



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

December 22, 2020

Mr. Peter Dietrich  
Senior Vice President and  
Chief Nuclear Officer  
DTE Electric Company  
Fermi 2 – 260 TAC  
6400 North Dixie Highway  
Newport, MI 48166

SUBJECT: FERMI 2 - ISSUANCE OF AMENDMENT NO. 217 – REVISION TO TECHNICAL SPECIFICATIONS FOR SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS (EPID L-2019-LLA-0270)

Dear Mr. Dietrich:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 217 to Renewed Facility Operating License No. NPF-43 for the Fermi 2 facility in response to your application dated December 6, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19340A088).

The amendment revises Technical Specification (TS) 3.6.4.1, "Secondary Containment," Surveillance Requirements 3.6.4.1.1, 3.6.4.1.3, and 3.6.4.1.5. The amendment allows the secondary containment vacuum limit to not be met provided that the standby gas treatment system remains capable of establishing the required secondary containment vacuum, and revises the TS to permit secondary containment access openings to be open to permit entry and exit.

A copy of the related safety evaluation is also enclosed. A Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Surinder S. Arora, Project Manager  
Plant Licensing Branch III  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures:

1. Amendment No. 217 to Renewed NPF-43
2. Safety Evaluation

cc: Listserv



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

DTE ELECTRIC COMPANY

DOCKET NO. 50-341

FERMI-2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 217  
Renewed License No. NPF-43

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by DTE Electric Company (the licensee) dated December 6, 2019, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-43 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 217, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into the renewed license. DTE Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Nancy L. Salgado, Chief  
Plant Licensing Branch III  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License No. NPF-43  
and Technical Specifications

Date of Issuance: December 22, 2020

ATTACHMENT TO LICENSE AMENDMENT NO. 217

FERMI 2

RENEWED FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove

4

Insert

4

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3.6-41

3.6-42

Insert

3.6-41

3.6-42

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 217, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this renewed license. DTE Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

DTE Electric Company shall abide by the agreements and interpretations between it and the Department of Justice relating to Article I, Paragraph 3 of the Electric Power Pool Agreement between DTE Electric Company and Consumers Power Company as specified in a letter from The Detroit Edison Company to the Director of Regulation, dated August 13, 1971, and the letter from Richard W. McLaren, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, to Bertram H. Schur, Associate General Counsel, Atomic Energy Commission, dated August 16, 1971.

(4) Deleted

(5) Deleted

(6) Deleted

(7) Deleted

(8) Deleted

(9) Modifications for Fire Protection (Section 9.5.1, SSER #5 and SSER #6)\*

DTE Electric Company shall implement and maintain in effect all provisions of the approved fire protection program as described in its Final Safety Analysis Report for the facility through Amendment 60 and as approved in the SER through Supplement No. 5, subject to the following provision:

- (a) DTE Electric Company may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

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\* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report (SER) and/or its supplements wherein the license condition is discussed.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Secondary containment inoperable during movement of recently irradiated fuel assemblies in the secondary containment.	D.1 -----NOTE----- LCO 3.0.3 is not applicable. -----  Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 -----NOTE----- Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum and no movement of recently irradiated fuel is in progress. -----  Verify secondary containment vacuum is $\geq 0.125$ inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.1.2 -----NOTE-----            Not required to be met for one railroad bay access door until:            a. 4 hours after opening for entry, exit, or testing; and            b. 12 hours after opening for new fuel receipt activities provided the other door remains OPERABLE and closed.            -----</p> <p>Verify all secondary containment equipment hatches, pressure relief doors and railroad bay access doors are closed and sealed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.3 Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit and no movement of recently irradiated fuel is in progress.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.4 Verify steam tunnel blowout panels are closed.</p>	<p>Prior to entering MODE 2 or 3 from MODE 4 if not performed in the previous 31 days</p>
<p>SR 3.6.4.1.5 Verify each SGT subsystem will draw down the secondary containment to <math>\geq 0.25</math> inch of vacuum water gauge in <math>\leq 12</math> minutes.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.6 Verify each SGT subsystem can maintain <math>\geq 0.25</math> inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate <math>\leq 3000</math> cfm.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>



UNITED STATES  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 217

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-43

DTE ELECTRIC COMPANY

FERMI 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By application dated December 6, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19340A088), DTE Energy Company (DTE, the licensee) requested changes to the technical specifications (TSs) for Fermi 2 (Fermi).

The proposed changes would allow the secondary containment vacuum limit to not be met provided that the standby gas treatment (SGT) system remains capable of establishing the required secondary containment vacuum, and would revise the TS to permit secondary containment access openings to be open to permit entry and exit. The proposed changes are like those identified in Technical Specifications Task Force (TSTF) Traveler TSTF-551, Revision 3, "Revise Secondary Containment Surveillance Requirements" (ADAMS Accession No. ML16277A226). The U.S. Nuclear Regulatory Commission (NRC, the Commission) approved the traveler on September 21, 2017 (ADAMS Package Accession No. ML17236A365). However, the licensee submitted this license amendment request (LAR) on a plant-specific basis rather than by direct adoption of TSTF-551 due to a variation taken with respect to the fuel handling accident (FHA) analysis, which is discussed in Section 3.1 of this safety evaluation (SE). Considering the similarities of proposed changes to TSTF-551, the NRC staff used its TSTF-551 final model SE to help with format and content for this SE.

2.0 REGULATORY EVALUATION

2.1 System Description

The secondary containment is a structure that encloses the primary containment including components that may contain primary system fluid. The safety function of the secondary containment is to contain, dilute, and hold up fission products that may leak from the primary containment following a design-basis accident (DBA) to ensure the control room operator doses and offsite doses are within regulatory limits. There is no redundant train or system that can perform the secondary containment function should the secondary containment be inoperable.



The secondary containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations, and equipment, that physically form the secondary containment. Routinely used secondary containment access openings contain at least one inner and one outer door in an airlock configuration. In some cases, secondary containment access openings are shared such that there are multiple inner or outer doors. All secondary containment access doors are normally kept closed, except when the access opening is being used for entry and exit of personnel, equipment, or material.

Secondary containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground-level exfiltration of radioactive material while allowing the secondary containment to be designed as a mostly conventional structure, the secondary containment requires support systems to maintain the pressure at less than atmospheric pressure. During normal operation, non-safety-related systems are used to maintain the secondary containment at a slight negative pressure to ensure any leakage is into the building and that any secondary containment atmosphere exiting is via a pathway monitored for radioactive material. However, during normal operation, it is possible for the secondary containment vacuum to be momentarily less than the required vacuum for several reasons, such as during wind gusts or swapping of the normal ventilation subsystems.

During emergency conditions, the SGT system is designed to be capable of drawing down the secondary containment to a required vacuum within a prescribed time and continue to maintain the negative pressure as assumed in the accident analysis. For Fermi, the loss-of-coolant accident (LOCA) dose consequence analysis assumes that the SGT system filters 90 percent of the release 15 minutes after the beginning of the gap release, which is assumed to begin approximately 2 minutes after the onset of a LOCA. Surveillance Requirement (SR) 3.6.4.1.5 requires verification by test that each SGT subsystem draw at least a 0.25-inch water vacuum within 12 minutes. The FHA analysis assumes that the full release is filtered through the SGT system, which implicitly requires a secondary containment vacuum to exist during fuel handling and for the immediate start of the SGT system on high radiation. The leak tightness of the secondary containment together with the SGT system ensure that radioactive material is either contained in the secondary containment or filtered through the SGT system filter trains before being discharged to the outside environment via the elevated release point.

## 2.2 Proposed Technical Specification (TS) Changes

The proposed changes would allow the secondary containment vacuum surveillance test condition to not be met for a period of up to 4 hours, provided the SGT system remains capable of establishing the required secondary containment vacuum. The proposed changes would also allow for the temporary opening of the inner and outer doors of secondary containment for the purpose of entry and exit (i.e., normal opening and prompt closure of a door for transit).

### 2.2.1 Revision to SR 3.6.4.1.1

SR 3.6.4.1.1 currently requires verification that secondary containment vacuum is  $\geq 0.125$  inch of vacuum water gauge. This SR would be modified by a note that states: "Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum and no movement of recently irradiated fuel is in progress."

### 2.2.2 Revision to SR 3.6.4.1.3

SR 3.6.4.1.3 currently requires verification that one secondary containment access door in each access opening is closed. This SR would be modified by adding the following phrase to the end of the SR statement: "..., except when the access opening is being used for entry and exit and no movement of recently irradiated fuel is in progress."

### 2.2.3 Revision to SR 3.6.4.1.5

The licensee proposes to make an editorial change to SR 3.6.4.1.5, in which the words "standby gas treatment" are replaced with the initialism "SGT," which is defined previously in the licensee's proposed changes to SR 3.6.4.1.1.

## 2.3 Regulatory Requirements and Guidance

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(a)(1) requires an applicant for an operating license to include in the application proposed TS in accordance with the requirements of 10 CFR 50.36. The applicant must include in the application, a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls." However, per 10 CFR 50.36(a)(1), these TS bases "shall not become part of the technical specifications."

Additionally, 10 CFR 50.36(b) requires:

Each license authorizing operation of a...utilization facility...will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

The categories of items required to be in the TSs are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TSs will include limiting conditions for operation (LCOs), which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation at 10 CFR 50.36(c)(3) requires TSs to include items in the category of SRs, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

The NRC staff's guidance for review of TSs is in Chapter 16.0, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ADAMS Accession No. ML100351425). The NRC staff has prepared standard technical specifications (STS) for each of the light-water reactor nuclear steam supply systems and associated balance-of-plant equipment systems. The guidance specifies that the staff review whether content and format of proposed TS are consistent with the applicable STS. Where TS provisions depart from the reference TSs, the

staff determines whether proposed differences are justified by uniqueness in plant design or other considerations.

NUREG-0800, SRP Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Revision 0, dated July 2000 (ADAMS Accession No. ML003734190), provides guidance to the NRC staff for the review of alternate source term (AST) amendment requests. SRP 15.0.1 states that the NRC reviewer should evaluate the proposed change against the guidance in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," Revision 0, dated July 2000 (ADAMS Accession No. ML003716792).

RG 1.183 provides acceptable methodology for analyzing the radiological consequences of several design basis accidents to show compliance with 10 CFR 50.67. RG 1.183 provides guidance to licensees on acceptable application of AST (also known as the accident source term) submittals, including acceptable radiological analysis assumptions for use in conjunction with the accepted AST.

10 CFR 50.67, "Accident source term," (b)(2) states:

- (i) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).
- (ii) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 0.25 Sv (25 rem) total effective dose equivalent (TEDE).
- (iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective dose equivalent (TEDE) for the duration of the accident.

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's application to determine if the proposed changes are consistent with the guidance, regulations, and licensing information discussed in Section 2.3 of this SE and the approved traveler TSTF-551, Revision 3. In determining whether an amendment to a license will be issued, the Commission is guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. In making its determination as to whether to amend the license, the NRC staff considered those regulatory requirements that are automatically conditions of the license through 10 CFR 50.54.

The regulation at 10 CFR 50.36(a)(1) states, in part: "A summary statement of the bases or reasons for such specifications...shall also be included in the application, but shall not become part of the technical specifications." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes that correspond to the proposed TS changes for information only. The NRC staff confirmed that the TS bases described the basis for each revised TS requirement accurately as described in Chapter 16.0 of NUREG-0800.

### 3.1 Proposed Change to SR 3.6.4.1.1

The licensee proposed to add a note to SR 3.6.4.1.1 that would allow the SR to not be met for up to 4 hours if an analysis demonstrates that one SGT subsystem can establish the required secondary containment vacuum. During normal operation, conditions may occur that result in SR 3.6.4.1.1 not being met for short durations. For example, environmental factors that lower external pressure or loss of the normal ventilation system that maintains secondary containment vacuum may affect secondary containment vacuum. These conditions may not be indicative of degradations of the secondary containment boundary or of the ability of the SGT system to perform its specified safety function.

The proposed note provides an allowance for the licensee to confirm secondary containment operability by confirming that one SGT subsystem is capable of performing its specified safety function. This confirmation is necessary to apply the exception to meeting the SR acceptance criterion. While the duration of these occurrences is anticipated to be very brief, the allowance is permitted for a maximum of 4 hours, which is consistent with the time permitted for secondary containment to be inoperable per Condition B of LCO 3.6.4.1.

The proposed note would apply only when movement of recently irradiated fuel is not in progress. The licensee states the following in its LAR:

The FHA radiological dose consequence analysis establishes a basis for distinguishing between secondary containment requirements during the movement of irradiated fuel depending on whether or not the fuel is considered “recently irradiated” as described in [updated final safety analysis report (UFSAR)] UFSAR Section 15.7.4.5. The case involving a FHA with fuel that is no longer considered recently irradiated does not credit secondary containment. The case involving a FHA with recently irradiated fuel does credit secondary containment as being operable. This distinction is shown in UFSAR Table 15.7.4-1 and is also reflected in the TS since TS 3.6.4.1 has a specific mode of applicability for movement of only recently irradiated fuel. Although the UFSAR Section 15.7.4 analysis for a FHA involving recently irradiated fuel does credit secondary containment, it does so without an explicit assumption regarding the time required to draw secondary containment pressure down to a specified value. This is consistent with an assumed secondary containment initial condition of below atmospheric pressure. The SR 3.6.4.1.1 acceptance criteria ensures this analysis assumption is valid. For this reason, the allowance for SR 3.6.4.1.1 to not be met does not apply to the FHA involving recently irradiated fuel. The proposed Note to SR 3.6.4.1.1 includes a limitation to prevent its use during the movement of recently irradiated fuel. The “movement of recently irradiated fuel” is a defined TS mode of applicability used in TS 3.6.4.1 (as well as other TS). Recently irradiated fuel is defined in the TS 3.6.4.1 Bases as fuel that has occupied part of a critical reactor core within the previous 6.3 days. Use of this phrase for the limitation to the proposed Note is therefore clearly defined.

As stated above, a case involving the FHA with fuel that is no longer considered recently irradiated does not credit secondary containment, and the case involving the FHA with recently irradiated fuel does credit secondary containment as being operable. The proposed note to SR 3.6.4.1.1 prevents using the allowance for SR 3.6.4.1.1 to not be met during the movement of recently irradiated fuel. Therefore, the NRC staff determines that the allowance for SR 3.6.4.1.1 does not affect Fermi’s UFSAR, Section 15.7.4, analysis for an FHA.

The NRC staff has evaluated the impact of this note on the licensee's design basis radiological consequence analyses to ensure that the proposed change will not result in an increase in the dose consequences and that the resulting calculated doses remain within the current radiological consequence analyses.

The proposed addition of the note to SR 3.6.4.1.1 does not change the TS requirement to meet SR 3.6.4.1.5 and SR 3.6.4.1.6. SR 3.6.4.1.5 requires verification that the secondary containment can be drawn down to  $\geq 0.25$  inch of vacuum water gauge in  $\leq 12$  minutes using one SGT subsystem. SR 3.6.4.1.6 requires verification that the secondary containment can be maintained at  $\geq 0.25$  inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate  $\leq 3000$  cubic feet per minute. In addition, TS LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," must be met; otherwise, the licensee shall follow any remedial action specified by the TSs until the condition can be met.

The licensee's analysis assumes that the secondary containment attains its required pressure within 17 minutes of the initiation of the DBA LOCA. This assumption was confirmed by conservative calculations. SR 3.6.4.1.5 requires the SGT to establish the required pressure within 12 minutes. The licensee states in the LAR that "[t]he average time it takes SGT subsystem to draw down secondary containment at Fermi when tested for SR 3.6.4.1.5 is approximately 95 seconds based on the last 10 SR tests (i.e., the last 5 for each SGT subsystem)." Therefore, the SGT system can likely establish the required pressure in a significantly shorter time than that required by SR 3.6.4.1.5.

As discussed above, secondary containment operability is based on its ability to contain, dilute, and hold up fission products that may leak from primary containment following a DBA. To prevent ground level exfiltration of radioactive material the secondary containment pressure must be maintained at a pressure that is less than atmospheric pressure. The secondary containment requires support systems to maintain the control volume pressure less than atmospheric pressure. Following an accident, the SGT system ensures the secondary containment pressure is less than the external atmospheric pressure. During normal operation, non-safety related systems are used to maintain the secondary containment at a negative pressure. However, during normal operation, it is possible for the secondary containment vacuum to be momentarily less than the required vacuum for several reasons. These conditions may not be indicative of degradations of the secondary containment boundary or of the ability of the SGT system to perform its specified safety function. The NRC staff determined that there is reasonable assurance that the secondary containment and SGT system will maintain the vacuum requirements during a DBA, despite a short-term indication of reduced vacuum, for the following reasons:

- the licensee will still meet the requirements of SR 3.6.4.1.5 and SR 3.6.4.1.6, which demonstrates adequate secondary containment integrity to support establishment and maintenance of a secondary containment vacuum with a single train of SGT;
- the licensee will still meet the requirement of TS LCO 3.6.4.3, which ensures at least one SGT train will be operable during operating modes where secondary containment operability is required; and
- a significant degradation of secondary containment integrity would typically result from an identifiable event and produce a consistent, notable reduction in vacuum so that SR 3.6.4.1.1 could not be met or the operator would recognize that secondary containment integrity was challenged and take appropriate action.

Therefore, the NRC staff has determined that if the conditions do not affect: (1) the ability to maintain the secondary containment pressure during an accident, at a vacuum that is consistent with the accident analyses, and (2) the time assumed in the accident analyses to draw down the secondary containment pressure, which accordingly enables the secondary containment to perform its safety function, and, therefore, will comply with the corresponding TS. This is evident by the licensee still being required to meet SR 3.6.4.1.5 and SR 3.6.4.1.6. These SRs require the SGT system to establish and maintain the required vacuum in the secondary containment as assumed in the accident analyses.

Furthermore, because the specified safety functions of the secondary containment and SGT system can be performed in the time assumed in the licensee's accident analysis, the fission products that bypass or leak from primary containment, or those released from the reactor coolant pressure boundary components located in secondary containment, will be contained and processed as assumed in the licensee's design basis radiological consequence dose analyses. The NRC staff finds that the proposed change does not affect the current radiological consequence analyses for the LOCA and concludes that the proposed change is acceptable with respect to the radiological consequences of DBAs since the 4-hour exception to SR 3.6.4.1.1 does not apply to conditions that could lead to an FHA.

### 3.2 Proposed Change to SR 3.6.4.1.3

The NRC staff's review was limited to the licensee's request to provide an allowance for the brief, inadvertent, simultaneous opening of redundant secondary containment access doors during normal entry and exit conditions when no movement of recently irradiated fuel is in progress. Planned activities that could result in the simultaneous opening of redundant secondary containment access openings, such as maintenance of a secondary containment personnel access door, or movement of large equipment through the openings that would take longer than the normal transit time, are considered outside the scope of this review.

The NRC staff reviewed the proposed changes to SR 3.6.4.1.3. The NRC staff determined that, if modified, the SR would continue to provide appropriate confirmation that secondary containment boundary doors are properly positioned and capable of performing their function in preserving the secondary containment boundary. The NRC staff determined that the SRs continue to appropriately verify the operability of the secondary containment and provide assurance that the necessary quality of systems and components are maintained in accordance with 10 CFR 50.36(c)(3).

Additionally, the NRC staff evaluated the impact of modifying the licensee's TS to allow secondary containment access openings to be open for entry and exit on the licensee's DBA radiological consequence dose analyses to ensure that the modification will not result in an increase in the radiation dose consequences, and that the resulting calculated radiation doses will remain within the design criteria specified in the current radiological consequence analyses. The NRC staff's review of these DBAs determined that there are two DBAs that take credit for the secondary containment, and are possibly impacted by the brief, inadvertent, simultaneous opening of both an inner and outer access door during normal entry and exit conditions, the LOCA and the FHA in secondary containment. During conditions that could lead to an FHA with recently irradiated fuel, secondary containment is required be maintained without exception for short-term increases of pressure and without allowance for short-term opening of two access doors in the same containment entry access opening.

### 3.2.1 LOCA

Following a LOCA, the secondary containment structure is maintained at a negative pressure ensuring that leakage from primary containment to secondary containment can be collected and filtered prior to a release to the environment. The SGT system performs the function of maintaining a negative pressure within the secondary containment, as well as collecting and filtering the leakage from primary containment. The licensee credits the SGT system for mitigation of the radiological releases from the secondary containment. In the LOCA analysis, the secondary containment drawdown analysis assumes that SGT system can draw down the secondary containment within 17 minutes. TS SR 3.6.4.1.5 requires one SGT subsystem to draw down the secondary containment, to greater than or equal to 0.25 inches of vacuum water gauge in a maximum allowable time of 12 minutes.

Conservatively, the DBA LOCA radiological consequence analysis in Fermi UFSAR Chapter 15 assumes that following the start of a DBA LOCA, the secondary containment pressure of 0.25 inches of vacuum water gauge is achieved at approximately 17 minutes. The licensee assumes that releases into the secondary containment prior to the 17-minute draw down time leak directly to the environment as a ground level release with no filtration. After the assumed 17-minute draw down these releases are filtered by the SGT system and released via the SGT system exhaust vent.

Based on this information, the NRC staff concludes that the licensee's DBA LOCA analysis has sufficient conservatism by assuming a draw down time of 17 minutes from the start of the DBA LOCA. Margin exists to ensure that the secondary containment can be reestablished during a brief, inadvertent, simultaneous opening of the inner and outer doors, and there is reasonable assurance that a failure of a safety system needed to control the release of radioactive material to the environment will not result. The brief, inadvertent, simultaneous opening of the secondary containment access doors does not impact the design bases and will not result in an increase in any onsite or offsite dose. As stated previously, planned activities that could result in the simultaneous opening of redundant secondary containment access openings for periods longer than the normal transit time, such as maintenance of a secondary containment personnel access door or movement of large equipment through the openings, is outside the scope of the NRC staff's review in this SE.

Based on the above discussion, the NRC staff finds that the licensee's proposed change to the TSs does not impact the licensee's design basis LOCA radiological consequence analysis and will not result in an increase in any onsite or offsite dose. Therefore, the NRC staff concludes that this change is acceptable with respect to the radiological consequences of the LOCA DBA.

The licensee was approved for alternative source term methodology and the radiological dose consequences analyses for DBAs via Amendment No. 160 for Fermi dated September 28, 2004 (ADAMS Accession No. ML042430179). The NRC staff reviewed the impact of the proposed changes to Fermi TS on all DBAs currently analyzed in the Fermi UFSAR that could have the potential for significant dose consequences. Chapter 15 of the Fermi UFSAR describes the DBAs and their radiological consequence analysis results. Accordingly, the NRC staff finds that the proposed changes to the TS maintain the assumptions and initial conditions assumed in the LOCA analyses such that they will remain valid.

### 3.2.2 FHA in Secondary Containment

Although TSTF-551 includes provisions to allow changes to the TS to allow similar exceptions for the FHA, DTE did not request such changes. As discussed in Section 3.1 of this SE, the NRC staff verified that the licensee's proposed changes to the TS, which allow justified relaxations to SRs 3.6.4.1.1 and 3.6.4.1.3, were modified adequately to exclude their application during conditions where an FHA with recently irradiated fuel is possible. The staff concludes that no additional consideration of the FHA is required.

### 3.2.3 Conclusion

As described above, the NRC staff reviewed the technical basis provided by the licensee to assess the radiological impacts of the changes to the secondary containment in the licensee's TSs. The NRC staff finds that the licensee's proposed change to SR 3.6.4.1.3 is consistent with regulatory requirements and guidance identified in Section 2.3 of this SE, and with TSTF-551, Revision 3, as approved by the NRC. The NRC staff finds, with reasonable assurance that the licensee's changes to the TSs will continue to comply with these criteria, and that the licensee's estimates of the dose consequences of a design basis LOCA and FHA will comply with the requirements of the current radiological consequence analyses. Therefore, the proposed changes are acceptable regarding the radiological consequences of the postulated DBAs.

### 3.3 Proposed Change to SR 3.6.4.1.5

The changes to SR 3.6.4.1.5 are editorial only and do not change any technical aspects of SR 3.6.4.1.5. The NRC staff determined that the change is acceptable.

### 3.4 Variations from the Approved Traveler

The licensee's note that SR 3.6.4.1.1 is not required to be met for 4 hours under the required conditions is not applied to the FHA as the note is not applicable when movement of recently irradiated fuel in progress. Similarly, the licensee does not allow momentary opening of two doors in a single access opening in SR 3.6.4.1.3 when recently irradiated fuel movement is in progress. These changes are acceptable because they are more restrictive than the TSTF-551, and the licensee applies the note only to conditions having an acceptable evaluation (i.e., LOCA).

The Fermi TSs utilize different numbering than the STSs on which TSTF-551 was based. Specifically, the Fermi TSs have a SR 3.6.4.1.4 to verify that steam tunnel blowout panels are closed. The STSs do not include this SR. This results in SRs for verification that each SGT system to draw down containment pressure and maintain adequate vacuum are numbered differently from the STS as discussed in the next sentences. The SR to verify the ability to draw down secondary containment pressure at Fermi is SR 3.6.4.1.5 instead of SR 3.6.4.1.4 as in the STSs. The Fermi SR for verification of the ability of the SGT to maintain adequate secondary containment vacuum for 1 hour is SR 3.6.4.1.6 instead of SR 3.6.4.1.5 as in the STSs. These differences are administrative and do not affect the applicability of TSTF-551 to the Fermi TSs.

### 3.5 Summary

The NRC staff reviewed the proposed changes and determined that these changes to the TSs meet the requirements in 10 CFR 50.36(b). The proposed SRs assure that the necessary quality of systems and components is maintained, that facility operation will be within required



safety limits, and that the LCOs will be met, in accordance with 10 CFR 50.36(c)(3). Additionally, the changes to the TS were reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP, Chapter 16.0.

Additionally, the NRC staff has evaluated the impact of the proposed changes on the design basis radiological consequence analyses against the regulatory requirements and guidance identified in Section 2.3 of this SE. The NRC staff finds, with reasonable assurance, the licensee's changes to the TSs will continue to comply with the requirements of the current Fermi radiological consequence analyses. Therefore, the proposed changes are acceptable with regard to the radiological consequences of the postulated DBAs.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment on September 28, 2020. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes SRs and certain requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on February 11, 2020 (85 FR 7791). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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SUBJECT: FERM2 - ISSUANCE OF AMENDMENT NO. 217 – REVISION TO TECHNICAL SPECIFICATIONS FOR SECONDARY CONTAINMENT SURVEILLANCE REQUIREMENTS (EPID L-2019-LLA-0270) DATED DECEMBER 22, 2020

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