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DTE

December 6, 2019 10 CFR 50.90
NRC-19-0075

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

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

Subject: License Amendment Request – Proposed Revision to Technical Specifications for Secondary Containment Surveillance Requirements

References: 1) TSTF-551, "Revise Secondary Containment Surveillance Requirements," Revision 3, dated October 3, 2016 (ML16277A226)

2) "Final Safety Evaluation of Technical Specifications Task Force Traveler TSTF-551, Revision 3, Revise Secondary Containment Surveillance Requirements," dated September 21, 2017 (ML17236A365)

Pursuant to Title 10 of the Code of Federal Regulations Section 50.90 (10 CFR 50.90), DTE Electric Company (DTE) hereby submits this License Amendment Request (LAR) to revise the Technical Specifications (TS) for Fermi Unit 2 (i.e., Appendix A, Technical Specifications of Renewed Facility Operating License NPF-43).

The proposed change revises TS 3.6.4.1, "Secondary Containment," Surveillance Requirement (SR) 3.6.4.1.1. The SR is revised to address conditions during which the secondary containment pressure may not meet the SR pressure requirements. In addition, SR 3.6.4.1.3 is modified to acknowledge that secondary containment access openings may be open for entry and exit. An administrative change is also made to SR 3.6.4.1.5.

The proposed changes are similar to those identified in the TS Task Force (TSTF) Traveler TSTF-551 (Reference 1) and approved by the NRC (Reference 2). However, this LAR is being submitted 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.

Enclosure 1 provides a description and evaluation of the proposed change. Enclosure 2 provides the existing TS pages marked up to show the proposed change. Enclosure 3

provides revised (clean) TS pages. Enclosure 4 provides existing TS Bases pages marked up to show the associated TS Bases changes and is provided for information only.

DTE requests approval of the proposed License Amendment by December 6, 2020 with the amendment being implemented within 60 days.

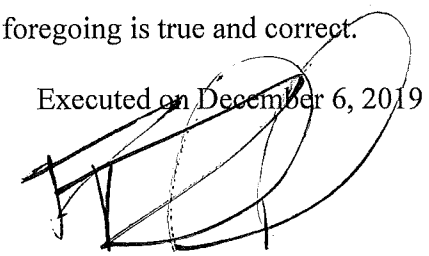
No new commitments are being made in this submittal.

In accordance with 10 CFR 50.91, a copy of this application, with enclosures, is being provided to the designated Michigan State Official.

Should you have any questions or require additional information, please contact Mr. Jason R. Haas, Manager – Nuclear Licensing, at (734) 586-1769.

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

Executed on December 6, 2019



Peter Dietrich
Senior Vice President and CNO

Enclosures:

1. License Amendment Request Description and Evaluation
2. Proposed Technical Specification Changes (Mark-Up)
3. Revised Technical Specification Pages
4. Proposed Technical Specification Bases Changes (Mark-Up) – Information Only

cc: NRC Project Manager
NRC Resident Office
Regional Administrator, Region III
Michigan Department of Environment, Great Lakes, and Energy

Enclosure 1 to
NRC-19-0075

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

License Amendment Request – Proposed Revision to Technical Specifications for Secondary Containment Surveillance Requirements

License Amendment Request Description and Evaluation

1.0 SUMMARY DESCRIPTION

Pursuant to Title 10 of the Code of Federal Regulations (CFR) Section 50.90 (10 CFR 50.90), DTE Electric Company (DTE) hereby submits this License Amendment Request (LAR) to revise the Fermi Unit 2 (Fermi 2) Nuclear Power Plant Technical Specifications (TS) (i.e., Appendix A, Technical Specifications of Renewed Facility Operating License NPF-43).

The proposed change revises TS 3.6.4.1, "Secondary Containment," Surveillance Requirement (SR) 3.6.4.1.1. The SR is revised to allow conditions during which the secondary containment pressure may not meet the SR pressure requirements. In addition, SR 3.6.4.1.3 is modified to acknowledge that secondary containment access openings may be open for entry and exit. An administrative change is also made to SR 3.6.4.1.5.

2.0 DETAILED DESCRIPTION

The proposed change addresses issues related to the secondary containment pressure and access openings. The proposed changes are similar to those identified in the TS Task Force (TSTF) Traveler TSTF-551, "Revise Secondary Containment Surveillance Requirements." However, this LAR is being submitted on a plant-specific basis rather than by direct adoption of TSTF-551 due to a variation as will be described in this section.

The secondary containment is a single system that performs a safety function and is required to be operable per TS Limiting Condition for Operation (LCO) 3.6.4.1. There is no redundant train or system that can perform the secondary containment function should the secondary containment be inoperable. The Required Action B.1 of TS 3.6.4.1 provides a 4 hour Completion Time to restore an inoperable secondary containment to operable status. As stated in the TS Bases, "The 4 hour Completion Time provides a period of time to correct the problem that is commensurate with the importance of maintaining secondary containment during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring secondary containment OPERABILITY) occurring during periods where secondary containment is inoperable is minimal."

NUREG-1022, Revision 3, "Event Report Guidelines 10 CFR 50.72 and 50.73" (Reference 1), discusses the reporting criteria contained in 10 CFR 50.72 and 50.73. The discussion of 50.72(b)(3)(v) and 50.73(a)(2)(v), "Any event or condition that could have prevented the fulfillment of the safety function," states, "There are a limited number of single-train systems that perform safety functions (e.g., the HPCI system in BWRs). For such systems, inoperability of the single train is reportable even though the plant TS may allow such a condition to exist for a limited time." Under this guidance, failure to meet the secondary containment LCO or SRs for any period time, even for a brief period much less than the 4 hour Completion Time, requires declaring the secondary containment inoperable and, therefore, reporting the condition under 10 CFR 50.72 and 10 CFR 50.73. This reporting requirement has resulted in numerous Event Notifications (ENs) and Licensee Event Reports (LERs) throughout the industry in the last several years even though in the vast majority of cases the secondary containment was restored to operable status quickly (i.e., much less than the 4 hour Completion Time) and the secondary

containment continued to be capable of performing its safety function throughout that time. These reports are an unwarranted use of licensee and NRC resources, given that in the majority of cases the safety function of the secondary containment is maintained.

To address this situation, the TS Task Force prepared a proposed generic change to the Standard TS via the traveler TSTF-551, "Revise Secondary Containment Surveillance Requirements." Revision 3 of TSTF-551 (Reference 2) was submitted to the NRC for review and approval in October 2016. TSTF-551 included a model application which could be used by licensees desiring to adopt the change following NRC approval. The NRC approved TSTF-551, Revision 3, in September 2017 (Reference 3).

Similar to the industry experience resulting in the creation of TSTF-551, Fermi 2 has also made several ENs and LERs due to secondary containment requirements in the past few years (e.g., References 4 and 5). As a result, DTE has reviewed TSTF-551 for potential adoption by Fermi 2. During the reviews, it was identified that the model application for TSTF-551 included a Preparer's Note which stated that, "The proposed change is not applicable if the radiological dose consequence analysis assumes the [secondary] containment pressure is below atmospheric pressure prior to or coincident with the time at which the accident or event occurs. Such an analysis assumption would require a revised radiological dose consequence analysis considering the new release point (the open [secondary] containment doors), with appropriate atmospheric dispersion factors, and any other necessary revisions to the accident or event analysis, which is beyond the scope of the traveler." Section 3.2 of the NRC safety evaluation for TSTF-551 includes a similar note. DTE performed a review of the radiological dose consequence analysis for Fermi 2 to determine if this Preparer's Note would impact the ability for Fermi 2 to adopt TSTF-551.

The radiological consequence analysis for Fermi 2 was approved by the NRC on September 9, 1992 (Reference 6) and is documented in Updated Final Safety Analysis Report (UFSAR) (Reference 7) Section 15.0. Revised radiological consequence analyses of the fuel handling accident (FHA) in UFSAR Section 15.7.4 and the loss of coolant accident (LOCA) in UFSAR Section 15.6.5 using the methods and assumptions of the Alternate Source Term (AST) were approved by the NRC on September 28, 2001 (Reference 8) and September 28, 2004 (Reference 9). A revision to the radiological consequence analysis of the control rod drop accident in UFSAR Section 15.4.9 to also use AST was approved by the NRC on September 20, 2018 (Reference 10). The DTE review of the various analyses determined that only the radiological consequences of the FHA and LOCA credit secondary containment. Therefore, the FHA and LOCA are the only two events applicable to the proposed change to secondary containment requirements. This DTE conclusion about the applicability of these two events is consistent with the same conclusion in Section 3.2 of the NRC safety evaluation for TSTF-551.

The Fermi 2 LOCA radiological dose consequence analysis assumes the secondary containment pressure is at atmospheric pressure at the time at which the LOCA occurs, as described in UFSAR Section 6.2.3.3.2. Per the Preparer's Note described above, the proposed change in TSTF-551 would apply to the LOCA analysis since it does not assume below atmospheric pressure prior to or coincident with the time at which the LOCA occurs.

The Fermi 2 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." The case involving a FHA with fuel that is no longer considered recently irradiated does not credit secondary containment and therefore TS 3.6.4.1 is not applicable. The case involving a FHA with recently irradiated fuel credits secondary containment as being operable but without an explicit assumption regarding the time required to draw secondary containment pressure down to a specified value. This is consistent with a secondary containment initial condition of below atmospheric pressure. Although the Fermi 2 FHA analysis has been approved by the NRC, the initial conditions are different than those described in TSTF-551. Therefore, consistent with the Preparer's Note in TSTF-551 and the similar note in Section 3.2 of the NRC safety evaluation, the proposed changes in TSTF-551 are not applicable specifically to the movement of recently irradiated fuel.

The NRC letter approving TSTF-551 states that, "The traveler TSTF-551, Revision 3, does not prevent licensees from requesting an alternate approach or proposing changes other than those in TSTF-551, Revision 3. However, significant changes from the approach recommended or the inclusion of additional changes in the LAR will require additional NRC staff review, increase the time and resources needed for the review, and/or result in non-acceptance of the LAR. Licensees desiring significant or additional changes should instead submit an LAR that does not claim to adopt TSTF-551, Revision 3." Based on DTE's review of the Fermi 2 licensing basis (more specifically, the FHA analysis), and consistent with the NRC letter approving TSTF-551, DTE has elected to not submit a LAR directly adopting TSTF-551. Instead, DTE is proposing changes to the TS on a plant-specific basis. The proposed changes are similar to the changes identified in TSTF-551 but include a variation that addresses the methodology and assumptions utilized in the Fermi 2 FHA analysis.

The following changes are proposed to the Fermi 2 TS:

<u>Proposed SR 3.6.4.1.1 Note:</u>
SR 3.6.4.1.1 requires the secondary containment vacuum to be greater than a required vacuum limit at all times. However, it is possible for the secondary containment vacuum to be momentarily less than the required vacuum for a number of reasons, such as during wind gusts and during maintenance, testing, or swapping of the normal ventilation subsystems. These conditions do not affect the ability of the standby gas treatment (SGT) system to establish and maintain the required vacuum in the secondary containment as assumed in the accident analyses. However, should secondary containment pressure not meet the SR 3.6.4.1.1 vacuum requirement (however briefly), the secondary containment must be declared inoperable and the event reported under 10 CFR 50.72 and 50.73. To address this situation, a Note is added to SR 3.6.4.1.1 which 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." This Note addresses conditions in which the secondary containment vacuum is less than the required vacuum limit but the secondary containment leak tight boundary is not affected such that the one SGT subsystem remains capable of limiting releases from the secondary containment in accordance with the assumptions

of the accident analysis. In this case, the proposed Note allows a deviation from SR acceptance criteria without declaring the secondary containment inoperable with the attendant reporting requirements. The proposed Note also specifies that it is not to be used during movement of recently irradiated fuel. This limitation on the use of the proposed Note is consistent with maintaining plant conditions within the assumed initial conditions of the accident analysis of a FHA involving recently irradiated fuel. A markup showing the proposed change is provided in Enclosure 2 of this letter.

Proposed SR 3.6.4.1.3 Revision:

Another issue being addressed is unintentional, simultaneous opening of both an inner and outer secondary containment access opening door. While most secondary containment access points at Fermi 2 have interlocks to prevent opening both an inner and outer door, the interlocks may not be effective depending on the timing of the openings. Under the Fermi 2 TS, opening both an inner and outer door in an access opening at the same time would result in failure to meet SR 3.6.4.1.3, which requires one access door in each access opening to be closed. This situation requires declaring the secondary containment inoperable with the attendant reporting requirements as described above. The BWR/6 Standard TS (NUREG-1434, Reference 11) SR 3.6.4.1.3 contains an exception for both doors in an access opening to be open simultaneously for normal entry and exit. In addition, the BWR/4 Standard TS (NUREG-1433, Reference 12) SR 3.6.4.1.3 has been revised under TSTF-551 to add a similar exception for BWR/4 plants (of which Fermi 2 is one). To address this situation, an exception is added to SR 3.6.4.1.3 to allow both doors in an access opening to be opened "when the access opening is being used for entry and exit and no movement of recently irradiated fuel is in progress." Similar to the proposed SR 3.6.4.1.1 Note described above, the proposed exception also specifies that the exception is not to be used during movement of recently irradiated fuel. This limitation on the use of the exception is consistent with maintaining plant conditions within the assumed initial conditions of the accident analysis of a FHA involving recently irradiated fuel. A markup showing the proposed change is provided in Enclosure 2 of this letter.

Proposed SR 3.6.4.1.5 Revision:

In the current Fermi 2 TS 3.6.4.1, the standby gas treatment system is first mentioned in SR 3.6.4.1.5. As a result, the corresponding acronym SGT is first defined in this SR. However, with the proposed Note to SR 3.6.4.1.1, SGT will now be defined at first use in SR 3.6.4.1.1. Therefore, an administrative change is proposed to SR 3.6.4.1.5 to use only the acronym SGT. A markup showing the proposed change is provided in Enclosure 2 of this letter.

Proposed TS Bases Revisions:

The SR 3.6.4.1.1 Bases are revised to be consistent with the proposed SR Note and to state that use of the Note is expected to be an infrequent occurrence. The current combined Bases for SR 3.6.4.1.2 and SR 3.6.4.1.3 are separated and the Bases of SR 3.6.4.1.3 are revised to be consistent with the proposed changes to the SR. The Bases for both SR 3.6.4.1.1 and 3.6.4.1.3 specify the restrictions associated with the movement of recently irradiated fuel. A markup showing the proposed Bases changes is provided for information only in Enclosure 4 of this letter.

3.0 TECHNICAL EVALUATION

The secondary containment is a structure that completely encloses the primary containment and those components that may contain primary system fluid. It is possible for the secondary containment pressure to rise relative to the environmental atmospheric pressure. To prevent ground level exfiltration of radioactive material while allowing the secondary containment to be designed as a conventional structure, the secondary containment requires support systems to maintain the control volume pressure at less than atmospheric pressure. During normal operation, non-accident systems are used to maintain the secondary containment at a negative pressure. SR 3.6.4.1.1 requires the secondary containment to be ≥ 0.125 inch of vacuum water gauge when the secondary containment is required to be operable (Modes 1, 2, and 3, and during movement of recently irradiated fuel assemblies in secondary containment). SR 3.6.4.1.5 requires verification that the secondary containment can be drawn down to be ≥ 0.25 inch of vacuum water gauge in ≤ 12 minutes using one SGT subsystem. SR 3.6.4.1.6 requires verification that the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 3000 cfm. Following an accident, the SGT system ensures the secondary containment pressure is less than the external atmospheric pressure.

The secondary containment boundary is the combination of walls, floor, roof, ducting, doors, hatches, penetrations and equipment that physically form the secondary containment. A secondary containment access opening contains an inner and an outer door. All secondary containment access doors are normally kept closed, except when the access opening is being used for entry and exit of personnel or equipment.

The safety function of the secondary containment is to contain, dilute, and hold up fission products that may leak from primary containment following a design basis accident (DBA) to ensure the control room operator and offsite doses are within the regulatory and NRC-approved limits. In conjunction with operation of the SGT system and closure of certain valves whose lines penetrate the secondary containment, the secondary containment is designed to reduce the activity level of the fission products that bypass or leak from primary containment, or are released from the reactor coolant pressure boundary components located in secondary containment prior to release to the environment. For the secondary containment to be considered operable, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained by a single operating SGT subsystem.

The secondary containment vacuum requirements (which demonstrate leak-tightness) and the SGT system together ensure radioactive material is contained. As long as a SGT subsystem can draw the required vacuum on the secondary containment when needed (as demonstrated by SR 3.6.4.1.5 or SR 3.6.4.1.6), the secondary containment can perform its safety function.

Conditions affecting secondary containment pressure may occur that do not affect the ability of the secondary containment to be able to perform its safety function. Examples are:

- Wind gusts that lower external pressure, which could result in a differential pressure less than the SR limit. The wind gusts do not indicate degradation in the secondary containment boundary nor challenge the leak tightness of the secondary containment to preclude exfiltration under expected wind conditions.
- Loss of the normal, non-emergency ventilation system that maintains the secondary containment vacuum, due to equipment failure or swapping of operating equipment. This loss of vacuum does not affect the secondary containment boundary, the non-emergency ventilation system is not assumed to operate during an accident, and the SGT system remains capable to establishing the necessary vacuum in the event of an accident.

In these and similar cases, the secondary containment remains capable of containing, diluting, and holding up fission products that may leak from primary containment following a DBA, which will ensure the control room operator and offsite doses are within the regulatory and NRC-approved limits. The proposed SR Note will allow licensees to perform an analysis of the actual environmental and secondary containment pressure conditions to verify that one SGT subsystem remains capable of establishing the required secondary containment vacuum within the time assumed in the accident analysis.

As discussed in Section 2, the reporting requirements in 10 CFR 50.72 and 50.73 require prompt notification (ENs) and submittal of an LER whenever the secondary containment is inoperable, regardless of whether secondary containment could still fulfill its safety function. To address this situation, the following changes are proposed which will allow the secondary containment to be operable during circumstances which currently would require declaring the secondary containment inoperable.

3.1 Proposed SR 3.6.4.1.1 Note

As discussed above, the secondary containment vacuum is required by SR 3.6.4.1.1 to be greater than the required vacuum (i.e., 0.125 inch of vacuum water gauge) at all times. To address situations in which SR 3.6.4.1.1 may not be met but secondary containment is still operable, a Note is proposed. The Note 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.*

Conditions in which secondary containment vacuum may be less than the required containment vacuum may occur in situations, such as, but not limited to, wind gusts and failure or change of operating normal ventilation subsystems. 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. Conditions which do not affect the ability of the secondary containment to perform this function should not result in failure to meet the SR.

The LOCA radiological dose consequence analysis in the Fermi 2 UFSAR explicitly credits secondary containment operability. As shown in UFSAR Table 15.6.5-1, the LOCA analysis

assumes 15 minutes for secondary containment drawdown following the 2 minute gap release. This allows a total of 17 minutes for the secondary containment pressure to be drawn down to the assumed value of ≥ 0.25 inch of vacuum water gauge during LOCA conditions. UFSAR Section 6.2.3.3.2 contains an analysis of the secondary containment pressure response during a LOCA using the GOTHIC computer program. The analysis conservatively assumes that initial secondary containment pressure is 0.0 inch of vacuum water gauge rather than the ≥ 0.125 inch of vacuum water gauge required by SR 3.6.4.1.1. The results of the analysis, shown in UFSAR Figure 6.2-21, show that secondary containment pressure reaches the LOCA assumed value of ≥ 0.25 inch of vacuum water gauge in less than 17 minutes (i.e., less than 1,020 seconds). Therefore, there is a range of actual secondary containment conditions under which SR 3.6.4.1.1 is not met, but the safety function of secondary containment credited in the LOCA would still be met.

In addition, SR 3.6.4.1.5 requires verifying that secondary containment can be drawn down using one SGT subsystem in ≤ 12 minutes. The average time it takes a SGT subsystem to draw down secondary containment at Fermi 2 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).

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 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 3.4.6.1.1 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.

Based on the above discussion, if the SR 3.6.4.1.1 acceptance criterion is not met, an analysis of the actual conditions (equipment configuration, temperature, atmospheric pressure, wind conditions, measured secondary containment vacuum, etc.) can be performed to determine whether, if a LOCA were to occur, one train of SGT could establish the assumed secondary containment vacuum within the time assumed in the LOCA analysis. If so, the SR may be considered met. The analysis associated with the proposed Note need only consider occurrence of a LOCA because only the radiological dose consequence analysis of the LOCA and the FHA

involving recently irradiated fuel credit secondary containment and the proposed Note is not to be applied during movement of recently irradiated fuel. No other radiological dose consequence analysis credits secondary containment operability, including the FHA involving fuel that is no longer considered recently irradiated.

The allowance in the proposed Note to consider the SR met is limited to a period of 4 hours or less. The 4 hour limit is based on the expected short duration of the situations when the Note would be applied.

The SR Note provides an exception to meeting SR 3.6.4.1.1, but not to performing the SR. The terms "met" and "performed" are discussed in Section 1.4, "Frequency," of the TS:

> The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria.

The proposed Note provides an exception of meeting the acceptance criteria. The Note does not provide any exception to performing SR 3.6.4.1.1 within the specified Frequency.

As part of the changes to SR 3.6.4.1.1 described and evaluated in this subsection of the LAR, the standby gas treatment system is defined by the acronym SGT. SR 3.6.4.1.5 is revised to use this acronym alone rather than the full text for standby gas treatment. This is purely an administrative change. No further technical evaluation is required for the proposed change to SR 3.6.4.1.5.

3.2 Proposed SR 3.6.4.1.3 Revision

The BWR/6 Standard TS (NUREG-1434) SR 3.6.4.1.3 contains an exception for both doors in an access opening to be open simultaneously for normal entry and exit. In addition, the BWR/4 Standard TS (NUREG-1433) SR 3.6.4.1.3 has been revised under TSTF-551 to add a similar exception for BWR/4 plants (of which Fermi 2 is one). The Fermi 2 TS SR 3.6.4.1.3 is proposed to be revised to add an exception to the SR for normal entry and exit, similar to BWR/6 SR 3.6.4.1.3 and BWR/4 SR 3.6.4.1.3 as modified by TSTF-551. The proposed exception will be restricted from being applied during movement of recently irradiated fuel for consistency with the Fermi 2 analysis for FHA involving recently irradiated fuel. The text in italics, below, is added.

> 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*.

While most secondary containment access points at Fermi 2 have interlocks to prevent opening both an inner and outer door simultaneously during entry and exit, the interlocks may not be

effective depending on the timing of the openings. This allowance for normal entry and exit is reasonable because the doors are under the continuous control of the person(s) accessing the doors, and the doors will be promptly closed following entry and exit, restoring the secondary containment boundary. The phrase "being used for entry and exit" ensures that the time that both doors may be open simultaneously is limited to the time it takes to traverse through a door.

There are many doors in a nuclear power plant that are credited as barriers, such as fire doors, security doors, flooding doors, high energy line break doors, control room doors, and secondary containment doors. Administrative controls are typically applied to these types of doors and the person using the door is responsible for opening and closing the door securely and for not keeping the door open any longer than necessary for entry/exit. Under the proposed change, secondary containment doors will be treated in a manner similar to other barrier doors. For example, Fermi 2 TS 3.7.3 for the control room emergency filtration (CREF) system contains an LCO Note that allows the control room envelope (CRE) boundary to be opened intermittently under administrative control. The corresponding TS 3.7.3 Bases states: "The LCO is modified by a note allowing the CRE boundary to be opened intermittently under administrative controls" and "For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area." Fermi 2 is not proposing to modify existing interlocks and administrative controls that ensure only one secondary containment door is open at a time when secondary containment is required to be operable. However, should both doors be inadvertently opened simultaneously when being used for entry and exit, the proposed exception in the SR would be used to avoid declaring secondary containment inoperable. In this way, TS 3.6.4.1 will be similar to TS 3.7.3 regarding entry and exit.

The information regarding the LOCA radiological dose consequence analysis provided above demonstrates that the brief, inadvertent, simultaneous opening of both an inner and outer personnel access door during normal entry and exit conditions, and their prompt closure by normal means, is bounded by the analysis. In the unlikely event that an accident would occur when both personnel access doors are open for entry or exit, the brief time required to close one of the doors is very small compared to the 17 minutes assumed in the analysis for reducing the post-accident secondary containment pressure to $\geq$ 0.25 inch of vacuum water gauge, and will not result in an increase in any onsite or offsite dose.

For the FHA analysis of recently irradiated fuel, no explicit assumption is made regarding the time required to draw secondary containment pressure down to a specified value. The SR 3.6.4.1.3 acceptance criteria of having one door in each accessing opening closed ensures this analysis assumption is valid. For this reason, the allowance for both doors to be open in SR 3.6.4.1.3 does not apply to the FHA involving recently irradiated fuel. The proposed addition to SR 3.4.6.1.3 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 change is therefore clearly defined.

The FHA analysis of fuel that is not recently irradiated does not credit secondary containment and therefore secondary containment is not required to be operable during movement of fuel that is not considered recently irradiated. In addition, no other accident analyses credit secondary containment and are thus unaffected by the proposed Note.

3.3 Proposed TS Bases Revision

The SR 3.6.4.1.1 Bases are modified to describe the proposed SR Note. The SR 3.6.4.1.1 Bases also clarify that use of the Note is expected to be infrequent and driven by specific situations such as, but not limited to, wind gusts and failure or change of operating normal ventilation subsystems. In addition, the SR 3.6.4.1.1 Bases reiterate that the Note is not applicable during movement of recently irradiated fuel.

The current combined Bases for SR 3.6.4.1.2 and SR 3.6.4.1.3 are separated for clarity and the Bases of SR 3.6.4.1.3 are revised to be consistent with the proposed revised SR. The SR 3.6.4.1.3 Bases also reiterate that one of the inner or outer doors is maintained closed during movement of recently irradiated fuel even during entry and exit.

4.0 REGULATORY ANALYSIS

4.1 Applicable Regulatory Requirements/Criteria

The following regulatory requirements have been considered:

- 10 CFR 50.36, "Technical specifications," establishes regulatory requirements related to the contents of the TS. Specifically, 10 CFR 50.36(c)(2) states, in part, "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility." In addition, 10 CFR 50.36(c)(3) states, "Surveillance requirements 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 limiting conditions of operation will be met."

The proposed changes to the secondary containment SRs do not affect compliance with these regulations.

The applicable 10 CFR Part 50, Appendix A, General Design Criteria, was considered as follows:

- Criterion 16 – Containment Design. Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.

The proposed changes do not alter the design of the secondary containment or its ability to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity.

4.2 Precedent

As described previously, the proposed changes are similar to those previously reviewed and approved by the NRC in TSTF-551. The only significant difference is that the proposed changes are limited to exclude their application during the movement of recently irradiated fuel. This limitation is consistent with the analysis of the FHA involving recently irradiated fuel as described in the Fermi 2 licensing basis.

4.3 No Significant Hazards Consideration

DTE Electric Company (DTE) requests to revise the Fermi Unit 2 Technical Specifications (TS). The proposed change revises TS Surveillance Requirement (SR) 3.6.4.1.1. The SR is revised to permit conditions during which the secondary containment may not meet the SR acceptance criterion for a period of up to 4 hours if an analysis demonstrates that one standby gas treatment (SGT) subsystem remains capable of establishing the required secondary containment vacuum and no movement of recently irradiated fuel is in progress. In addition, SR 3.6.4.1.3 is modified to acknowledge that secondary containment access openings may be open for entry and exit when no movement of recently irradiated fuel is in progress.

DTE has evaluated the proposed change against the criteria of 10 CFR 50.92(c) to determine if the proposed change results in any significant hazards. The following is the evaluation of each of the 10 CFR 50.92(c) criteria:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change addresses conditions during which the secondary containment SRs are not met. The secondary containment is not an initiator of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not increased. The consequences of an accident previously evaluated while utilizing the proposed changes are no different than the consequences of an accident while utilizing the existing four hour Completion Time for an inoperable secondary containment. The proposed Note for SR 3.6.4.1.1 provides an alternative means to ensure the secondary containment safety function is met. In addition, the proposed changes do not apply during the movement of recently irradiated fuel and therefore cannot impact the consequences of the previously evaluated fuel handling accident (FHA). As a result, the consequences of an accident previously evaluated are not significantly increased.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change does not alter the protection system design, create new failure modes, or change any modes of operation. The proposed change does not involve a physical alteration of the plant; and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The proposed change addresses conditions during which the secondary containment SRs are not met. Conditions in which the secondary containment vacuum is less than the required vacuum are acceptable provided the conditions do not affect the ability of the SGT system to establish the required secondary containment vacuum under post-accident conditions within the time assumed in the accident analysis. This condition is incorporated in the proposed change by requiring an analysis of actual environmental and secondary containment pressure conditions to confirm the capability of the SGT System is maintained within the assumptions of the accident analysis. Therefore, the safety function of the secondary containment is not affected. The allowance for both an inner and outer secondary containment door to be open simultaneously for entry and exit does not affect the safety function of the secondary containment as the doors are promptly closed after entry or exit, thereby restoring the secondary containment boundary. For both SRs, the proposed changes do not apply during the movement of recently irradiated fuel and therefore cannot impact the margin of safety associated with the FHA.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, DTE concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) 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.

5.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NUREG-1022, "Event Report Guidelines 10 CFR 50.72 and 50.73," Revision 3, dated January 2013 (ML13032A220).
2. TSTF-551, "Revise Secondary Containment Surveillance Requirements," Revision 3, dated October 3, 2016 (ML16277A226).
3. "Final Safety Evaluation of Technical Specifications Task Force Traveler TSTF-551, Revision 3, Revise Secondary Containment Surveillance Requirements," dated September 21, 2017 (ML17236A365).
4. DTE letter to NRC, NRC-18-0013, "Licensee Event Report (LER) No. 2018-001," dated February 23, 2018 (ML18054A752).
5. DTE letter to NRC, NRC-19-0053, "Licensee Event Report (LER) No. 2019-003," dated July 26, 2019 (ML19210B833).
6. NRC letter to DTE, "Fermi-2 – Amendment No. 87 to Facility Operating Licensing No. NPF-43 (TAC No. M82102)," dated September 9, 1992 (ML020720520).
7. Fermi 2 Updated Final Safety Analysis Report, Revision 22, dated April 2019 (ML19128A089).
8. NRC letter to DTE, "Fermi 2 – Issuance of Amendment Re: Reevaluation of Fuel Handling Accident, Selective Implementation of 10 CFR Part 50.67 (TAC No. MB0956)," dated September 28, 2001 (ML012290521).
9. NRC letter to DTE, "Fermi 2 – Issuance of Amendment Re: Selective Implementation of Alternative Radiological Source Term Methodology (TAC No. MB7794)," dated September 28, 2004 (ML042430179).
10. NRC letter to DTE, "Fermi 2 – Issuance of Amendment Re: Elimination of Main Steam Line Radiation Monitor Trip and Isolation Function (CAC No. MG0228; EPID L-2017-LLA-0274)," dated September 20, 2018 (ML18250A163).
11. NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 4, dated April 2012 (ML12104A195).
12. NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," Revision 4, dated April 2012 (ML12104A192).

Enclosure 2 to
NRC-19-0075

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

License Amendment Request – Proposed Revision to Technical Specifications for Secondary Containment Surveillance Requirements

Proposed Technical Specification Changes (Mark-Up)

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 ≥ 0.125 inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
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. ---------- Verify all secondary containment equipment hatches, pressure relief doors and railroad bay access doors are closed and sealed.	In accordance with the Surveillance Frequency Control Program
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.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify steam tunnel blowout panels are closed.	Prior to entering MODE 2 or 3 from MODE 4 if not performed in the previous 31 days
SR 3.6.4.1.5	Verify each ~~standby gas treatment (~~SGT~~)~~ subsystem will draw down the secondary containment to ≥ 0.25 inch of vacuum water gauge in ≤ 12 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.6	Verify each SGT subsystem can maintain ≥ 0.25 inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate ≤ 3000 cfm.	In accordance with the Surveillance Frequency Control Program

Enclosure 3 to
NRC-19-0075

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

License Amendment Request – Proposed Revision to Technical Specifications for Secondary Containment Surveillance Requirements

Revised Technical Specification Pages

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 ≥ 0.125 inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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. ---------- Verify all secondary containment equipment hatches, pressure relief doors and railroad bay access doors are closed and sealed.	In accordance with the Surveillance Frequency Control Program
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.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify steam tunnel blowout panels are closed.	Prior to entering MODE 2 or 3 from MODE 4 if not performed in the previous 31 days
SR 3.6.4.1.5	Verify each SGT subsystem will draw down the secondary containment to ≥ 0.25 inch of vacuum water gauge in ≤ 12 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.6	Verify each SGT subsystem can maintain ≥ 0.25 inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate ≤ 3000 cfm.	In accordance with the Surveillance Frequency Control Program

Enclosure 4 to
NRC-19-0075

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

License Amendment Request – Proposed Revision to Technical Specifications for Secondary Containment Surveillance Requirements

Proposed Technical Specification Bases Change (Mark-Up) – Information Only

BASES

ACTIONS (continued)

The Required Action has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving recently irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving recently irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of recently irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.1.1

This SR ensures that the secondary containment boundary is sufficiently leak tight to preclude exfiltration under expected wind conditions. The SR is modified by a Note which states the SR is not required to be met for up to 4 hours if an analysis demonstrates that one SGT subsystem remains capable of establishing the required secondary containment vacuum. Use of the Note is expected to be infrequent but may be necessitated by situations in which secondary containment vacuum may be less than the required containment vacuum, such as, but not limited to, wind gusts or failure or change of operating normal ventilation subsystems. These conditions do not indicate any change in the leak tightness of the secondary containment boundary. The analysis should consider the actual conditions (equipment configuration, temperature, atmospheric pressure, wind conditions, measured secondary containment vacuum, etc.) to determine whether, if an accident requiring secondary containment to be OPERABLE were to occur, one train of SGT could establish the assumed secondary containment vacuum within the time assumed in the accident analysis. If so, the SR may be considered met for a period up to 4 hours. The 4 hour limit is based on the expected short duration of the situations when the Note would be applied. The Note is not applicable during movement of recently irradiated fuel. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.1.2 ~~and SR 3.6.4.1.3~~

Verifying that secondary containment equipment hatches, pressure relief doors, and railroad bay access doors~~, and one access door in each access opening~~ are closed ensures that the infiltration of outside air of such a magnitude as to prevent maintaining the desired negative pressure does not occur and~~. Verifying that all such openings are closed~~ provides adequate assurance that exfiltration from the secondary containment will not occur. In this application, the term "sealed" has no connotation of leak tightness. ~~Maintaining secondary containment OPERABILITY requires verifying one door in each access opening is closed. An access opening contains one inner and one outer door. In some cases, secondary containment access openings are shared such that a secondary containment barrier may have multiple inner or multiple outer doors. The intent is not to breach the secondary containment at any time when secondary containment is required. This is achieved by maintaining the inner or outer portion of the barrier closed at all times. However, all secondary containment access doors are normally kept closed, except when the access opening is being used for entry and exit or when maintenance is being performed on an access opening.~~ The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

A Note is added to SR 3.6.4.1.2 to allow a secondary containment railroad bay access door to be open for up to 4 hours for entry, exit or testing, and up to 12 hours for new fuel receipt activities. These activities do not indicate a problem with a railroad bay access door and the door should not be considered inoperable. Also, with one railroad bay door remaining closed, secondary containment OPERABILITY is maintained. The times allowed are reasonable for the activities being performed considering the availability of the redundant door.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.1.3

Verifying that one secondary containment access door in each access opening is closed provides adequate assurance that exfiltration from the secondary containment will not occur. An access opening contains at least one inner and one outer door. In some cases, secondary containment access openings are shared such that there are multiple inner or outer doors. The intent is to not breach the secondary containment, which is achieved by maintaining the inner or outer portion of the barrier closed except when the access opening is being used for entry and exit. During movement of recently irradiated fuel, the inner or outer portion of the barrier is maintained closed even when the access opening is being used for entry and exit. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.6.4.1.4

If the steam tunnel blowout panels are open the integrity of the Secondary Containment is lost. Since the steam tunnel blowout panels are inaccessible during plant operation, this SR is only required to be performed during MODE 4, but only if it has been greater than 31 days since the last verification. This frequency has been shown to be adequate based on operating experience, and in view of other indications of the status of the steam tunnel blowout panels available to the operator.

SR 3.6.4.1.5 and SR 3.6.4.1.6

The SGT System exhausts the secondary containment atmosphere to the environment through appropriate treatment equipment. To ensure that all fission products are treated, SR 3.6.4.1.5 verifies that the SGT System will rapidly establish and maintain a pressure in the secondary containment that is less than the lowest postulated pressure external to the secondary containment boundary. This is confirmed by demonstrating that one SGT subsystem will draw down the secondary containment to $\geq$ 0.25 inches of vacuum water gauge in $\leq$ 12 minutes. This cannot be accomplished if the secondary containment boundary is not intact.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.1.6 demonstrates that one SGT subsystem can maintain ≥ 0.25 inches of vacuum water gauge for 1 hour at a flow rate ≤ 3000 cfm. The 1 hour test period allows secondary containment to be in thermal equilibrium at steady state conditions. Therefore, these two tests are used to ensure secondary containment boundary integrity. Since these SRs are secondary containment tests, they need not be performed with each SGT subsystem. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. UFSAR, Section 15.6.5.

2. UFSAR, Section 15.7.4.

3. NEDC-32988-A, Revision 2, Technical Justification to Support Risk- Informed Modification to Selected Required End States for BWR Plants, December 2002.