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10 CFR 54

January 30, 2015
NRC-15-0012

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) DTE Electric Company Letter to NRC, "Fermi 2 License Renewal Application," NRC-14-0028, dated April 24, 2014 (ML14121A554)

3) NRC Letter, "Requests for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 18 (TAC No. MF4222)," dated December 22, 2014 (ML14350B358)

Subject: Response to NRC Request for Additional Information
for the Review of the Fermi 2 License Renewal Application – Set 18

In Reference 2, DTE Electric Company (DTE) submitted the License Renewal Application (LRA) for Fermi 2. In Reference 3, NRC staff requested additional information regarding the Fermi 2 LRA. The Enclosure to this letter provides the DTE response to the request for additional information.

No new commitments are being made in this submittal.

Should you have any questions or require additional information, please contact Lynne Goodman at 734-586-1205.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 30, 2015

Vito A. Kaminskas
Site Vice President
Nuclear Generation

Enclosure: DTE Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 18

cc: NRC Project Manager
NRC License Renewal Project Manager
NRC Resident Office
Reactor Projects Chief, Branch 5, Region III
Regional Administrator, Region III
Michigan Public Service Commission,
Regulated Energy Division (kindschl@michigan.gov)

Enclosure to
NRC-15-0012

Fermi 2 NRC Docket No. 50-341
Operating License No. NPF-43

DTE Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 18

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.*
>
> *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).

Response:

License Renewal Application (LRA) Section B.1.31, "Non-EQ Insulated Cables and Connections," description will be clarified to describe how adverse localized environments can be identified using an integrated approach. The Fermi 2 method of identifying adverse localized environments, as revised, is consistent with NUREG-1801.

LRA Revisions:

LRA Section B.1.31 is revised as shown on the following page. Additions are shown in underline and deletions are shown in strike-through.

B.1.31 NON-EQ INSULATED CABLES AND CONNECTIONS

Program Description

The Non-EQ Insulated Cables and Connections Program is a new condition monitoring program that provides reasonable assurance that intended functions of insulated cables and connections exposed to adverse localized environments caused by heat, radiation[1] and moisture can be maintained consistent with the current licensing basis through the period of extended operation. An adverse localized environment is a condition in a limited plant area that is significantly more severe than the plant design environment for the cable or connection insulation materials.

Accessible insulated cables and connections within the scope of license renewal installed in an adverse localized environment will be visually inspected for cable and connection jacket surface anomalies such as embrittlement, discoloration, cracking, melting, swelling, or surface contamination. The inspection of accessible cables will represent, with reasonable assurance, all cables and connections in the adverse localized environment.

~~An adverse localized equipment environment is a plant specific condition that will be determined based on a plant spaces approach.~~ NUREG-1800, Revision 2, Sections 2.5.1 and NUREG-1801, Revision 2, X1.E1 allow an integrated approach. Fermi 2 will utilize an integrated approach consisting of the following methods to determine adverse localized environments: the plant spaces method, review of environmental qualification documentation, plant layout drawings, aging management review, consultation with plant staff, utilization of temperature monitoring techniques, and review of operating experience. The plant spaces approach provides for a review and walkdown of all buildings and rooms in the scope of license renewal to determine potential adverse localized environments. The determination of a potential adverse localized equipment environment will be based on the most limiting temperature, radiation, or moisture conditions for the cables and connection insulation material located at Fermi 2. The evaluation of an adverse localized equipment environment will be based on the most limiting temperature, radiation, or moisture conditions for the cables and connection insulation material located within that plant space that has a potential adverse localized equipment environment.

This program will visually inspect accessible cables in an adverse localized environment at least once every ten years, with the first inspection prior to the period of extended operation.

This program will be implemented prior to the period of extended operation.

1. Reduced insulation resistance from an environment of radiation and air (oxygen) includes radiolysis, photolysis of organics, or radiation induced oxidation. Photolysis is limited to UV sensitive materials.

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.*

Response:

1. The aging management review (AMR) line item in the NUREG-1801 (GALL Report) for component type "Steel elements (inaccessible areas): drywell shell; drywell head; drywell shell in sand pocket region" for an air-indoor uncontrolled environment and aging effect of loss of material in License Renewal Application (LRA) Table 3.5.2-1 was intended to be II.B1.1.CP-43 rather than II.B1.1.CP-63. This line item is listed in NUREG-1801 under Mark I steel containments. Fermi 2 has a Mark I steel containment. An alternate line item is

II.B3.1.CP-113, which is listed under Mark III steel containments. This alternate line item is appropriate because it includes concrete as an environment, which addresses the inaccessible portion of the Fermi 2 drywell shell that is embedded in concrete. Line item 3.5.1-4 of LRA Table 3.5.1 remains the appropriate reference for the Table 1 item. The environment is revised to include concrete and the referenced NUREG-1801 item is revised to II.B3.1.CP-113.

2. LRA Table 3.5.2-1 will be revised as described in the response above.

LRA Revisions:

LRA Table 3.5.2-1 is revised as shown on the following page. Additions are shown in underline and deletions are shown in strike-through.

Table 3.5.2-1
Reactor/Auxiliary Building and Primary Containment
Summary of Aging Management Evaluation

Table 3.5.2-1: Reactor/Auxiliary Building and Primary Containment								
Component Type	**Intended Function**	**Material**	**Environment**	**Aging Effect Requiring Management**	**Aging Management Program**	**NUREG-1801 Item**	**Table 1 Item**	**Notes**
Steel elements (inaccessible areas): drywell shell; drywell shell in sand pocket region	EN, MB, PB, SSR	Carbon steel	Air – indoor uncontrolled or concrete	Loss of material	CII-IWE Containment Leak Rate	~~II.B1.1.CP-63~~ II.B3.1.CP-113	3.5.1-4	C

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.*

Response:

1. Torus: There are no inaccessible areas of the torus. Operating experience for the torus shell is addressed in the response to RAI 3.5.2.2.1.3.2-1.

   Drywell: The drywell interior shell is accessible for inspections, except for beneath the

concrete floor. License Renewal Application (LRA) Section B.1.12, under operating experience, states that "only one corrosion pit was detected in the drywell shell. The pit, which measured 0.02" x 0.04" x 0.093" deep, was detected during ISI examinations in 2000. The corrosion was attributed to a screw and uncoated washer that were in contact with an uncoated portion of the drywell shell in a beam seat area. The screw and washer were removed. The drywell shell in the area of the pit was coated in 2003." The exterior drywell shell is inaccessible, except for the drywell dome and to date there is no operating experience related to loss of material due to general, pitting, and crevice corrosion of the exterior of the drywell shell. As addressed in the response to RAI B.1.12-4 (NRC-15-0004, Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 14, dated January 15, 2015) UT measurements taken in 2014 of the drywell shell in the sand cushion area showed thicknesses above the design value, demonstrating no apparent loss after almost 30 years of operation.

In 2010, the moisture seal at the drywell floor to the primary containment shell interface was inspected and repaired. During this time, an inspection was performed on the normally inaccessible primary containment shell interface in these areas. There was no identified loss of material due to general, pitting, or crevice corrosion of the primary containment shell interface.

2. A plant-specific AMP is not needed, as loss of material due to corrosion in inaccessible areas has not been identified. DTE will continue to inspect and monitor in accordance with the Containment Inservice Inspection – IWE Program.

3. LRA Section 3.5.2.2.1.3 Item 1 is revised as indicated below. Additionally, LRA Tables 3.5.1 and 3.5.2-1 are revised to reflect that there are no inaccessible areas of the torus.

LRA Revisions:

LRA Section 3.5.2.2.1.3 Item 1 and LRA Tables 3.5.1 and 3.5.2-1 are revised as shown on the following pages. Additions are shown in underline and deletions are shown in strike-through.

3.5.2.2.1.3 Loss of Material due to General, Pitting and Crevice Corrosion

1. Loss of material due to general, pitting, and crevice corrosion could occur in steel elements of inaccessible areas for all types of PWR and BWR containments.

   The Fermi 2 containment is a BWR Mark I SCV. The containment is a carbon steel structure comprised of a drywell, a torus or suppression chamber, and a vent system connecting the drywell and the torus. A moisture barrier is provided where the steel shell becomes embedded in the concrete floor within the drywell. The SCV is inspected in accordance with the requirements of ASME Code Section XI, Subsection IWE. These inspections include a visual examination of the accessible interior and the exterior surfaces of the class MC components, parts and appurtenances of the SCV as well as visual inspection of the moisture barrier at the concrete-to-steel interface. The torus interior and exterior shell is accessible. The drywell interior shell is accessible, except for beneath the concrete floor. Loss of material due to general, pitting and crevice corrosion of the steel elements of accessible areas is managed by the Containment Inservice Inspection – IWE Program and the Containment Leak Rate Program (10 CFR Part 50, Appendix J Program). Interior concrete is monitored for cracks under the Structures Monitoring Program.

   To prevent corrosion of the lower part of the drywell shell, the interior and exterior surfaces are protected from contact with the atmosphere by complete concrete encasement. It is not credible for ground water to reach the drywell shell, assuming a crack in the concrete, because the concrete at this location is greater than eight feet thick and poured in multiple horizontal planes. The sand cushion area contains drains to protect the exterior surface of the drywell shell at the sand cushion interface from water that might enter the air gap. The exterior of the drywell shell has a galvanic corrosion protection, and inspection activities ensure that excessive moisture levels on the exterior portion of the steel containment drywell shell are identified. Therefore, significant corrosion of the drywell shell is not expected.

   Only one corrosion pit has been detected in the drywell shell during the history of the plant ISI examinations. The pit, which measured 0.02" x 0.04" x 0.093" deep, was detected during ISI examinations in 2000. The corrosion was attributed to a screw and uncoated washer that were in contact with an uncoated portion of the drywell shell in a beam seat area. The screw and washer were removed. The drywell shell in the area of the pit was coated in 2003. No loss of material was identified during the UT thickness measurements of the drywell shell in the vicinity of the sand cushion area in 2014.

   The continued monitoring of the Fermi 2 SCV structure for loss of material due to general, pitting, and crevice corrosion through the Containment Inservice Inspection – IWE Program and the Containment Leak Rate Program provides reasonable assurance that loss of material in inaccessible areas of Fermi 2 containment will be detected prior to a loss of an intended function.

Table 3.5.1
Summary of Aging Management Programs for Structures and Component Supports Evaluated in Chapters II and III of NUREG-1801

Table 3.5.1: Structures and Component Supports					
Item Number	**Component**	**Aging Effect/ Mechanism**	**Aging Management Programs**	**Further Evaluation Recommended**	**Discussion**
3.5.1-5	Steel elements (inaccessible areas): liner; liner anchors; integral attachments, Steel elements (inaccessible areas): suppression chamber; drywell; drywell head; embedded shell; region shielded by diaphragm floor (as applicable)	Loss of material due to general, pitting and crevice corrosion	ISI (IWE) and 10 CFR Part 50, Appendix J	Yes, if corrosion is indicated from the IWE examinations.	~~Consistent with NUREG-1801. The Containment Inservice Inspection – IWE and the Containment Leak Rate Programs manage the loss of material of steel elements (inaccessible areas) for the torus shell.~~ This item is not used. The torus shell steel elements are accessible and are addressed in Item Number 3.5.1-6. The loss of material for inaccessible areas of steel ~~components~~ drywell shell; drywell head; and drywell shell in sand pocket region are addressed in Item Number 3.5.1-4 (as applicable). Steel elements (inaccessible areas): liner; liner anchors; and integral attachments are applicable to PWR containments. For further evaluation, see Section 3.5.2.2.1.3 Item 1.

Table 3.5.2-1
Reactor/Auxiliary Building and Primary Containment
Summary of Aging Management Evaluation

Table 3.5.2-1: Reactor/Auxiliary Building and Primary Containment								
Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Item	Table 1 Item	Notes
~~Steel elements (inaccessible): torus shell~~	~~HS, PB, SSR~~	~~Carbon steel~~	~~Air – indoor uncontrolled or Expose to fluid environment~~	~~Loss of material~~	~~CII.IWE Containment Leak Rate~~	~~II.B1.2.CP-63~~	~~3.5.1-5~~	A

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.*

Response:

1. License Renewal Application (LRA) Section B.1.12, under operating experience, states that "one, ¼-inch diameter pit was identified in the torus wetted area during the history of the plant. The pit, a corrosion pit, was 0.0285 inches in depth." It also states that "an inspection was performed in 2012, when 100 percent of the torus wetted and vapor space was inspected

by qualified NDE inspectors. No pitting of the torus primary containment boundary was identified, and that during 2012, broken blisters, mechanical damage, and pinpoint rust areas were identified and repaired in the wetted areas of the torus. In the vapor region, all flaking paint was removed from the torus ring header, torus vacuum breaker valves, nitrogen supply lines, monorail rail, and torus walkway and handrail. Flaking or cracked coating was removed and protective coating was re-applied to the torus shell." No loss of material due to general, pitting, or crevice corrosion of the exterior surface of the Fermi 2 steel torus shell has been identified to date.

2. No plant-specific AMP is needed, since no significant corrosion has been experienced. The torus shell is monitored through the Containment Inservice Inspection – IWE Program.

3. LRA Section 3.5.2.2.1.3 Item 2 is revised as indicated below.

LRA Revisions:

LRA Section 3.5.2.2.1.3 Item 2 is revised as shown on the following page. Additions are shown in underline and deletions are shown in strike-through.

3.5.2.2.1.3 Loss of Material due to General, Pitting and Crevice Corrosion

2. Loss of material due to general, pitting, and crevice corrosion could occur in steel torus shell of Mark I containments.

The Fermi 2 containment is a BWR Mark I SCV. The containment is a carbon steel structure comprised of a drywell, a torus or suppression chamber, and a vent system connecting the drywell and the torus. The SCV, which includes the steel torus shell, is inspected in accordance with the requirements of ASME Code Section XI, Subsection IWE. These inspections include a visual examination of the accessible interior and the exterior surfaces of the class MC components, parts and appurtenances of the SCV, including the steel torus shell. Loss of material due to general, pitting and crevice corrosion of the steel elements of accessible areas is managed by the Containment Inservice Inspection – IWE Program and the Containment Leak Rate Program (10 CFR Part 50, Appendix J Program).

One ¼-inch diameter pit was identified in the torus wetted area during the history of the plant. In 2001, DTE identified the pit, a corrosion pit, that was 0.0265 inches in depth. During the 2012 inspection of the torus wetted and vapor spaces, no pitting of the torus primary containment boundary was identified. Pinpoint rust areas were identified and repaired in the wetted area of the torus. No loss of material due to general, pitting or crevice corrosion has been identified on the exterior surface of the Fermi 2 torus shell.

The continued monitoring of the Fermi 2 SCV, including the steel torus shell, for loss of material due to general, pitting, and crevice corrosion through the Containment Inservice Inspection – IWE Program and the Containment Leak Rate Program provides reasonable assurance that loss of material of the SCV, including the steel torus shell, will be detected prior to a loss of an intended function.

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.*

Response:

1. To date, operating experience has identified no loss of material due to general, pitting and crevice corrosion of the Fermi 2 steel torus ring girders and downcomers. DTE will continue

to monitor and inspect in accordance with the Containment Inservice Inspection – IWE Program.

2. A plant-specific AMP is not needed since corrosion has not been identified warranting a plant-specific AMP.

3. License Renewal Application (LRA) Section 3.5.2.2.1.3 Item 3 is revised as indicated below.

LRA Revisions:

LRA Section 3.5.2.2.1.3 Item 3 is revised as shown on the following page. Additions are shown in underline and deletions are shown in strike-through.

3.5.2.2.1.3 Loss of Material due to General, Pitting and Crevice Corrosion

3. Loss of material due to general, pitting, and crevice corrosion could occur in steel torus ring girders and downcomers of Mark I containments, downcomers of Mark II containments, and interior surface of suppression chamber shell of Mark III containments.

   The Fermi 2 containment is a BWR Mark I SCV. The containment is a carbon steel structure comprised of a drywell, a torus or suppression chamber, and a vent system connecting the drywell and the torus. The SCV, which includes the steel torus ring girders and downcomers, is inspected in accordance with the requirements of ASME Code Section XI, Subsection IWE. These inspections include a visual examination of the accessible interior and the exterior surfaces of the class MC components, parts and appurtenances of the SCV, including the steel torus ring girders and downcomers. Loss of material due to general, pitting and crevice corrosion of the steel elements of accessible areas is managed by the Containment Inservice Inspection – IWE Program. Operating experience has identified no loss of material due to general, pitting or crevice corrosion of the Fermi 2 steel torus ring girders or downcomers.

   The continued monitoring of the Fermi 2 SCV, including the steel torus ring girders and downcomers, for loss of material due to general, pitting, and crevice corrosion through the Containment Inservice Inspection – IWE Program provides reasonable assurance that loss of material of the SCV, including the steel torus ring girders and downcomers, will be detected prior to a loss of an intended function.