

NRR-DMPSPeM Resource

From: Goetz, Sujata
Sent: Monday, January 29, 2018 3:05 PM
To: Jason R Haas
Subject: Fermi 2 LAR to Revise TS to Eliminate MSLRM Reactor Trip and PCIS Group 1 Isolation Functions (SRXB)
Attachments: SRXB RAI SG jan29 clean.docx

Dear Mr. Hass:

By letter dated August 24, 2017, as supplemented by letter dated October 18, 2017 (Agencywide Documents Access and Management System Accession Number ML17237A176 and ML17298A185), DTE Electric Company (DTE), the licensee, submitted a license amendment request to revise the Fermi 2 technical specifications (TS). Specifically, DTE requested to:

- Adopt the alternative source term assumptions and methodology into the control rod drop accident radiological consequence analysis,
- Eliminate the main steam line radiation monitor (MSLRM) functions for initiating a reactor protection system automatic reactor trip,
- Eliminate the MSLRM functions for initiating the associated (Group 1) primary containment isolation system isolation, which includes automatic closure of the main steam isolation valves and main steam line drain valves,
- Add two new TS limiting conditions for operation 3.3.7.2 and 3.3.7.3 for the mechanical vacuum pump and gland seal exhauster trip instrumentation.

The Nuclear Regulatory Commission (NRC) staff is reviewing the submittal and has determined that additional information is needed to complete its review. Attached, please find the request for additional information (RAI).

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. Please contact me at (301) 415-8004 if you would like to schedule a clarification call. The response to this RAI is due to the NRC by March 2, 2018.

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REQUEST FOR ADDITIONAL INFORMATION
APPLICATION TO REVISE TECHNICAL SPECIFICATION TO ELIMINATE MAIN STEAM LINE
RADIATION MONITOR REACTOR TRIP AND PRIMARY CONTAINMENT ISOLATION
SYSTEM GROUP 1 ISOLATION FUNCTIONS
DTE ELECTRIC COMPANY
FERMI 2

By application dated August 24, 2017, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17237A176), DTE Energy Company (DTE or licensee) requested to revise Fermi 2 technical specifications (TS) to eliminate the main steam line radiation monitor (MSLRM) reactor trip and Primary Containment Isolation System (PCIS) Group 1 Isolation Functions. The NRC staff has reviewed the information provided by the licensee in support of the proposed license amendment and the staff requests additional information.

SRXB-RAI-1

The August 24, 2017, application requests elimination of MSLRM functions for initiating: 1) a reactor protection system (RPS) automatic reactor trip and 2) the associated (Group 1) primary containment isolation system (PCIS) automatic closure of the main steam isolation valves (MSIVs) and main steam line (MSL) drain valves. The licensee's justifications for eliminating the MSLRM trip and isolation functions are based on the approach documented in the Boiling Water Reactor Owners Group (BWROG) General Electric (GE) Licensing Topical Report NEDO-31400A.

- a. In addition to the control rod drop accident (CRDA) analysis, are there other MSLRM trip function credited for other accident or transient analyses at Fermi 2? If so, discuss the events, including any plan to eliminate the trip function and resulting impacts on the outcome for those events.
- b. The proposed TS changes requirements for the MSLRM trip function from the Fermi TS Table 3.3.1.1-1, "Reactor Protection System Instrumentation." The proposed changes also remove requirements for PCIS Group 1 isolation from TS Table 3.3.6.1-1, "Primary Containment Isolation Instrumentation." However, the MSLRM isolation function in TS Table 3.3.6.1-1 is relocated and retained for the current existing PCIS Group 2 isolation of the reactor water sample line. NRC staff concludes that this change will defeat portions of MSLRM high radiation trip function logic circuitry in the reactor protection RPS and PCIS. Will there be any impact on the operation of the RPS or PCIS with respect to other intended safety functions? If so, discuss.

SRXB-RAI-2

Operating data presented in GE topical report NEDO-31400A indicates that the MSLRMs have initiated eight reactor shutdowns from 1980 through October 1992, but none of the shutdowns were the result of fuel degradation. The shutdowns were the result of instrument failures, chemistry excursions, radiation monitor maintenance errors, and other causes.

For Fermi 2 specifically, state how many plant shutdowns have been caused by the MSLRM trip function. For each shutdown discuss the cause for those MSLRM trip function initiations, including whether any of the shutdowns were the result of actual fuel degradation, and whether the shutdown was unnecessary.

SRXB-RAI-3

The August 24, 2017, application on page 7 of Enclosure 1 states that “Above 10% rated thermal power, control rod reactivity worth is reduced such that the effects of postulated rod drop are not sufficient to cause significant fuel damage.” In order for the NRC staff to evaluate the impact of the proposed license amendment on the CRDA analytical results, provide the following information, as it relates to the current CRDA analysis of record, and how the proposed changes would impact the degree of fuel damage:

- c. Other than to eliminate the MSLRM trip and the related isolation functions proposed for the CRDA in the licensee's application, will there be any other changes of parameters and assumptions that are made for a CRDA analysis at Fermi 2? If so, discuss the changes and its impact on the CRDA analysis results.
- d. In the Fermi 2 CRDA analysis which trip function of the RPS is credited to scram the reactor, and does this change as a result of eliminating the MSLRM high radiation trip function? If so, discuss the impact of the change.
- e. Other than radiological consequences, discuss whether there is any impact from eliminating the MSLRM high radiation trip function on the degree of fuel damage during a CRDA or any other adverse impact on the core or the plant.
- f. Has the number of fuel rods predicted to fail and melt changed for a CRDA as a result of eliminating the MSLRM high radiation trip function? If so, discuss.