the aging effect.

Request:

1. Describe the plant-specific operating experience to-date related to the loss of material due to general, pitting, and crevice corrosion of the inaccessible areas of the Fermi 2 containment drywell shell and torus. Address its significance to justify whether or not a plant-specific program is necessary to manage the aging effect.
2. If a plant-specific AMP is needed, provide a description of the program. At a minimum, the description should include the AMP elements described in Branch Technical Position RLSB-1 in Appendix A.1 of the SRP-LR.
3. Update the affected LRA tables and sections, as appropriate.

RAI 3.5.2.2.1.3.2-1

Background:

Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL Report and when evaluation of the matter in the GALL Report applies to the plant.

LRA Section 3.5.2.2.1.3.2 addresses the further evaluation, corresponding to LRA Table 3.5.1, item 3.5.1-6, and GALL Report item II.B.1.1.CP-48, related to the loss of material due to general, pitting, and crevice corrosion of the steel torus shell of Mark I containments. SRP-LR Section 3.5.2.2.1.3.2 states, in part, “[t]he GALL Report recommends further evaluation of plant-specific programs to manage this aging effect if corrosion is significant.”

Issue:

The further evaluation in LRA Section 3.5.2.2.1.3.2 does not address the plant-specific operating experience related to loss of material due to corrosion of the torus shell. The staff needs additional information to determine whether or not a plant-specific AMP is necessary to manage the aging effect.

Request:

1. Describe the plant-specific operating experience to-date related to the loss of material due to general, pitting, and crevice corrosion of the interior (submerged areas and vapor space areas) and exterior surfaces of the Fermi 2 steel torus shell. Address its significance to justify whether or not a plant-specific program of the torus is necessary to manage this aging effect.
2. If a plant-specific AMP is needed, provide a description of the program. At a minimum, the description should include the AMP elements described in Branch Technical Position RLSB-1 in Appendix A.1 of the SRP-LR.

3. Update the affected LRA tables and sections, as appropriate.

RAI 3.5.2.2.1.3.3-1

Background:

Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL Report and when evaluation of the matter in the GALL Report applies to the plant.

LRA Section 3.5.2.2.1.3.3 addresses the further evaluation, corresponding to LRA Table 3.5.1, item 3.5.1-7, and GALL Report item II.B.1.1.CP-109, related to the loss of material due to general, pitting, and crevice corrosion of torus ring girders and downcomers of Mark I containments. SRP-LR Section 3.5.2.2.1.3.3 states, in part, “[t]he GALL Report recommends further evaluation of plant-specific programs to manage this aging effect if corrosion is significant.”

Issue:

The further evaluation in LRA Section 3.5.2.2.1.3.3 does not address the plant-specific operating experience related to loss of material due to corrosion of the torus ring girders and downcomers from the existing containment Inservice Inspection program (i.e., ISI program). The staff needs additional information to determine whether or not a plant-specific AMP is necessary to manage the aging effect.

Request:

1. Describe the plant-specific operating experience to-date related to the loss of material due to general, pitting, and crevice corrosion of the Fermi 2 steel torus ring girders and downcomers. Address its significance to justify whether or not a plant-specific program is necessary to manage this aging effect.
2. If a plant-specific AMP is needed, provide a description of the program. At a minimum, the description should include the AMP elements described in Branch Technical Position RLSB-1 in Appendix A.1 of the SRP-LR.
3. Update the LRA tables and sections, as appropriate.