



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

April 20, 2016

Mr. Paul Fessler
Senior Vice President and
Chief Nuclear Officer
DTE Electric Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

**SUBJECT: FERM1 2 - ISSUANCE OF AMENDMENT RE: TECHNICAL SPECIFICATIONS
TO ADOPT TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) - 523,
"GENERIC LETTER 2008-01, MANAGING GAS ACCUMULATION" (CAC NO.
MF6756)**

Dear Mr. Fessler:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 204 to Facility Operating License No. NPF-43 for the Fermi 2 facility. The amendment consists of changes to the technical specifications (TSs) in response to your application dated September 24, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15268A149).

The amendment revises TS to address Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," (ADAMS Accession No. ML072910759) as described in TSTF-523, Revision 2, "Generic Letter 2008-01, Managing Gas Accumulation" (ADAMS Accession No. ML13053A075).

P. Fessler

- 2 -

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in cursive script, reading "Sujata Goetz".

Sujata Goetz, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures:

1. Amendment No. 204 to
License No. NPF-43
2. Safety Evaluation

cc w/encls: Distribution via Listserv



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

DTE ELECTRIC COMPANY

DOCKET NO. 50-341

FERMI 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 204
License No. NPF-43

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the DTE Electric Company (DTE, the licensee) dated September 24, 2015, 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 Facility Operating License No. NPF-43 is hereby amended to read as follows:

Enclosure 1

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 204, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this 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 its date of issuance and shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



David J. Wrona, Chief
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Date of Issuance: April 20, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 204

FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

Replace the following page of Facility Operating License NPF-43 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE

INSERT

Page 3

Page 3

Replace the following pages of 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

INSERT

3.4-20
3.4-22
3.5-4
3.5-5
3.5-10
3.5-11
3.5-13
3.6-34
3.6-36
3.9-11
3.9-14

3.4-20
3.4-22
3.5-4
3.5-5
3.5-10
3.5-11
3.5-13
3.6-34
3.6-36
3.9-11
3.9-14

- (4) DTE Electric Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material such as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) DTE Electric Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (6) DTE Electric Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

DTE Electric Company is authorized to operate the facility at reactor core power levels not in excess of 3486 megawatts thermal (100% power) in accordance with conditions specified herein and in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 204, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this 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

RHR Shutdown Cooling System-Hot Shutdown
3.4.8

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	<p>-----NOTE----- Not required to be met until 4 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. -----</p> <p>Verify one RHR shutdown cooling subsystem or recirculation pump is operating.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. -----</p> <p>Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.</p>	In accordance with the Surveillance Frequency Control Program

RHR Shutdown Cooling System—Cold Shutdown
3.4.9

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation.	B.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.	Immediately
	<u>AND</u>	
	B.2 Verify reactor coolant circulating by an alternate method.	1 hour from discovery of no reactor coolant circulation
	<u>AND</u>	
	B.3 Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.9.1 Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2 Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.1.1 Verify correct voltage and breaker alignment to the LPCI swing bus.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2 -----NOTE----- When LPCI is placed in an inoperable status solely for performance of this SR, or when the LPCI swing bus automatic throwover scheme is inoperable due to EDG-12 being paralleled to the bus for required testing, entry into associated Conditions and Required Actions may be delayed up to 12 hours for completion of the required testing. ----- Perform a functional test of the LPCI swing bus automatic throwover scheme.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3 Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.1.4 -----NOTE----- Not required to be met for system vent flow paths opened under administrative control. -----</p> <p>Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.5 Verify primary containment pneumatic supply pressure is ≥ 75 psig.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.6 Verify the RHR System power operated cross tie valve is open.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.7 Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.2	<p>Verify, for each required core spray (CS) subsystem, the:</p> <p>a. Suppression pool water level is \geq -66 inches; or</p> <p>b. -----NOTE----- Only one required CS subsystem may take credit for this option during OPDRVs. -----</p> <p>Condensate storage tank water level is \geq 19 ft.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	Verify correct voltage and breaker alignment to the LPCI swing bus.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.4	Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE				FREQUENCY												
SR 3.5.2.5	-----NOTES----- 1. LPCI subsystem(s) may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. ----- Verify each required ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.			In accordance with the Surveillance Frequency Control Program												
SR 3.5.2.6	Verify each required ECCS pump develops the specified flow rate against a system head corresponding to the specified reactor pressure. <table><thead><tr><th>SYSTEM</th><th>FLOW RATE</th><th>NO. OF PUMPS</th><th>SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF</th></tr></thead><tbody><tr><td>CS</td><td>≥ 5725 gpm</td><td>2</td><td>≥ 100 psig</td></tr><tr><td>LPCI</td><td>≥ 10,000 gpm</td><td>1</td><td>≥ 20 psig</td></tr></tbody></table>			SYSTEM	FLOW RATE	NO. OF PUMPS	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF	CS	≥ 5725 gpm	2	≥ 100 psig	LPCI	≥ 10,000 gpm	1	≥ 20 psig	In accordance with the Inservice Testing Program
SYSTEM	FLOW RATE	NO. OF PUMPS	SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF													
CS	≥ 5725 gpm	2	≥ 100 psig													
LPCI	≥ 10,000 gpm	1	≥ 20 psig													
SR 3.5.2.7	-----NOTE----- Vessel injection/spray may be excluded. ----- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.			In accordance with the Surveillance Frequency Control Program												

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.2	<p>-----NOTE----- Not required to be met for system vent flow paths opened under administrative control. -----</p> <p>Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.3	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify, with reactor pressure ≤ 1045 psig and ≥ 945 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.4	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify, with reactor pressure ≤ 200 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.3.2	Verify each required RHR pump develops a flow rate $\geq 9,250$ gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the Inservice Testing Program
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.4.1	Verify each RHR suppression pool spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.2	Verify each RHR pump develops a flow rate ≥ 500 gpm through the heat exchanger and suppression pool spray sparger while operating in the suppression pool spray mode.	In accordance with the Inservice Testing Program
SR 3.6.2.4.3	Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Suspend loading irradiated fuel assemblies into the RPV.	Immediately
	<u>AND</u>	
	B.2 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>	
	B.3 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>	
	B.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.7.1 Verify the RHR shutdown cooling subsystem is capable of decay heat removal.	In accordance with the Surveillance Frequency Control Program
SR 3.9.7.2 Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.8.1	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.9.8.2	Verify each RHR shutdown cooling subsystem is capable of decay heat removal.	In accordance with the Surveillance Frequency Control Program
SR 3.9.8.3	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. NPF-43

DTE ELECTRIC COMPANY

FERMI 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated September 24, 2015, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15268A149), DTE Electric Company (the licensee) requested changes to the technical specifications (TSs) for Fermi 2. Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications (STS) Change Traveler TSTF-523, Revision 2, "Generic Letter (GL) 2008-01, Managing Gas Accumulation" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13053A075), dated February 21, 2013. The availability of this TS improvement was announced in the Federal Register on January 15, 2014 (79 FR 2700), as part of the consolidated line item improvement process (CLIP).

The proposed change would revise surveillance requirements (SRs) related to gas accumulation for the emergency core cooling system (ECCS) and Reactor Core Isolation Cooling (RCIC) system. The proposed change would also add new SRs related to gas accumulation for the residual heat removal (RHR), suppression pool spray and shutdown cooling systems. TS Bases changes associated with these SRs would also be made.

The licensee stated that it has reviewed the information contained in the model safety evaluation dated December 23, 2013 (ADAMS Accession No. ML13255A169), and that the license amendment request (LAR) is consistent with NRC-approved TSTF-523.

The U.S. Nuclear Regulatory Commission (NRC or the Commission) staff's original proposed significant hazards consideration determination was published in the *Federal Register* on January 5, 2016 (81 FR 260).

2.0 REGULATORY EVALUATION

2.1 Background

Gas accumulation in reactor systems can result in water hammer, pump cavitation, and pumping of non-condensable gas into the reactor vessel. These effects may result in the subject system being unable to perform its specified safety function. The NRC issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," in January 2008 to address the issue of gas accumulation in ECCS, DHR, and CS systems (ADAMS Accession No. ML072910759). The industry and NRC staff agreed that a change to the STS and plant-specific TS would be necessary to address some issues discussed in GL 2008-01. TSTF-523 contains changes to the TS SRs and TS Bases to address some of the concerns in GL 2008-01. The licensee proposed amending the Fermi 2 TS using a plant-specific adoption of the TSTF-523 changes.

2.2 Technical Specification Changes

Changes were proposed for SRs 3.5.1.3, 3.5.1.4, 3.5.2.4, 3.5.2.5, 3.5.3.1, and 3.5.3.2, as well as the addition of new SRs 3.4.8.2, 3.4.9.2, 3.6.2.3.3, 3.6.2.4.3, 3.9.7.2, and 3.9.9.3 to TS 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown," TS 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown," TS 3.5.1, "ECCS – Operating," TS 3.5.2, "ECCS – Shutdown," TS 3.5.3, "RCIC System," TS 3.6.2.3, "Residual Heat Removal (RHR) Suppression Pool Cooling," TS 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray," TS 3.9.7, "Residual Heat Removal (RHR) - High Water Level," and TS 3.9.8, "Residual Heat Removal (RHR) – Low Water Level," respectively.

2.3 Regulatory Review

The regulations in Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "General Design Criteria for Nuclear Power Plants" provide design requirements. Appendix B to 10 CFR Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," the TSs, and the licensee quality assurance program provide operating requirements. The regulatory requirements of 10 CFR Part 50, Appendix A, that are applicable to gas management in the subject systems include: General Design Criteria (GDC) 1, 34, 35, 36, 37, 38, 39 and 40. GDC 1 requires that the subject systems be designed, fabricated, erected, and tested to quality standards. GDC 34 requires an RHR system designed to maintain specified acceptable fuel design limits and to meet design conditions that are not exceeded if a single failure occurs and specified electrical power systems fail. GDCs 35, 36, and 37 require an ECCS design that meets performance, inspection, and testing requirements. Additionally, the regulations in 10 CFR 50.46 provide specified ECCS performance criteria. GDCs 38, 39, and 40 require a Containment Heat Removal System (CHRS) design that meets performance, inspection, and testing requirements.

Quality assurance criteria provided in 10 CFR Part 50, Appendix B, that apply to gas management in the subject systems include: Criteria III, V, XI, XVI, and XVII. Criteria III

and V require measures to ensure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, "Definitions," and as specified in the license application, are correctly translated into controlled specifications, drawings, procedures, and instructions. Criterion XI requires a test program to ensure that the subject systems will perform satisfactorily in service and requires that test results shall be documented and evaluated to ensure that test requirements have been satisfied. Criterion XVI requires measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected, and that significant conditions adverse to quality are documented and reported to management. Criterion XVII requires maintenance of records of activities affecting quality.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36(c). The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) limiting conditions for operation (LCO); (3) SRs; (4) design features; and (5) administrative controls. SRs 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. Typically, TS Section 5 requires that licensees establish, implement, and maintain written procedures covering the applicable procedures recommended in Appendix A to Regulatory Guide (RG) 1.33, Rev. 2, "Quality Assurance Program Requirements (Operation)." Appendix A to RG 1.33, Rev. 2 identifies instructions for filling and venting the ECCS and DHR system, as well as for draining and refilling heat exchangers. Standard TSs and most licensee TSs include SRs to verify that at least some of the subject systems piping is filled with water.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1433, "Standard Technical Specifications General Electric Plants BWR/4."

The NRC staff recognizes that the Standard Review Plan (SRP) is not the regulatory basis of the proposed TSs changes, and licensees are not required to confirm that the SRP guidance is applicable to Fermi 2.

Regulatory guidance for the NRC staff's review of containment heat removal systems, ECCS, and RHR systems is provided in the following revisions and sections of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (SRP) during the review.

- Revision 5 of the SRP, Section 6.2.2, "Containment Heat Removal Systems," dated March 2007 (ADAMS Accession No. ML070160661), provides the procedures concerning the review of containment heat removal under post-accident conditions to help ensure compliance with GDC 38, 39, and 40.
- Revision 3 of the SRP, Section 6.3, "Emergency Core Cooling System," dated March 2007 (ADAMS Accession No. ML070550068), provides the procedures concerning the review of ECCS to help ensure compliance with GDC 35, 36, and 37.

- Revision 5 of the SRP, Section 5.4.7, "Residual Heat Removal (RHR) System," dated May 2010 (ADAMS Accession Number ML100680577), provides the procedures concerning the review of RHR system as it is used to cool the reactor coolant system (RCS) during and following shutdown to help ensure compliance with GDC 34.

3.0 TECHNICAL EVALUATION

The proposed change adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1433, "Standard Technical Specifications General Electric Plants BWR/4" by TSTF-523.

The NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36(c). The licensee proposed the following TS changes:

- (1) Add SR 3.4.8.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water" together with a note that states "Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure" and a frequency of "In accordance with the Surveillance Frequency Control Program."
- (2) Add SR 3.4.9.2, which states, "Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water" with a frequency of "In accordance with the Surveillance Frequency Control Program."
- (3) Revise the language for SR 3.5.1.3 from "Verify, for each ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve" to "Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (4) Add a note to SR 3.5.1.4, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (5) Revise the language for SR 3.5.2.4 from "Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve" to "Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water."
- (6) Add a note to SR 3.5.2.5, which states, "Not required to be met for system vent flow paths opened under administrative control."
- (7) Revise the language for SR 3.5.3.1 from "Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve" to "Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled

with water.”

(8) Add a note to SR 3.5.3.2, which states, “Not required to be met for system vent flow paths opened under administrative control.”

(9) Add SR 3.6.2.3.3, which states, “Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water” with a frequency of “In accordance with the Surveillance Frequency Control Program.”

(10) Add SR 3.6.2.4.3, which states, “Verify RHR suppression pool spray subsystem locations susceptible to gas accumulation are sufficiently filled with water” with a frequency of “In accordance with the Surveillance Frequency Control Program.”

(11) Add SR 3.9.7.2, which states, “Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water” with a frequency of “In accordance with the Surveillance Frequency Control Program.”

(12) Add SR 3.9.8.3, which states, “Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water” with a frequency of “In accordance with the Surveillance Frequency Control Program.”

The new language for the SRs was developed using licensee responses to GL 2008-01 and the NRC discussion contained in Task Interface Agreement (TIA) 2008-03, “Emergency Core Cooling System (ECCS) Voiding Relative To Compliance With Surveillance Requirements (SR) 3.5.1.1, 3.5.2.3, and 3.5.3.1” (ADAMS Accession No. ML082560209). Many of the GL 2008-01 responses stated that licensees identified system locations susceptible to gas accumulation. In the TIA, the NRC stated that the intent of the TS SRs, which state “full of water,” may be met if the licensee can establish, through an Operability Determination, that there is a reasonable expectation that the system in question will perform its specified safety function. Therefore the phrase, “sufficiently filled with water” was recommended for the proposed TS changes. In the TS, “sufficiently filled with water” is understood to mean “sufficiently filled with water to support Operability.” The regulation at 10 CFR 50.36(c)(3) states that one of the purposes of the SR is to verify that the LCO is met. Therefore, the new SR language, “Verify the [system name] locations susceptible to gas accumulation are sufficiently filled with water,” is acceptable since this language will allow the licensee to make a conclusion as to whether or not a system is operable.

The language for the notes that state that the SR does not have to be performed until 12 hours after entering Mode 3 with reactor steam dome pressure less than the RHR cut in permissive pressure is acceptable because the note provides a limited time to perform the Surveillance after entering the Applicability of the LCO; however, under the STS usage rules (STS Section 1.4), the requirement to manage gas accumulation is not affected. Licensees must have confidence that the SR can be met or the LCO must be declared not met.

The language for the notes that allow the SRs to not be met for system vent flow paths opened under administrative control is necessary to allow the licensee to credit administratively controlled manual action to close the system vent flow path in order to maintain system Operability during system venting and performance of the proposed gas accumulation SR. Therefore, these notes are acceptable.

The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of systems and components will be maintained and that the LCO will be met. Therefore, the NRC staff finds the proposed amendment acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. 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 (81 FR 260), January 5, 2016. 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.

Principal Contributor: Matthew E. Hamm, NRR/DSS/STSB

Date: April 20, 2016

P. Fessler

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A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Sujata Goetz, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures:

1. Amendment No. 204 to
License No. NFP-43
2. Safety Evaluation

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