July 8, 2009

Mr. Peter W. Smith
Director, Nuclear Development-Licensing
337 WCB DTE Energy One Energy Plaza
Detroit, MI 48226-1279

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 6 RELATED TO THE SRP SECTIONS 08.2 FOR THE FERMI 3 COMBINED LICENSE APPLICATION, REVISION 1

Dear Mr. Smith:

This letter is being revised to change the response time.

By letter dated September 18, 2008, Detroit Edison Company (Detroit Edison) submitted for approval a combined license application pursuant to 10 CFR Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter. Since the original letter was dated June 8, 2009, but not received by DTE until June 15, 2009, the start of the response period will be June 15, 2009. In addition, DTE has requested the response period be extended from 30 to 45 days for this RAI. Therefore the response for this RAI is due August 31, 2009.. If changes are needed to the safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, I can be reached at 301-415-8148 or by e-mail at jerry.hale@nrc.gov.

Sincerely,

/RA/

Jerry Hale, Project Manager
ESBWR/ABWR Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.052-033

eRAI Tracking Nos. 2168

Enclosure:
Request For Additional Information

July 8, 2009

Mr. Peter W. Smith
Director, Nuclear Development-Licensing
337 WCB DTE Energy One Energy Plaza
Detroit, MI 48226-1279

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Docket Nos.052-033
eRAI Tracking Nos. 2168
Enclosure:
Request For Additional Information

OFFICE	EEB	EEB/BC	NGE1/PM	OGC	NGE1/LPM
NAME	APal	RJenkins	J. Hale	M. Carpentier	MTonacci
DATE	02/18/09	03/11/09	4/27/09	5/13/09	6/8/09

OFFICIAL RECORD COPY

***Approval captured electronically in the electronic RAI system.**

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 6 RELATED TO THE SRP SECTIONS 08.2 FOR THE FERMI 3 COMBINED LICENSE APPLICATION, REVISION 1 DATED JULY 8, 2009

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Request for Additional Information No. 2168 Revision 0
Fermi Unit 3
Detroit Edison Docket No. 52-033
SRP Section: 08.02 -Offsite Power System Application Section: 8.2

QUESTIONS for Electrical Engineering Branch (EEB)

08.02-1

FSAR Section 8.2.2.3.1 states: "There are no single failures that can prevent the Fermi offsite power system from performing its function to provide power to EF3." Failure mode and effect analysis of the towers indicates that structural failure of one tower could affect power distribution of the neighboring tower. The staff notes that all three transmission lines are routed in a common corridor for 29.4 miles. Provide justification that a failure of one tower could not propagate and cause the failure of the third tower lines in the same offsite power transmission corridor. Justification should include the separation distances between the three transmission towers along with the height of each tower, and associated drawings.

08.02-2

DCD Section 8.2.3 states: "The normal preferred and alternate preferred circuits are fed from separate transmission systems, each capable of supplying the shutdown loads". FSAR Section 8.2.2.3.3 implies compliance with the DCD but makes no mention how the DCD requirement for "separate transmission systems" is met, especially since both the normal preferred and alternate preferred circuits at EF3 have the same termination points (the Switchyard at one end and the Milan Substation at the other), and are in the same transmission corridor for 29.4 miles. Explain how this can be construed as being fed from "separate transmission systems" since there is no diversity of transmission systems between the normal preferred and alternate preferred circuits from termination point to termination point.

08.02-3

Section 8.2.2.1 discusses reliability of the transmission lines. RG 1.206 states that FSAR should discuss grid availability, including the frequency, duration, and causes of outages over the past 20 years for both the transmission system accepting the unit's output and the transmission system providing the preferred power for the unit's loads. Provide 345 kV transmission line and substation historical outage and failure data for the ITC Transmission network over the past 20 years.

08.02-4

Section 8.2.1.1 discusses the common transmission corridor for the three outgoing Fermi transmission lines. In view of the common corridor for the transmission lines, discuss why the phenomenon of galloping conductors will not be accentuated in the corridor resulting in flashovers and structural damage to multiple transmission line conductors and hardware.

08.02-5

Identify how the lightning protection mentioned in Section 8.2.2.1 and DCD Section 8.2.3 will be implemented for the transmission system and switchyard. Also indicate how the lightning protection system will be periodically maintained and tested to assure functionality and effectiveness throughout the life of EF3.

08.02-6

Section 8.2.1.2.3 states that routine tests will be conducted on the batteries and battery chargers. Describe the periodic surveillance and maintenance tests that will be performed on the batteries and battery chargers located in the 345 kV Switchyard, and the criteria established for battery replacement. Also, describe the periodic surveillance and maintenance tests with frequency that will be performed on the circuit breakers, potential transformers, lightning arrestors, capacitive coupling voltage transformers, current transformers, microwave channels, communication equipment, annunciator panels, security equipment, switchyard grounding system, surge arrestors, and other equipment in the 345 kV switchyard.

08.02-7

Section 8.2.2.1 discusses the reliability of the switchyard. Information relating to the potential for cable submergence in the switchyard has not been addressed. Describe how low voltage power, control, and instrumentation cables that are expected to be partially or continuously submerged in manholes, trenches, and duct banks are qualified. Also, provide the design features and/or in-situ monitoring programs that will be implemented to avoid or arrest the degradation of cable insulation from the effects of moisture. Include cables traversing the switchyard, as well as those from the switchyard to the EF3 unit.

08.02-8

FSAR Section 8.2.2.1, Reliability and Stability Analysis, EF3 COL 8.2.4-10A, did not identify maximum and minimum switchyard voltage limits of 345 kV transmission system. Provide maximum and minimum switchyard voltage limits. Explain how these limits were established, and confirm that these voltage limits are acceptable for auxiliary power system equipment operation including safety-related battery chargers and safety-related uninterruptible power supplies during different operating conditions. The confirmation should include assumptions, acceptance criteria and summaries of results related to the following: load flow analysis (bus and load terminal voltages of the station auxiliary system), short circuit analysis, equipment sizing studies, protective relay setting and coordination, and motor starting with minimum and maximum grid voltage conditions. A separate set of calculations should be performed for each available connection to offsite power supply. In addition, please discuss how the results of the calculations will be verified.

08.02-9

FSAR Section 8.2.1.2.3 discusses switchyard components testing and inspection. Discuss the industry (FERC, NERC, and IEEE) standards that will be followed for switchyard protection system, monitoring, maintenance and testing.

08.02-10

FSAR Section 8.2.2.1 states "Upon approaching or exceeding a limit, these procedures verify availability of required and contingency equipment and materials, direct notifications to outside agencies and address unit technical specifications (TS) actions until the normal voltage schedule can be maintained." Since the FSAR does not identify TS for the offsite power system, please clarify the reference to TS in this Section 8.2.2.1 statement.

08.02-11

FSAR Chapter 1, Table 1.9-201, "Conformance with Standard Review Plan" for SRP Section 8.2 indicates that EF3 complies with the requirements of 10 CFR 50.65(a)(4) (SRP 8.2: Acceptance Criteria II.8). However, review of Chapter 8 identified no discussion regarding 10 CFR 50.65. Please clarify compliance with the requirements of 10 CFR 50.65(a)(4). In particular, the subject regulation is one aspect of the "Maintenance Rule" (10 CFR 50.65), an operational program, the implementation of which is addressed by Item 17 in FSAR Table 13.4-201 and the content of which is discussed in FSAR Section 17.6. The staff requests that the applicant address applicability of the Maintenance Rule to switchyard components, discuss actions to be taken to limit the risk associated with transmission system degradation and discuss actions required before performing grid-risk-sensitive maintenance activities of switchyard components (see NRC Generic Letter 2006-02: Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power referenced in SRP section 8.2).

08.02-12

The resolution for the DCD item 8.2.4-5-A, “Protective Relaying,” is incorporated in the COL FSAR Section 8.2.2.1, which does not discuss this subject. The correct location for this response is FSAR, Section 8.2.1.2.2. Please modify accordingly.

08.02-13

The resolution for the DCD item 8.2.4-8-A, “Switchyard Transformer Protection,” is incorporated in the COL FSAR Section 8.2.1.2.1, which does not discuss this subject. The correct location for this response is FSAR, Section 8.2.1.2.2. Please modify accordingly.