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DTE Energy

10 CFR 54

December 30, 2014
NRC-14-0083

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 4 (TAC No. MF4222)," dated November 26, 2014 (ML14321A752)

4) NRC Letter, "Requests for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 5 (TAC No. MF4222)," dated November 26, 2014 (ML14322A178)

5) NRC Letter, "Requests for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 6 (TAC No. MF4222)," dated November 26, 2014 (ML14322A203)

Subject: Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Sets 4, 5, and 6

In Reference 2, DTE Electric Company (DTE) submitted the License Renewal Application (LRA) for Fermi 2. In References 3 through 5, NRC staff requested additional information regarding the Fermi 2 LRA. The Enclosures to this letter provide the DTE responses to the requests 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 December 30, 2014

Kent C. Scott
Director – Work Management
For Vito A. Kaminskas

Enclosures:
1. DTE Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 4
2. DTE Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 5
3. DTE Response to NRC Request for Additional Information for the Review of the Fermi 2 License Renewal Application – Set 6

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 1 to
NRC-14-0083

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 4

RAI 2.3.3.1-1

Background

In License Renewal Application (LRA) Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs [systems, structures and components] Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue

On drawing LRA-M-5449 (H-6) the staff could not locate a seismic or equivalent anchor on nonsafety-related line M-5881-1 continued to drawing LRA-M-2032-1 (D-7), continued from LRA-M-2088 (B-4), and continued to I-2400-07 (D-8), to safety-related valve F180.

Request

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-5449 indicates a safety-nonsafety interface at the safety-related valve F180 (see H-5). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-5449, there is a seismic anchor located in area H-5 on the 1" line (5383-1) downstream of valve F180 before the 1" line connecting to valve F215 and continuing to LRA-M-2032-1.

Since the components subject to aging management review include the connected piping and supports up to the seismic anchor beyond the safety-nonsafety interface at valve F180 on LRA-M-5449, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.2-1

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-2082 (F-5) the staff could not locate a seismic or equivalent anchor on nonsafety-related line M-3584 continued to drawing LRA-M-2678 and to safety-related valve F014.

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2082 indicates a safety-nonsafety interface at the safety-related valve F014 (see F-5). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-2082, there is an equivalent anchor on the 1" line between valves F014, F009, and F010. For the supports that make up the equivalent anchor (i.e. at least two supports in each of three orthogonal directions), one support is just upstream of the tee to valves F009 and F010 while all the others are downstream of the tee. This ensures support of the safety-related piping up to and including valve F014.

Since the components subject to aging management review include the connected piping and supports up to the equivalent anchors beyond the safety-nonsafety interface at valve F014 on LRA-M-2082, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.2-2

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-2082 (F-3) the staff could not locate a seismic or equivalent anchor on nonsafety-related line M-3584 continued from drawing LRA-M-2678 and the plant air system to safety-related storage tank (C4101A001).

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2082 indicates a safety-nonsafety interface at the safety-related storage tank C4101A001 (see F-3). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

The safety-related storage tank C4101A001 is a base-mounted component and does not rely on the attached nonsafety-related piping to ensure seismic support. The nonsafety-related plant air supply line to the storage tank C4101A001 connects to the top of the vented tank.

Since the nonsafety-related line is not credited for seismic support of the base-mounted safety-related storage tank C4101A001 on LRA-M-2082, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.3-1

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an aging management review (AMR) by reviewing the results of the screening of components within the license renewal boundary. The staff noted during its review of the drawings and locations indicated in the table below (as supplied by the applicant) that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2083, location C-8	*In scope continuation to drawing I-2400-04. Drawing I-2400-04 not provided.*
LRA M-2084, location D-2	*In scope continuation to drawing I-2400-04. Drawing I-2400-04 not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawings LRA-M-2083 and LRA-M-2084 indicate continuations to I-2400-04 downstream of the safety-related valves F080B (see C-8) and F080A (see D-2), respectively.

The continuations from drawings LRA-M-2083 and LRA-M-2084 to drawing I-2400-04 were not provided (i.e. I-2400-04 is not an LRA drawing). Drawing I-2400-04 shows that the two piping lines from LRA-M-2083 and LRA-M-2084 continue through valves P3300F806 and P3300F807, respectively, then through sample roughing coolers P3300B010 and P3300B009,

respectively, and terminate at sample panel P33P405A. The piping, valves, and sample roughing coolers are in scope and subject to aging management review as identified in LRA Tables 2.3.3-17-11 and 3.3.2-17-11 under "piping", "valve body", and "cooler housing." Therefore, there are no additional component types subject to aging management review between the continuation to I-2400-04 and the sample panel and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.3-2

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawings LRA-M-2083 (C-8) and LRA-M-2084 (D-2) the staff could not locate seismic or equivalent anchors on the 10 CFR 54.4(a)(2) nonsafety-related line continued from safety-related valves F080B to drawing I-2400-04 (D-4) and F080A to drawing I-2400-04 (D-2), respectively.

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawings LRA-M-2083 and LRA-M-2084 indicate safety-nonsafety interfaces at the safety-related valves F080B (see C-8) and F080A (see D-2), respectively. As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-2083 (C-8) and LRA-M-2084 (D-2), the seismic design analysis demonstrates that the seismic boundaries are just past valves F080B and F080A, respectively. As shown on LRA-M-2084 (D-2), there is a transition to ¼" tubing just beyond valve F080A and the seismic design analysis excludes the ¼" tubing based on the moment of inertia ratio. The transition to ¼" tubing is not indicated on LRA-M-2083 (C-8), but the configuration is the same as shown on LRA-M-2084 (D-2).

Since the components subject to aging management review include the connected piping and supports up to the seismic design analysis boundaries for the safety-nonsafety interfaces at valves F080B and F080A on LRA-M-2083 and LRA-M-2084, respectively, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.4-1

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-2048 (H-4) the staff could not locate seismic anchors on nonsafety-related lines M-3631 (C-3) and M-3629 (B-5) to line M-3363 to safety-related valve F011.

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2048 indicates a safety-nonsafety interface at the safety-related valve F011 (see H-4). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-2048, there is a seismic anchor located in area H-4 on the 6" line (M-3363) upstream of the branch to line M-3354 and valve F039. The branch line M-3354 past valve F039 is included in scope and subject to aging management review to the end of the piping run in the reactor well.

Since the components subject to aging management review include the connected piping and supports up to the seismic and equivalent anchors beyond the safety-nonsafety interface at valve F011 on LRA-M-2048, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.4-2

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted during its review of drawing LRA-M-2048 (E-8), as supplied by the applicant, that the continuation of piping within the scope of license renewal was not provided for line M-3608.

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2048 indicates a continuation to M-2165 downstream of the boundary between the turbine building and reactor building (see E-8).

The continuation from drawing LRA-M-2048 to drawing M-2165 was not provided (i.e. M-2165 is not an LRA drawing). A review of drawing M-2165 and isometric M-3608-1 shows that the piping line from LRA-M-2048 connects to and terminates at the condenser hotwell. This section contains only "piping" components. This is consistent with the discussion in LRA Section 2.3.3.4 which describes the connections to the condenser that pass through the wall between the reactor building and the turbine building. The piping for the line continuing to M-2165 is in scope and subject to aging management review as identified in LRA Tables 2.3.3-17-6 and 3.3.2-17-6 under "piping." Therefore, there are no additional component types subject to aging management review between the continuation to M-2165 and the termination at the condenser hotwell and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.6-1

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted during its review of drawings, as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified. Drawing LRA-M-4615 shows safety related control air system lines to be within scope for 10 CFR 54.4(a)(1). However, portions of lines at several locations throughout the drawing show continuation to dampers (D-3, D-4, and C-6); to instrument racks (with comment "to I.R" at C-3, C-5, D-5, and D-7); to solenoid valves (with comment "to E/V" at location D-5 through D-7 and C08); and to positioners (B-4 and B-8) without actually showing these components; therefore, acceptable scoping of SSCs could not be verified.

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Information on the location of the aging management review (AMR) screening (license renewal) boundary for the drawing locations identified in this RAI is provided in the table below. The following "General Information" explains the relationship between the AMR screening process and the use of License Renewal Application (LRA) drawings.

General Information

The AMR screening process is described in LRA Section 2.1.2.

"NEI 95-10 (Ref. 2.1-6) provides industry guidance for screening structures and components to identify the passive, long-lived structures and components that support an intended function. The screening process for Fermi 2 followed the recommendations of NEI 95-10."

The screening of mechanical components that meet the criteria for 10 CFR 54.4(a)(1) and 10 CFR 54.4(a)(3) was accomplished using the Fermi 2 equipment database, facilitated by the use of site drawings. Defining a system by the components in the database is consistent with the evaluations performed for maintenance rule scoping by the site, as stated in LRA Section 2.1.1.

For the screening of mechanical components that meet the criteria for 10 CFR 54.4(a)(2) for spatial interactions, the location of the components is a primary consideration. See LRA Section 2.1.2.1.2 for a further discussion of screening for components subject to aging management review based on the criterion of 10 CFR 54.4(a)(2) and the possibility of spatial interaction. This LRA section lists the site structures that contain safety-related components. Components that are not located in one of these structures cannot meet the criterion of 10 CFR 54.4(a)(2) with the possibility of spatial interaction. Therefore, the AMR screening boundary is established based on the criterion of 10 CFR 54.4(a)(2) assuming that spatial interaction can occur anywhere within a plant space or area defined by defined by walls, floors and ceilings or an enclosure that contains the equipment (such as a radiation monitor housing). In some cases, these boundaries cannot be depicted on the LRA flow diagram drawings. Thus, boundaries for systems using the yellow highlighting for the 10 CFR 54.4(a)(2) intended function cannot always be clearly delineated on LRA drawings.

Use of the LRA drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams.

License Renewal Screening Boundary Information for Drawing LRA-M-4615

In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the screening boundary that have not been included in the AMR for that system. None of the continuations cited below have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation.

Continuations to Dampers from LRA-M-4615	
LRA-M-4615 Coordinates: C-4, C-6 D-3, D-4, D-5, D-6, D-7	For each of the continuations to dampers shown on LRA-M-4615, the identified damper appears on either LRA-M-2751 or LRA-M-2847. The compressed air system components that support operation of these dampers do not appear on these drawings. A review of the isometric drawings referenced on LRA-M-4615 showed there are no additional component types in these lines. Therefore, the passive compressed air pressure boundary components (valves, tubing, piping) supporting these dampers are subject to aging management review and were included in the review of the compressed air systems.
Continuations to Instrument Racks from LRA-M-4615	
LRA-M-4615 Coordinates: B-7 C-3, C-5 D-4, D-5, D-6, D-7 E-2, E-3, E-4, E-5, E-6, E-8 F-7	Continuations to instrument racks from LRA-M-4615 do not appear on any LRA drawing. A review of the isometric drawings referenced on LRA-M-4615 up to the racks showed there are no additional component types in these lines. Therefore, the passive compressed air pressure boundary components up to the racks are subject to aging management review and were included in the review of the compressed air systems.
Continuations to Solenoid Valves from LRA-M-4615	
LRA-M-4615 Coordinates: B-5, C-5	The group of seven continuations from LRA-M-4615 all appear on drawing LRA-I-2649-1 within the coordinates B-2, B-4, B-7, C-2, C-3, C-4, and C-6. The passive compressed air pressure boundary components supporting operation of the indicated dampers (T4600F001B, 2B, 4B, 5B, 6B, 7B, 8B) are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: B-8, C-8	The group of seven continuations from LRA-M-4615 all appear on drawing LRA-I-2649-1 within the coordinates D-6, E-2, E-3, E-4, E-7, F-2, and F-3. The passive compressed air pressure boundary components supporting operation of the indicated dampers (T4600F001A, 2A, 4A, 5A, 6A, 7A, 8A) are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.

LRA-M-4615 Coordinates: C-7	The continuation from LRA-M-4615 to E/V T46F419 appears on drawing LRA-I-2649-1 at the coordinates D-7. The passive compressed air pressure boundary components supporting operation of damper T4600F409 are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: D-5	The continuation from LRA-M-4615 to E/V T46F418 appears on drawing LRA-I-2649-1 at coordinates C-7. The passive compressed air pressure boundary components supporting operation of damper T4600F408 are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: D-5	The group of three continuations from LRA-M-4615, to E/V T46F420, E/V T46F421 and E/V T46F415, all appear on drawing LRA-M-2709 within the coordinates G-4 through H-4. The passive compressed air pressure boundary components supporting operation of the indicated dampers (T4600F410, 420, 421) are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: D-6	The group of two continuations from LRA-M-4615, to E/V T23F450A and E/V T23F409, both appear on drawing LRA-M-3445-1 at the coordinates B-5. The passive compressed air pressure boundary components supporting operation of the indicated valves (T2300F409, 450A) are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: D-7	The continuation from LRA-M-4615, to E/V T46F414 appears on drawing LRA-M-2709 at coordinates E-4. The passive compressed air pressure boundary components supporting operation of damper T4600F407 are subject to aging management review and were included in the review of the compressed air systems. However, the highlighting that should have been applied to these components was inadvertently omitted.

LRA-M-4615 Coordinates: E-4	The continuation from LRA-M-4615 to E/V T46F413 appears on drawing LRA-M-2709 at coordinates C-4. The passive compressed air pressure boundary components supporting operation of damper T4600F406 are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: E-6	The group of three continuations from LRA-M-4615, to E/V T46F412, E/V T46F400 and E/V T46F401, all appear on drawing LRA-M-2709 at coordinates C-5. The passive compressed air pressure boundary components supporting operation of the indicated dampers (T4600F400, 401, 412) are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
LRA-M-4615 Coordinates: F-6	The two continuations from LRA-M-4615, to E/V T23F450B and E/V T23F410, both appear on drawing LRA-M-3445-1 within the coordinates B-4 and B-5. The passive compressed air pressure boundary components supporting operation of the indicated valves (T2300F410, 450B) are subject to aging management review and were included in the review of the compressed air systems as shown by the highlighting.
Continuations to Positioners from LRA-M-4615	
LRA-M-4615 Coordinates: B-4	For this continuation from LRA-M-4615, damper T4600F003B appears on LRA-M-2709 at coordinates G-3. The passive compressed air pressure boundary components (valves, tubing, piping) supporting this damper do not appear on this drawing, but are subject to aging management review and were included in the review of the compressed air systems. The damper housing is subject to aging management review and was included in the review of the standby gas treatment system.

LRA-M-4615 Coordinates: B-8	For this continuation from LRA-M-4615, damper T4600F003A appears on LRA-M-2709 at coordinates G-3. The passive compressed air pressure boundary components (valves, tubing, piping) supporting this damper do not appear on this drawing, but are subject to aging management review and were included in the review of the compressed air systems. The damper housing is subject to aging management review and was included in the review of the standby gas treatment system.
LRA-M-4615 Coordinates: D-7	The continuation from LRA-M-4615 for the control air and positioner supply for valve TCV P44F400A appears on LRA-M-5444 at coordinates H-8 as two inputs (shown as dots) to TE/P K400A and ZXP N423A. The passive compressed air pressure boundary components supporting operation of the valve are subject to aging management review and were included in the review of the compressed air systems. The line to ZXP N432A is highlighted; highlighting for the line to TE/P K400A was inadvertently omitted.
LRA-M-4615 Coordinates: E-6	The continuation from LRA-M-4615 for the control air and positioner supply for valve TCV P44F400B appears on LRA-M-5357 at coordinates C-8 and D-8 as inputs (shown as dots) to TE/P K400B and ZXP N423B. The passive compressed air pressure boundary components supporting operation of the valve are subject to aging management review and were included in the review of the compressed air systems. The line to ZXP N432B is highlighted; highlighting for the line to TE/P K400B was inadvertently omitted.

LRA Revisions:

None.

RAI 2.3.3.10-1

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawing and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-N-2052, locations F-7, F-6 F-5 (two places), F-4, and C-7	*Drawing continuations not provided to the "R.H.R. Reservoir" or "RHRSW Reservoir"*
LRA-M-N-2053, locations F-5, F-4 (two places), F-3, F-2, and D-3	*Drawing continuations not provided to the "R.H.R. Reservoir" or "RHRSW Reservoir"*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawings LRA-M-N-2052 and LRA-M-N-2053 indicate several continuations to the Residual Heat Removal (RHR) reservoir.

The continuations from drawings LRA-M-N-2052 and LRA-M-N-2053 to the RHR reservoir are not shown on LRA drawings. The open-ended piping lines from LRA-M-N-2052 and LRA-M-N-2053 discharge directly into the RHR reservoir. This was verified by reviewing applicable isometrics referenced on the LRA drawings and is consistent with the following:

- The "Emergency Equipment Service Water" (EESW) section of LRA Section 2.3.3.3 states that the EESW pumps have a back-pressure limiting valve for minimum flow

protection and the flow is routed back to the RHR reservoir. This is shown by the continuations to the RHR reservoir at F-5 on LRA-M-N-2052 and at F-4 on LRA-M-N-2053.

- The "RHR Service Water" (RHRSW) section of LRA Section 2.3.3.3 states that the RHRSW pumps have a pressure control valve for minimum flow protection and the flow is routed back to the RHR reservoir. This is shown by the continuations to the RHR reservoir at F-6 and F-7 on LRA-M-N-2052 and at F-2 and F-3 on LRA-M-N-2053.
- The Diesel Generator Service Water (DGSW) pumps have a pressure control valve for minimum flow protection and the flow is routed back to the RHR reservoir. This is shown by the continuations to the RHR reservoir at F-4 and F-5 on LRA-M-N-2052 and at F-4 and F-5 on LRA-M-N-2053.
- The RHRSW piping is equipped with a sample cooler for sampling RHRSW return flow. The cooling water for the sample cooler is provided by the General Service Water (GSW) system and discharges to the RHR reservoir. This is shown by the continuations to the RHR reservoir at C-7 on LRA-M-N-2052 and at D-3 on LRA-M-N-2053.

The lines to the RHR reservoir described above are nonsafety-related and perform a pressure boundary intended function and are addressed in LRA Sections 2.3.3.17 and 2.3.2.8. The piping is in scope and subject to aging management review as identified in the following LRA tables:

- EESW piping to the reservoir is identified as "piping" in LRA Tables 2.3.3-17-17 and 3.3.2-17-17.
- RHRSW piping to the reservoir is identified as "piping" in LRA Tables 2.3.2-8-1 and 3.2.2-8-1.
- DGSW piping to the reservoir is identified as "piping" in LRA Tables 2.3.3-17-25 and 3.3.2-17-25.
- GSW piping to the reservoir is identified as "piping" in LRA Tables 2.3.3-17-13 and 3.3.2-17-13.

Therefore, there are no additional component types subject to aging management review between the continuations from LRA-M-N-2052 and LRA-M-N-2053 and the end of the scoping boundary and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.14-1

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that the continuation of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2032, locations G-7 and G-4	*Drawings indicated by REF-1 and REF-8 at location G-7 and REF-8 and REF-18 at location G-4 do not provide sufficient information to located license renewal boundary.*
LRA-M-2032, location D-2	*Continuation from drawings M-2259 and M-4797, drawings not provided.*
LRA-M-2032-1, location D-4	*Continuation not provided for origin of M-2547 to Turbine Building Equipment Drains*
LRA-M-2223, locations B-6 and B-7	*Continuations of five lines from drawings M-2048 and M-2833. Drawings M-2048 and M-2833 not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawings LRA-M-2032 and LRA-M-2032-1 indicate several continuations to

other drawings or locations as indicated in this RAI. These continuations are addressed as follows.

LRA-M-2032, locations G-7 and G-4
LRA-M-2032, location G-7 REF-1: LRA-M-2224, C-7 shows the under vessel drains associated with sump G1101D072. The control rod drive leakage & drains drain to the under vessel drains.

LRA-M-2032, location G-7 REF-8: LRA-M-2224, C-7 shows sump G1101D072. The drains in the vicinity of the drywell coolers (cooling water system) drain to the sump as indicated on LRA-M-2032. The drain line is in scope as indicated by the highlighting on LRA-M-2032. It is not clearly shown on any other drawing.

LRA-M-2032, location G-4 REF-8: reactor building closed cooling water heat exchanger drains (indicated as DR) are shown on LRA-M-5358, F-6.

LRA-M-2032, location G-4 REF-18: core spray system drains shown on LRA-M-2224, C-3, under the label "NORTH CSS ROOM."

LRA-M-2032, location D-2
LRA-M-2032, location D-2: Turbine building pipe tunnel floor drain line with continuation from M-2259. M-2259 is not an LRA drawing and has no additional component types subject to AMR between the continuation and the end of this drain line. The scoping classification is unchanged across the continuation to the drain line termination.

LRA-M-2032, location D-2: Demin water tell-tale 1" SX line with continuation flag coming from M-4797. M-4797 is not an LRA drawing. The portion of the 1" SX line shown on M-4797 is in the radwaste building and not in scope for license renewal.

LRA-M-2032, location D-4
LRA-M-2032-1 location D-4: Turbine building equipment drain line with continuation from M-2547. M-2547 is not an LRA drawing and has no additional component types subject to AMR between the continuation and termination of this drain line. The scoping classification is unchanged across the continuation to the drain line termination.

LRA-M-2032, locations B-6 and B-7
LRA-M-2223, locations B-6 and B-7: Continuations of two lines from drawing M-2048 are shown on drawing LRA-M-2048. M-5712-1, also listed on the continuation flags, is a functional operating sketch of LRA-M-2048 that duplicates the components shown on LRA-M-2048. It is not an LRA drawing.

LRA-M-2223, locations B-6 and B-7: Continuations of three lines from drawing M-2833 are shown on drawing LRA-M-2833. M-5702-1, also listed on the continuation flags, is a functional operating sketch that duplicates the components shown on LRA-M-2833. It is not an LRA drawing.

Therefore, there are no additional component types subject to aging management review between the continuations shown on LRA-M-2032 and LRA-M-2032-1 and the end of the scoping boundary and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.14-2

Background:

In LRA Section 2.1.1.2.2(1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

The staff could not locate a seismic or equivalent anchor on several 10 CFR 54.4(a)(2) lines indicated in the table below.

License Renewal Boundary Drawing Number & Location	***Issue***
LRA-M-2032, locations D-4 and E-4	*On drawing LRA-M-2032 (D/E-4) 10 CFR 54.4(a)(2) nonsafety-related line continues from the safety-related valve F1409 in the reactor building to the turbine building and then to the radwaste building where it is taken out of scope. The staff could not locate a seismic or equivalent anchor on the 10 CFR 54.4(a)(2) nonsafety-related line continued to drawing M-2040 (G-8).*
LRA-M-2032, location H-6 and LRA-M-2032-1, location H-6	*On drawings LRA-M-2032, location H-6, and LRA-M-2032-1, location H-6, 10 CFR 54.4(a)(2) nonsafety-related lines continue from safety-related valves F600 and F018, respectively, to the not within scope drywell floor drain pumps (G1101C001A and B and G1101C006A and B). The staff could not locate seismic or equivalent anchors on the 10 CFR 54.4(a)(2) nonsafety-related lines.*

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3.

Drawing LRA-M-2032 contains valves F1407, F1408, and F1409 (see E-5/E-4) and drawing LRA-M-2032-1 contains valves F1410, F1411, and F1412 (see D-5/D-4). These six valves are nonsafety-related valves. Therefore, there are no safety-nonsafety interfaces at the specified locations on LRA-M-2032 and LRA-M-2032-1. The nonsafety-related valves F1407, F1408, F1409, F1410, F1411, and F1412 perform a function to prevent backflow from the radwaste building into the reactor building during the probable maximum meteorological event as described in LRA Section 2.3.3.14 and are therefore in scope per 10 CFR 54.4(a)(2) and subject to aging management review (AMR). The drawings LRA-M-2032 and LRA-M-2032-1 show the valves as highlighted in a different color than the connected piping only because the AMR of the valves is performed separate from the AMR for the connected piping, not because there are safety-nonsafety interfaces.

Drawing LRA-M-2032 indicates safety-nonsafety interfaces at the safety-related valves F600 (see H-6) and F003 (see H-5). Drawing LRA-M-2032-1 indicates safety-nonsafety interfaces at the safety-related valves F018 (see G-5) and F019 (see G-5). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For valve F003 on LRA-M-2032, there is a seismic anchor located in area H-5 on the 3" line downstream of valve F004. For valve F600 on LRA-M-2032, the seismic design analysis indicates that the seismic boundary is upstream of the reducer on the 3" lines from the drywell floor drain pumps G1101C001A and G1101C001B discharge nozzles (i.e. near the water level of sump G1101D072) and within the highlighted boundary. For valve F019 on LRA-M-2032-1, there is a seismic anchor located in area D-4 on the 6" line between valve F1412 and the reactor building wall and an equivalent anchor located in area D-6 on the 3" line between valve F021 and the reducer (the piping lines in row D are continuations of the lines in row G as indicated by the matchline from G-2 to C-8). The other 3" piping branch from the 6" run pipe is excluded from the analysis based on moment of inertia ratio. For valve F018 on LRA-M-2032-1, there is a seismic anchor (embedded pipe not shown) located in area G-5 on the 3" line upstream of valve F018 near the location shown for the stainless steel / carbon steel material change.

Since the components subject to aging management review include the connected piping and supports up to the seismic anchors, equivalent anchors, and seismic design analysis boundaries

beyond the safety-nonsafety interfaces at valves F600 and F003 on LRA-M-2032 and valves F018 and F019 on LRA-M-2032-1, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

Enclosure 2 to
NRC-14-0083

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 5

RAI 2.3.3.15-1

Background

In license renewal application (LRA) Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs [systems, structures and components] Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue

On drawings LRA-M-N-2048, locations E-6 and E-3, and LRA-M-N-2049, locations E-6 and E-3, the staff could not locate seismic anchors on the four nonsafety-related 4-inch-diameter lines to the safety-related diesel fuel oil tanks (R3000A002, R3000A001, R3000A004, and R3000A003).

Request

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-N-2048 indicates safety-nonsafety interfaces at the safety-related diesel fuel oil tanks R3000A002 (see E-6) and R3000A001 (see E-3). Similarly, drawing LRA-M-N-2049 indicates safety-nonsafety interfaces at the safety-related diesel fuel oil tanks R3000A004 (see E-6) and R3000A003 (see E-3). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to the safety-related tanks was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-N-2048, the seismic II/I design analysis demonstrates that the seismic boundary is at the wall penetration from the Residual Heat Removal (RHR) complex out into the yard. For LRA-M-N-2049, the seismic II/I design analysis demonstrates that the seismic boundary is at the wall penetration from the RHR complex out into the yard. In addition, the safety-related diesel fuel oil tanks are base-mounted components and

do not rely on the attached nonsafety-related piping to ensure seismic support. The fill piping is connected to the top of the vented tanks.

Since the components subject to aging management review include the connected piping and supports up to the base-mounted components and/or wall penetrations which were the seismic II/I design analysis boundaries for the safety-nonsafety interfaces at tanks R3000A002, R3000A001, R3000A004, and R3000A003 on LRA-M-N-2048 and LRA-M-N-2049, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.15-2

Background:

In LRA Section 2.2 the applicant stated, in part, that "Tables 2.2-1...list the mechanical systems...that are within the scope of license renewal for Fermi 2."

Issue:

Table 2.2-1, "Mechanical Systems within the Scope of License Renewal," does not list Section 2.3.3.15, "Fuel Oil," as a system within the scope of license renewal.

Request:

The staff requests the applicant to provide additional information to clarify why LRA Section 2.3.3.15, "Fuel Oil," is not included in Table 2.2-1.

Response:

License Renewal Application (LRA) Table 2.2-1 lists systems by plant system number. There is no plant system number associated with fuel oil. Instead, the components containing fuel oil are part of other numbered plant systems. For this reason, "Fuel Oil" is not listed as a separate system in LRA Table 2.2-1. As described in LRA Section 2.3.3.15, the review of fuel oil includes components from the Fire Protection system (P80), the Auxiliary Electrical Peaker Combustion Turbine Generator system (R11), and the Emergency Diesel Generator system (R30). These three systems are already separately listed in LRA Table 2.2-1 and are described in LRA Sections 2.3.3.7, 2.3.3.9, and 2.3.3.10, respectively. Within those sections, a reference to LRA Section 2.3.3.15 is provided for the aging management review of components containing fuel oil.

LRA Revisions:

None.

RAI 2.3.3.16-1

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an aging management review (AMR) by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of licensing renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2002, locations C-5 and D-5	*Continuation not provided for four 10 CFR 54.4(a)(2) lines to drawings I-2314-03 (location G-3), I-2336-05 (location C-6), and I-2346-08 (location D-6). Drawings not provided.*
LRA-M-2002, Locations F-7, H-7, E-6, and F-5	*Six within scope 10 CFR 54.4(a)(2) drain lines continuing to LRA-M-2985 locations G-8, H-8, F-6, and G-6. Could not locate continuations on LRA-M-2985.*
LRA-M-2002, locations E-4 and F-5	*Four within scope 10 CFR 54.4 continuing to drawing LRA-M-2003(F-3). Review of drawing LRA-M-2003 could not locate continuations from drawing LRA-M-2002.*
LRA-M-2002, location F-5	*10 CFR 54.4(a)(2) line continuing from unspecified drawing (and location) to valve F815.*
LRA-M-2046, locations C-3, F-4, H-3, and F-6	*Four within scope 10 CFR 54.4(a)(2) lines to drawing I-2400-04, locations E-6, F-4, F-4, and F-4, respectively. Drawing I-2400-04 not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether

or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

<u>LRA-M-2002, locations C-5 and D-5</u>
I-2314-03 is not an LRA drawing; it is the control diagram for the reactor feed pump turbine (RFPT) gland seal systems. The two lines that continue to this drawing are supplying the gland seals for the turbines. The two lines that continue to this drawing are also shown on drawing LRA-2985-1 at locations E-4, E-5, F-4, and F-5, but with no continuations indicated. The piping and associated components are highlighted as subject to aging management review for 10 CFR54.4(a)(2). They can be identified as follows.

- The line from valve F001A (LRA-M-2002 C-5) is shown on LRA-M-2985-1 at E-5 exiting the hydraulic valve (no identification number) near PT N21L010A and continuing on to the gland seal piping on the north RFPT in location F-5.
- The line from valve F001B (LRA-M-2002 C-5) is shown on LRA-M-2985-1 at E-4 exiting the hydraulic valve (no identification number) near PT N21L010B and continuing on to the gland seal piping on the south RFPT in location F-4.

I-2336-05 and I-2346-08 shown on LRA-M-2002 (location D-5) are LRA drawings and were provided. I-2346-08 was incorrectly identified on LRA-M-2002 as "Not an LRA Drawing."

LRA-M-2002, locations F-7, H-7, E-6 (and E-5), and F-5

The six 10 CFR 54.4(a)(2) drain lines continuing to LRA-M-2985 locations G-8, H-8, F-6, and G-6 have no continuation line flags on LRA-M-2985. The grid coordinates provided in the continuation arrows indicate the relative location where the same drain line is shown on LRA-M-2985. The same drain lines shown on LRA-M-2002 are also shown on LRA-M-2985. Correlations from F-7 and H-7 of LRA-M-2002 can be found by noting that valves F607 and F609 are shown on both drawings. Correlations from E-6/E-5 and F-5 of LRA-M-2002 can be found by noting the "H.P. LOOP PIPE" exiting the steam chests on LRA-M-2985 and locating the four drain lines from the high pressure piping to valves F612, F613, F614, and F615. All of the piping and other components leading from these six locations on LRA-M-2002 to LRA-M-2985 are subject to aging management review with AMR results included in LRA Table 3.4.2-3-5, Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-M-2002, locations E-4 and F-5

The four 10 CFR 54.4(a)(2) extraction steam lines continuing to LRA-M-2003 location F-3 have no continuation line flags on LRA-M-2003. Rather than being continuations, the lines on LRA-M-2002 are also shown on LRA-M-2003. The grid coordinates provided in the arrows indicate the location where the same extraction lines connect to the piping from the high pressure turbine going to the No. 5 feedwater heaters (the 20-inch connections coming off the 44-inch steam lines at LRA-M-2003 (F-3)). All of the piping and other components leading from these four locations on LRA-M-2002 to LRA-M-2003 are subject to aging management review with AMR results included in LRA Table 3.4.2-3-5, Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-M-2002, location F-5

The 10 CFR 54.4(a)(2) line continues from valve F815 to the reheater live steam pressure indicator, PIE-R901, which is an active component and therefore not subject to aging management review.

LRA-M-2046, locations C-3, F-4, H-3, and F-6

I-2400-04 is not an LRA drawing; it is a diagram of samples in the reactor building. These four 10 CFR 54.4(a)(2) lines go to the sample panel on I-2400-04. The piping, valves, and cooler housings downstream between the continuation flags and the sample panel are subject to aging management review with AMR results included in LRA Table 3.3.2-17-5, Reactor Water Cleanup System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation and LRA Table 3.3.2-17-11, Process Sampling System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA Revisions:

None.

RAI 2.3.3.17-1

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-2271 (E-6) the staff could not locate seismic or equivalent anchors on nonsafety-related line M-3691 to safety-related valve F600, location E-6, or on the nonsafety-related line downstream of safety related valve F601, location E-6.

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2271 indicates safety-nonsafety interfaces at the safety-related valves F600 (see E-6) and F601 (see E-6). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For valve F600 on LRA-M-2271, there is an expansion joint located in area D-6 upstream of valve F600 on line M-3691-1 and downstream of the 90° turn from the turbine building. For valve F601 on LRA-M-2271 (E-6), there is an expansion joint on the 10" line M-3691-1 located in area F-6 between the lines for the 4th and 5th floors. The small bore piping and the 6" piping lines going to valves F228 and F216 in area E-6 are excluded from the seismic design analysis based on moment of inertia ratio.

Since the components subject to aging management review include the connected piping and supports up to the flexible connections and seismic design analysis boundaries beyond the

safety-nonsafety interfaces at valves F600 and F601 on LRA-M-2271, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.17-2

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations, as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified. Drawing LRA-M-2271 (E-3) has a within scope continuation "To Service Building." A drawing continuation is not provided for this continuation downstream of valve F187.

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2271 indicates a continuation to the "Service Building" downstream of the nonsafety-related valve F187 (see E-3).

The continuation from drawing LRA-M-2271 to the "Service Building" is not provided (i.e. is not an LRA drawing). A review of drawing LRA-M-2271 shows that the piping is all nonsafety-related and is not connected to any safety-related piping. This piping was included in scope per 10 CFR 54.4(a)(2) based on the potential for spatial interaction as described in LRA Section 2.1.1.2.2(2). The piping shown near area E-3 is in the turbine building (TB). The continuation beyond valve F187 is to the office service building (OSB). As indicated in LRA Table 2.2-5, the OSB is a structure that is not within scope of license renewal. The continuation on LRA-M-2271 is not in scope from the point where it leaves the TB and goes to the OSB. Therefore, there are no additional component types subject to aging management review between the continuation from LRA-M-2271 and the end of the scoping boundary and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.17-3

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2017-1A, location D-5	*Has within scope continuation to drawing M-3804. Drawing M-3804 was not provided.*
LRA-M-2017-2, location G-1	*Has within scope continuation to drawing I-2181-2. Drawing I-2182-2 was not provided.*
LRA-M-2017-2, location H-7	*Has within scope continuation to the off-gas O_2 analyzer. Drawing continuation is not provided for the continuation to the off-gas O_2 analyzer.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended

functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

LRA-M-2017-1A, location D-5
Drawing M-3804 is not an LRA drawing; it is a piping isometric drawing for the off-gas system header to turbine building floor drain. The scope continuation flag from LRA-M-2017-1A, location D-5, provides references to both M-3804 and M-2017-2 (which is provided as LRA-M-2017-2). The continuation flag from LRA-M-2017-1A continues on LRA-M-2017-2 at location B-5.

LRA-M-2017-2, location G-1
Drawing I-2181-02 is not an LRA drawing; it is the diagram for the process radiation monitoring subsystems. The piping from the continuation flag at LRA-M-2017-2 location G-1 leads to the off-gas vent pipe radiation monitor subsystem. This subsystem has no additional component types subject to AMR that are not included in Table 3.3.2-17-3, Process Radiation Monitoring System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-M-2017-2, location H-7
Drawing S16-439, listed at coordinate H-7 is not an LRA drawing. Drawing S16-439 has been superseded by drawing I-2364-04, which is also not an LRA drawing. I-2364-04 is the flow diagram for the O_2 analyzer calibration, analyzer, and drain tank modules. The portions of this system that may become liquid filled are subject to aging management review and AMR results are included in LRA Table 3.3.2-17-9, Off-Gas Process and Vacuum System, Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA Revisions:

None.

RAI 2.3.3.17-4

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of drawings, as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located. Drawing LRA-I-2400-10, locations C-3, G-6, and D-6, has three within scope continuations to drawing 6I721-2400-11. Drawing 6I721-2400-11 was not provided.

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited above, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the

continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

Drawing LRA I-2400-10, locations C-3/C-2, G-6, and D-6, has three in-scope continuations to drawing 6I721-2400-11. Drawing 6I721-2400-11 is not an LRA drawing; it is the post-accident sampling system piping interconnection drawing. The three continuations from LRA-I-2400-10 are as follows.

- At C-2/C-3 (near valves V13-7368 and V13-7378), the tubing enters from sample connection D on piping station D008 on drawing 6I721-2400-11. Sample connection D on piping station D008 is shown on drawing LRA-I-2400-26 at location D-8.
- At G-6 (near valves V13-7360 and V13-7361), the tubing exits to sample connection B on piping station D008 on drawing 6I721-2400-11. Sample connection B on piping station D008 is shown on drawing LRA-I-2400-26 at location F-8.
- At D-6 (near valves V13-7362 and V13-7363), the tubing exits to sample connection E on piping station D008 on drawing 6I721-2400-11. Sample connection E on piping station D008 is shown on drawing LRA-I-2400-26 at location F-8.

LRA Revisions:

None.

RAI 2.3.3.17-5

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-4100 the staff could not locate seismic or equivalent anchors on nonsafety-related lines attached to safety-related valves F601 (location F-8), F603 (location D-6), F605 (location G-6), and F607 (location E-8).

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interfaces and the end(s) of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-4100 indicates safety-nonsafety interfaces at the safety-related valves F605 (see G-6), F603 (see D-6), F607 (see E-8), and F601 (see F-8). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For valve F605 on LRA-M-4100, there is a seismic anchor located on the 4" line (4059) in area G-6 between valve F012A and the connection to valve F043E. For valve F603 on LRA-M-4100, there is a seismic anchor on the 6" line (4056) located in area D-6 between the valve F603 and the connection to valve F021A. For valve F607 on LRA-M-4100, there is a seismic anchor on the 6" line (4058) located in area G-5 between the connection to valve F010 and the orifice plate (the 4" branch is adjacent to the seismic anchor such that no additional support on this branch is needed), as well as the anchor in G-6 described previously between valve F012A and the connection to valve F043E. For valve

F601 on LRA-M-4100, there is a seismic anchor on the 6" line (4055) located in area C-6 upstream of the strainer G5100D002.

Since the components subject to aging management review include the connected piping and supports up to the seismic anchors beyond the safety-nonsafety interfaces at valves F605, F603, F607, and F601 on LRA-M-4100, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.3.17-7

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-4100, location E-3	*Drawing LRA-M-4100, location E-3, has a within scope continuation to drawing I-2400-03, location D-3. Drawing I-2400-03 was not provided.*
LRA-M-2008-1, location B-7	*Drawing LRA-M-2008-1, location B-7, has a within scope continuation to drawing I-2400-06, locations D-4 and D-5. Drawing I-2400-06 was not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended

functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited in the issue above, there are no additional component types subject to AMR between the continuation and the termination of the screening boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

<u>LRA-M-4100, location E-3</u>
Drawing I-2400-03 is not an LRA drawing; it is a diagram of samples in the turbine building. I-2400-03 location D-3 shows the continuation line from LRA-M-4100, location E-3, connecting to sample point 31 on sample panel P33P406. Sample instrumentation connections are depicted on drawing I-2400-06 (also not an LRA drawing). The sample line inside panel P33P406 includes piping, an isolation valve, pressure control valves, backflush valve, test valves, and relief valve before terminating at the grab sample valve. The piping and those valves are subject to AMR and their AMR results are included in LRA Table 3.3.2-17-11, Process Sampling System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

<u>LRA-M-2008-1, location B-7</u>
Drawing I-2400-06 is not an LRA drawing; it is a diagram of the turbine building sample panels. As shown by the dashed lines on LRA-M-2008-1, the piping continuing from LRA-M-2008-1, location B-7, goes to and returns from the sample chiller unit, P3300D001, which is also shown on drawing I-2400-06. The piping and chiller housing are subject to AMR and the AMR results are included in LRA Table 3.3.2-17-11, Process Sampling System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA Revisions:

None.

RAI 2.3.3.17-8

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. On drawing LRA-M-2008, location C-6, the scoping boundary ends at valves F847 and F848.

Request:

The staff requests the applicant to provide additional information to clarify why lines 3314 and 3312 downstream of valves F847 and F848 are not within the scope of license renewal.

Response:

Valves P4300F847 and F848 are part of the turbine building closed cooling water system and are located in the turbine building. They are correctly highlighted and are subject to aging management review meeting the scoping criteria 10 CFR 54.4(a)(2) - spatial interaction. The lines 3314 and 3312 past valves P4300F848 and F847, respectively, where the highlighting stops transition to the office service building. As indicated in License Renewal Application (LRA) Table 2.2-5, the office service building is not in scope and it does not contain safety-related equipment. Therefore, those turbine building closed cooling water system components in this space have no potential spatial interaction with safety-related equipment and therefore, are not subject to aging management review.

LRA Revisions:

None.

RAI 2.3.3.17-9

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

The staff confirms the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. On license renewal drawing LRA-M-2008-1 (D-2) the bus cooler (S1200B001) is not subject to an AMR. Similar components are included within the scope of license renewal and subject to an AMR.

Request:

The staff requests the applicant to provide additional information to clarify why bus cooler S1200B001 is not subject to an AMR as are other coolers on drawing LRA-M-2008-1.

Response:

Bus cooler S1200B001 is part of the S12 Generator Isolated Phase Bus system which is not in scope as indicated in License Renewal Application (LRA) Table 2.2-2. Bus cooler S1200B001 is an open cooler housing that has turbine building closed cooling water (TBCCW) system piping inside the open housing. Air flows through two open sides of the cooler housing across the piping and cools the bus. The cooler housing has an internal environment of air-indoor and does not provide a pressure boundary for the TBCCW system. Therefore, the cooler housing is not subject to aging management review for 10CFR54.4 (a)(2) spatial interaction. The piping inside the open housing is addressed in LRA Table 3.3.2-17-15, Turbine Building Closed Cooling Water System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation as piping.

The other coolers (stator coolers and seal oil coolers) shown on LRA-M-2008-1 are shell and tube coolers. The cooler housings provide a pressure boundary function for the internal fluids. The cooler housings (stator coolers and seal oil coolers) are addressed in LRA Table 3.4.2-3-5 Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation as cooler housings.

LRA Revisions:

None.

Enclosure 3 to
NRC-14-0083

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 6

RAI 2.3.3.17-10

Background

License Renewal Application (LRA) Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue

One review method used by the staff is to confirm the inclusion of all components subject to an aging management review (AMR) by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of drawings, as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore acceptable scoping of systems, structures and components (SSCs) could not be verified. Drawing LRA-M-2042 has eight within scope continuations to/from drawing I-2314-02. Drawing I-2314-02 was not provided.

Request

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. For those cases below that have continuations, none of the continuations

have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response for this case is provided as follows.

LRA-M-2042
Drawing I-2314-02 is not an LRA drawing. The eight continuations to/from drawing I-2314-02 connect with the north and south reactor feed pump turbine oil reservoir tanks and vapor extractors. Those components were identified in the Fermi 2 component database as tanks and filter housings and are subject to aging management review with AMR results included in LRA Table 3.4.2-3-3, Feedwater and Standby Feedwater System, Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation. Other component types associated with the lube oil reservoirs (piping, valves, and heat exchangers) are also subject to aging management review with AMR results included in LRA Table 3.4.2-3-3.

During the review of this RAI, it was noted that a line item for component type piping exposed to lube oil was inadvertently omitted from LRA Table 3.4.2-3-3. The revisions to the LRA are indicated below.

LRA Revisions:

LRA Table 3.4.2-3-3 is revised as shown on the following page. Additions are shown in underline and deletions are shown in strike-through.

Table 3.4.2-3-3
Feedwater and Standby Feedwater System
Nonsafety-Related Components Affecting Safety-Related Systems
Summary of Aging Management Evaluation

Table 3.4.2-3-3: Feedwater and Standby Feedwater System, Nonsafety-Related Components Affecting Safety-Related Systems								
Component Type	**Intended Function**	**Material**	**Environment**	**Aging Effect Requiring Management**	**Aging Management Programs**	**NUREG-1801 Item**	**Table 1 Item**	**Notes**
Piping	Pressure boundary	Carbon steel	Air – indoor (ext)	Loss of material	External Surfaces Monitoring	VIII.H.S-29	3.4.1-34	A
Piping	Pressure boundary	Carbon steel	Lube oil (int)	Loss of material	Oil Analysis	VIII.D2.SP-91	3.4.1-40	A, 402
Piping	Pressure boundary	Carbon steel	Steam (int)	Cracking – fatigue	TLAA – metal fatigue	VIII.B2.S-08	3.4.1-1	C

RAI 2.3.4.1-1

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-2678 (E-2) the staff could not locate seismic or equivalent anchors on the 10 CFR 54.4(a)(2) nonsafety-related line continued from safety-related valve 3120. The nonsafety-related line at E-2 continues to drawing I-2400-7, location D-4. Drawing I-2400-7 was not provided. The same 10 CFR 54.4(a)(2) nonsafety-related line from safety-related valve 3120 branches and continues to valves F314 and F315, at LRA-M-2678 (G-6 and F-6) and continue to M-5498 (H-3) and I-2400-06 (C-4), respectively. Drawings M-5498 (H-3) and I-2400-06 (C-4) were not provided.

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2678 indicates a safety-nonsafety interface at the safety-related valve V8-3120 (see D-2). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-2678, there is a seismic anchor located in area E-3 on the 6" line (2152 & 2808) prior to valve V8-2789 beyond the connection to vent valve V23-2012. Since this anchor is located before the tee intersection that leads to valve V23-2016 (and its continuation to drawing I-2400-7 location D-4), valve F314 (and its continuation to drawing M-5498 location H-3), and valve F315 (and its continuation to drawing

I-2400-06 location C-4), those continuations are not required for seismic support of the safety-related piping. The downstream side of valve V8-3120 is in the drywell and all the piping is included in scope to the end of the runs.

Since the components subject to aging management review include the connected piping and supports up to the seismic anchors beyond the safety-nonsafety interface at valve V8-3120 on LRA-M-2678, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.4.2-1

Background:

In LRA Section 2.1.1.2.2 (1), "Nonsafety-Related SSCs Directly Connected to Safety-Related SSCs," the applicant stated, in part, "For nonsafety-related SSCs directly connected to safety-related SSCs, components within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria."

Issue:

On drawing LRA-M-2023 (F-8) a 10 CFR 54.4(a)(2) nonsafety-related line continues from drawing LRA-M-2004-01 (H-2). The staff could not locate seismic or equivalent anchors on the 10 CFR 54.4(a)(2) nonsafety-related lines continued from LRA-M-2004-01 (H-2). This line continues to 10 CFR 54.4(a)(1) safety-related valves F076A and F076B at locations F-1 and F-2.

Request:

The staff requests the applicant to provide additional information to locate the seismic or equivalent anchors between the safety-nonsafety interface and the end of the 10 CFR 54.4(a)(2) scoping boundary.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3. Drawing LRA-M-2023 indicates safety-nonsafety interfaces at the safety-related valves F076A and F076B (see F-2 and F-1, respectively). As described in LRA Section 2.1.1.2.2(1), the nonsafety-related structures, systems, and components (SSCs) within the scope of license renewal include the connected piping and supports up to and including the first seismic or equivalent anchor beyond the safety-nonsafety interface, or up to a point determined by alternative bounding criteria.

From a review of applicable isometric drawings, DTE has verified that nonsafety-related piping attached to safety-related piping was included within the scope of license renewal up to and including a seismic anchor, equivalent anchor, or bounding condition (base-mounted component, flexible connection, or the end of a piping run). For LRA-M-2023, the seismic analysis ends in areas H-2 and H-1 where the 24" lines (3131) from valves F076A and F076B connect to the 36" manifold (3103). There are equivalent anchors on the 24" lines prior to the connection to the manifold.

Since the components subject to aging management review include the connected piping and supports up to the equivalent anchors beyond the safety-nonsafety interfaces at valves F076A

and F076B on LRA-M-2023, no new SSCs were identified as subject to aging management review as a result of this review and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.4.2-2

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2035, location E-8	*Could not find continuation from drawing LRA-M-2035, location E-8, to drawing LRA-M-2089, location H-4.*
LRA-M-5715-4, locations D-4 and D-7	*Continuations to/from LRA-M-5715-4 to/from drawing M-5715-3, locations D-6 and D-4, respectively, could not be found because M-5715-3 was not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

License renewal drawings were prepared as described in License Renewal Application (LRA) Section 2.1.2.1.3.

Drawing LRA-M-2035 (see E-8) indicates a continuation from Ref. 16, which is drawing LRA-M-2089. A review of drawing LRA-M-2089 (see H-4) shows a connection to Ref. 6 (High Pressure Coolant Injection (HPCI) system), which is drawing LRA-M-2035. This is the relevant continuation. (Note that the continuation on LRA-M-2089 incorrectly indicates to see

LRA-M-2035 C-5 rather than E-8. This error in the continuation was corrected on the site drawing after the preparation of the LRA drawing.) The piping lines on LRA-M-2089 going to the continuation to LRA-M-2035 are not highlighted. The reason that the lines are not highlighted is that the lines on LRA-M-2089 are dashed lines. When LRA drawings were created, dashed lines were intentionally not highlighted. Although the lines are not highlighted, the relevant piping performs a function to support the reactor coolant system pressure boundary and is in scope and subject to aging management review as identified in LRA Tables 2.3.1-3 3.1.2-3 under "piping." Therefore, there are no additional component types subject to aging management review between the continuation from LRA-M-2089 and the end of the scoping boundary and no changes to the LRA are necessary.

Drawing LRA-M-5715-4 (see D-4 and D-7) indicates continuations to M-5715-3. The drawing LRA-M-5715-4 was generated from a functional operating sketch (FOS) rather than a piping and instrumentation diagram (P&ID). Therefore the numbering on the continuation is to another FOS. The FOS was not provided as an LRA drawing, but it is equivalent to drawing LRA-M-5083. The continuations from LRA-M-5715-4 are for the water side of the two lube oil coolers. On LRA-M-5083, the lube oil coolers are shown in E-6 and C-6. As indicated, the piping lines through the lube oil coolers are highlighted as in scope and subject to aging management review. Therefore, there are no additional component types subject to aging management review between the continuation from LRA-M-5715-4 and the end of the scoping boundary and no changes to the LRA are necessary.

LRA Revisions:

None.

RAI 2.3.4.3-1

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings, as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified. Drawing LRA-M-2007 (D-5 through E-5, and D-6) has within scope 10 CFR 54.4(a)(2) lines continuing to drawing I-2400-03, four locations. Drawing I-2400-03 was not provided.

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been

included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response for this case is provided as follows:

LRA-M-2007 (D-5 through E-5, and D-6)
Drawing I-2400-03, the diagram of samples in the turbine building, is not an LRA drawing. The 10 CFR 54.4(a)(2) lines of interest indicated on I-2400-03 that continue to sample sinks are also indicated on drawing LRA-M-2007. Drawing I-2403-01, which is not an LRA drawing, shows that sample sinks 11 and 16 are located in the turbine building. The component types in the lines of interest are subject to aging management review and the AMR results are included in LRA Table 3.4.2-3-7, Circulating Water System, Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA Revisions:

None.

RAI 2.3.4.3-2

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff to confirm the inclusion of all components subject to an AMR review by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2011, location H-4	*Within scope 10 CFR 54.4(a)(2) line continuing to drawing 6M721-2004 (drawing LRA-M-2004), location C-3. Could not locate the continuation from LRA-M-2011 on drawing LRA-M-2004.*
LRA-M-2011, locations G-2, G-4, G-6, G-8, and D-3	*Within scope 10 CFR 54.4(a)(2) lines to sample sink drain drawings on drawings I-2400-3 and I-2400-06. Drawings I-2400-3 and I-2400-06 were not provided.*
LRA-M-2011-1, location H-2	*Within scope 10 CFR 54.4(a)(2) line continuing to drawing M-3007. Drawing M-3007 was not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

LRA-M-2011, location H-4
The 10 CFR 54.4(a)(2) line continuing to drawing 6M721-2004 (drawing LRA-M-2004) is shown as the 2-inch gland seal line on LRA-M-2004 beginning at location C-3 and continuing through D-3, D-4, and D-5. The line exits the 24-inch header between polishing demineralizers N2002D010 and N2002D011 through valve V23-2008 and ties into the gland seal water piping for the condenser pumps. Continuation piping and components are subject to aging management review, and AMR results are included in LRA Table 3.4.2-3-2, Condensate System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-M-2011, locations G-2, G-4, G-6, G-8, and D-3
Drawings I-2400-3 and I-2400-06 are not LRA drawings. Drawing I-2400-3 is the diagram for samples in the turbine building and I-2400-06 is a diagram for the turbine building sample panels. The 10 CFR 54.4(a)(2) lines from LRA-M-2011, locations G-2, G-4, G-6, G-8, and D-3, go to connections on the turbine building sample panel shown on drawings I-2400-3 and I-2400-06. Within the sample panel, the lines include piping and isolation, backflush, pressure control, flow control, and grab sample valves. Continuation piping and components are subject to aging management review, and AMR results are included in LRA Table 3.4.2-3-2, Condensate System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-M-2011-1, location H-2
Drawing M-3007 is not an LRA drawing. The 10 CFR 54.4(a)(2) line continuing from LRA-M-2011-1 to drawing M-3007 is the station air interface to the condensate polishing demineralizer system. Beyond the continuation, there are no additional component types subject to AMR that are not included in LRA Table 3.3.2-17-19, Station Air, Control Air, Emergency Breathing Air System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA Revisions:

None.

RAI 2.3.4.3-3

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified. Drawing LRA-M-2017-1 (D-5) has a 2-inch-diameter 10 CFR 54.4(a)(2) line continuing to an unspecified drawing (and location) with a note "At Condenser."

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the screening boundary that have not been

included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to this case is provided as follows.

LRA-M-2017-1 (D-5)
The 2-inch-diameter 10 CFR 54.4(a)(2) line continuing to an unspecified drawing (and location) traverses from the connection on the east preheater to connection #101 on the condenser shell. There is a similar continuation on LRA-M-2017-1 at location (F-5). That line is from the west preheater and runs generally parallel with the line from D-5 before joining with it near the condenser connection. At location F-5, the isometric for this piping is indicated as 4149 (M-4149-1). This isometric shows the piping to the condenser connection #101. There are no component types subject to AMR between the continuation and the termination of these lines that are not included in the LRA Table 3.3.2-17-9, Off-Gas Process and Vacuum System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA Revisions:

None.

RAI 2.3.4.3-4

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2985-1, locations F-3, D-4, and E-6	*Drawing LRA-M-2985-1 has three within scope 10 CFR 54.4(a)(2) lines continuing to drawings M-4352, I-2314-3, and I-2314-3, respectively. Drawings M-4352 and I-2314-3 were not provided.*
LRA-M-2985-1, location G-6	*Drawing LRA-M-2985-1 (G-6) has a 10 CFR 54.4(a)(2) line continuing to drawing LRA-M-2017-1, location A-7. Review of drawing LRA-M-2017-1 could not locate the continuation from drawing LRA-M-2985-1.*
LRA-M-2985-1, locations E-2 and E-3	*Drawing LRA-M-2985-1 (E-2 and E-3) has two 10 CFR 54.4(a)(2) lines continuing to drawing LRA-M-2017-1 (F-6 and D-5). Review of drawing LRA-M-2017-1 could not locate the continuations from drawing LRA-M-2985-1.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

<u>LRA-M-2985-1, locations F-3, D-4, and E-6</u>
Drawings M-4352 and I-2314-3 are not LRA drawings. M-4352 is the schematic for rearrangement and removal of the reactor feed pump turbine exhaust ducts, and I-2314-3 is the control diagram for the reactor feed pump turbine gland seal systems.

- The 10 CFR 54.4(a)(2) line on LRA-M-2985-1, location F-3, continuing to drawing M-4352 is shown on drawing LRA-M-2003 at location F-5. This line is the exhaust duct labeled RFPT. EXH. that exits the south reactor feed pump turbine through valve N6100F602 at location F-5, traverses through location E-5, and terminates in the main condenser shell at location E-6.
- The two 10 CFR 54.4(a)(2) lines continuing from drawing I-2314-3 are from relief valves on the reactor feed pump turbine gland seal system that relieve to the condenser. The gland steam lines protected by the relief valves are included in LRA Table 3.4.2-3-9, Drips, Drains and Vents System, Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

<u>LRA-M-2985-1, location G-6</u>
The 10 CFR 54.4(a)(2) line continuing to drawing LRA-M-2017-1, location A-7, is identified at that location as continuing from M-2003 (drawing LRA-M-2003), location F-4. That is the

correct location for the continuation. Drawing M-2017-1, location A-7, was updated to include both M-2003 and M-2985-1 in the continuation arrow on the site drawing after the preparation of the LRA drawing.

LRA-M-2985-1, locations E-2 and E-3

LRA-M-2985-1 locations E-2 and E-3 show the steam supply to various components including the steam jet air ejectors (SJAE) #1, #2, #3, and #4, and the east and west preheaters. A similar detail of the steam supply to these components is shown on LRA-M-2002 in location B-4. Drawing LRA-M-2002 provides the continuations to LRA-M-2017-1 which can be more easily located on drawing LRA-M-2017-1 as follows:

- The 10 CFR 54.4(a)(2) line continuing from drawing LRA-M-2985-1 location E-2/F-2 (labeled SJAE discharge manifold) is represented in detail on drawing LRA-M-2017-1 location G-6 by the continuation labeled "M-2002 (C-4)".
- The 10 CFR 54.4(a)(2) line continuing from drawing LRA-M-2985-1 location E-3 (labeled east preheater) is represented in detail on drawing LRA-M-2017-1 location H-6 by the continuation labeled "M-2002 (B-4)". The line passes through valve F615 in location H-6 and then to the east preheater in location E-5. A similar configuration exists for the 10 CFR 54.4(a)(2) line continuing from drawing LRA-M-2985-1 location F-3 (labeled west preheater). That line continues on drawing LRA-M-2017-1 location H-6 at the continuation labeled "M-2002 (B-4)" through valve F616 and then to the west preheater in location G-5.

LRA Revisions:

None.

RAI 2.3.4.3-5

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-M-2003, location F-4	*Drawing LRA-M-2003 (F-4) has a within scope 10 CFR 54.4(a)(2) line continuing to drawing M-4504-1. Drawing M-4504-1 was not provided.*
LRA-M-2003, locations E-5 and F-5	*Drawing LRA-M-2003 (E-5 and F-5) has a within scope 10 CFR 54.4(a)(2) line continuing to drawing I-2314-03 (H-3). Drawing I-2314-03 was not provided.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended

functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

<u>LRA-M-2003, location F-4</u>
Drawing M-4504-1 is not an LRA drawing; it is an isometric drawing of the reheater/separator out-of-service corrosion protection piping. The 10 CFR 54.4(a)(2) line continuing from drawing M-4504-1 connects a nitrogen supply line to the reheater/separator through valve N2200F682. The same connection to drawing M-4504-1 is also shown on drawing LRA-M-2017-1, location A-7. Valve N3016F622 is shown on both LRA-M-2017-1 and LRA-M-2003. Drawing LRA-M-2017-1 shows the connection to M-4504-1 through valve N2200F682. As seen on LRA-M-2017-1, the screening boundary is at valve N2200F682, where the highlighting stops. The screening boundary continuation from LRA-M-2003 to M-4504-1 only extends to valve N220F682.

<u>LRA-M-2003, locations E-5 and F-5</u>
Drawing I-2314-03 is not an LRA drawing; it is the control diagram for the reactor feed pump turbine north and south gland seal systems. PXEN21N461A and B are pressure transmitters for the control system. The continuation represents the signal from the transmitter to the control system. The line from the valve to PXEN21N461B and the lines to the continuations were inadvertently highlighted. These transmitters are active components and therefore not subject to aging management review.

LRA Revisions:

None.

RAI 2.3.4.3-6

Background:

LRA Section 2.1 describes the applicant's scoping methodology, which specifies how systems or components were determined to be included within the scope of license renewal.

Issue:

One review method used by the staff is to confirm the inclusion of all components subject to an AMR by reviewing the results of the screening of components within the license renewal boundary. The staff noted, during its review of the drawings and locations (indicated in the table below) as supplied by the applicant, that continuations of piping within the scope of license renewal could not be located; therefore, acceptable scoping of SSCs could not be verified.

License Renewal Boundary Drawing Number & Location	***Continuation Issue***
LRA-I-2336-05, locations C-2, E-4, E-5, and E-6	*Drawing LRA-I-2336-05 has four within scope 10 CFR 54.4(a)(2) lines to drawings M-2165 and I-2334-20. Drawings M-2165 and I-2334-20 were not provided.*
LRA-I-2336-06, locations B-7 and B-8	*Drawing LRA-I-2336-06 (B-7 and B-8) has two within scope 10 CFR 54.4(a)(2) lines continuing to drawing I-2333-07. Drawing I-2333-07 was not provided.*
LRA-I-2336-26, location E-4	*Drawing LRA-I-2336-26 (E-4) has a within scope 10 CFR 54.4(a)(2) line continuing to drawing I-2334-05. Drawing I-2334-05 was not provided.*
LRA-I-2336-26, location D-4	*Drawing LRA-I-2336-26 (D-4) has an 8-inch-diameter 10 CFR 54.4(a)(2) line continuing from an unspecified drawing (and location) with a note "From Guard Piping."*
LRA-I-2346-05, location E-7	*Drawing LRA-I-2346-05 (E-7) has a within scope 10 CFR 54.4(a)(2) line continuing to drawing I-2346-06. Drawing I-2346-06 was not provided.*
LRA-I-2346-05, locations F-4, E-4, and D-4	*Drawing LRA-I-2346-05 has three10 CFR 54.4(a)(2) lines continuing to unspecified drawings with notes "To Portable Drum," "To Main Oil Tank," and "To Waste Oil Tank," respectively.*

Request:

The staff requests the applicant to provide sufficient information to locate the license renewal boundary. If the continuation cannot be shown on license renewal boundary drawings, then provide additional information describing the extent of the scoping boundary and verify whether or not there are additional component types subject to an AMR between the continuation and the termination of the scoping boundary. If the scoping classification of a section of the piping changes over the continuation, provide additional information to clarify the change in scoping classification.

Response:

Use of the License Renewal Application (LRA) drawings is described in LRA Section 2.1.2.1.3, under screening methodology.

License renewal drawings were prepared to indicate portions of systems that support system intended functions within the scope of license renewal. Components subject to aging management review (AMR) (i.e., passive, long-lived components that support system intended functions) are highlighted using color coding to indicate which aging management review evaluated the components.

Site drawings were used to facilitate the aging management reviews. However, some components are shown only on plant layout or equipment drawings that are not suitable for LRA drawings. Other components are in the equipment database but are not shown on drawings. The component types for each in-scope system are determined by the database review, not just from the flow diagrams. In each case cited below, there are no additional component types subject to AMR between the continuation and the termination of the scoping boundary that have not been included in the AMR for that system. For those cases below that have continuations, none of the continuations have a change in scoping classification. The scoping criterion met as shown by the highlighting on the drawing is unchanged across the continuation. Where LRA drawings have the note, "Not an LRA Drawing," this indicates that the referenced drawing is a plant equipment layout drawing or other type of drawing that is not a flow diagram suitable for an LRA drawing.

The specific response to each case is provided as follows.

<u>LRA-I-2336-05, locations C-2, E-4, E-5, and E-6</u>
Drawings M-2165 and I-2334-20 are not LRA drawings. M-2165 is a general arrangement of condenser connections and I-2334-20 is the arrangement for the mechanical and electrical layout of the turbine gland steam sealing panel. The four 10 CFR 54.4(a)(2) lines continue as follows.

- The continuation from LRA-I-2336-05, location C-2, terminates where the line from the gland steam condenser connects to the main condenser at connection #77. No additional component types subject to AMR were identified on this line.

- The continuation from LRA-I-2336-05, location E-5, terminates where the line from the main turbine gland seal steam relief air operated valve enters the main condenser at connection #80. No additional component types subject to AMR were identified on this line.
- The continuation from LRA-I-2336-05, location E-6 terminates where the line from the main steam dump valve stem leakoff goes to the main condenser at connection #79. No additional component types subject to AMR were identified on this line.
- The piping shown on LRA-I-2336-05, location E-4, is a representation of the 2-inch manifold in panel H21P257 as stated in the note. Panel H21P257 is the turbine gland steam sealing panel. There is not a physical continuation of the piping/manifold past what is indicated on this drawing. The manifold piping, valve, and instrumentation components shown on LRA-I-2336-05, location E-4, are shown with more detail on drawing I-2334-20 (Mechanical and Electrical Layout Turbine Gland Steam Sealing Panel H21P257). No additional component types subject to AMR were identified on this line.

Piping and components for the lines described above are included in LRA Table 3.4.2-3-5, Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-I-2336-06, locations B-7 and B-8

Drawing I-2333-07, Mechanical Layout – Turbine Protection Cubicle (Mech) H21P254, is not an LRA drawing. The two 10 CFR 54.4(a)(2) lines continuing to drawing I-2333-07 terminate at the turbine protection cubicle, H21P254. The screening boundary for 10 CFR 54.4(a)(2) ends at the cubicle wall. No additional component types subject to AMR were identified between the continuations and the terminations of these lines. These lines are included as component type "Piping" in LRA Table 3.4.2-3-5, Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-I-2336-26, location E-4

Drawing I-2334-05 was incorrectly identified as the continuation from LRA-I-2336-26, location E-4. The correct continuation is drawing LRA-I-2346-05 at location E-4. A corrective action document has been initiated to correct the drawing. Note that corrective action document also identified that the line identified as "From Loop Seal Oil Tank" on LRA-I-2336-26, location C-3, is a duplicate of the line from location E-4 such that the line in location C-3 will be removed from the drawing.

LRA-I-2336-26, location D-4

The 8-inch diameter 10 CFR 54.4(a)(2) line continuing from an unspecified drawing (and location) with a note "From Guard Piping." The guard piping encloses the pressurized lube oil supply piping to contain leaks and prevent fires that might result from oil spray contacting hot surfaces. There are no additional component types that are subject to AMR located within this piping. The lube oil return line is included as component type "Piping" in LRA Table 3.4.2-3-5,

Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-I-2346-05, location E-7
Drawing I-2346-06 is not an LRA drawing; it is an instrument flow diagram for the generator stator winding cooling water system. The 10 CFR 54.4(a)(2) line continuing to drawing I-2346-06 connects with the stator cooling water inlet to the generator pressure transmitter, the stator cooling water/gas from oil defoaming tank pressure differential indicator, and the main generator H_2 gas/water pressure differential switch. These instruments are active components and therefore not subject to aging management review. The instrument line subject to AMR is included as component type "Piping" in LRA Table 3.4.2-3-5, Main Turbine Generator and Auxiliaries System Nonsafety-Related Components Affecting Safety-Related Systems Summary of Aging Management Evaluation.

LRA-I-2346-05, locations F-4, E-4, and D-4
The 10 CFR 54.4(a)(2) lines with notes "To Portable Drum," "To Main Oil Tank," and "To Waste Oil Tank," are identified as follows.

- The line to the portable drum (location F-4) collects the oil recovered from the vent cover hatches and drains to a local point where the recovered oil is captured in drums for disposal. There is no continuation to another drawing.
- The line to the main oil tank (location E-4) is shown on drawing LRA-I-2336-26 at location E-4 and is the drain from main bearing #9 on the left side of the generator. This line goes from E-4 to D-4, then to D-3, and terminates at the main lube oil tank in C-3.
- The line to the waste oil tank (location D-4) continues on drawing LRA-M-2042 at location H-5 at the 1-inch seal oil unit oil drains continuation note. The line then traverses through G-5, G-6, and F-6 to the waste oil tank.

LRA Revisions:

None.