

PMFermiCOLPEm Resource

From: Govan, Tekia
Sent: Wednesday, May 22, 2013 8:53 AM
To: 'Ryan C Pratt'
Cc: FermiCOL Resource
Subject: FW: Draft RAI
Attachments: RAI_7127.doc

I originally sent to the wrong Ryan.

Tekia

From: Govan, Tekia
Sent: Tuesday, May 21, 2013 4:35 PM
To: 'Michael K Brandon'; Whited, Ryan
Cc: FermiCOL Resource
Subject: Draft RAI

Mike/Ryan:

Please find attached the Draft RAIs in response to your RAI submittal regarding the CEUS SSC model and section 2.5.2 of the FSAR. Please let me know by Friday (5/24) if a clarification call is needed.

Thanks
Tekia

Hearing Identifier: Fermi_COL_Public
Email Number: 1199

Mail Envelope Properties (F5A4366DF596BF458646C9D433EA37D7F66E3F49A0)

Subject: FW: Draft RAI
Sent Date: 5/22/2013 8:52:41 AM
Received Date: 5/22/2013 8:52:42 AM
From: Govan, Tekia

Created By: Tekia.Govan@nrc.gov

Recipients:
"FermiCOL Resource" <FermiCOL.Resource@nrc.gov>
Tracking Status: None
"Ryan C Pratt" <pratrc@dteenergy.com>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

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MESSAGE	457	5/22/2013 8:52:42 AM
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Options
Priority: Standard
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Request for Additional Information

Issue Date:

Application Title: Fermi Unit 3 - Docket Number 52-033

Operating Company: Detroit Edison

Review Section: 02.05.02 - Vibratory Ground Motion

QUESTIONS

10 CFR 100.23 (c) states that information to support estimates of the Safe Shutdown Earthquake Ground Motion, including data on vibratory ground motion, must be obtained by reviewing pertinent literature. In RAI 2.5.2-4, the staff requested that the applicant provide a discussion of the effects of including two more recent ground motion models (i.e. Atkinson and Boore, 2006, and Tavakoli and Pezeshk, 2005) on the low- and high- frequency seismic hazard at the Fermi 3 site. Please provide an updated RAI response using the new CEUS SSC hazard results (provided in response to RAI 01.05-1, which address the Fukushima Near-Term Task Force recommendations).

10 CFR Part 100, Appendix A requires the determination of the static and dynamic engineering properties of the materials underlying the site, which should include properties needed to determine the behavior of the underlying material during earthquakes and the characteristics of the underlying material in transmitting earthquake-induced motions to the foundations of the plant. In FSAR Section 2.5.2.5.1.2, the applicant stated that the upper 396 ft of dolomites at the Fermi 3 site has an average shear-wave velocity of 5700 fps and that it used Equation 5 from EPRI (2005) to calculate the total site kappa. Please justify the selection of Equation 5 to calculate the total site kappa since, according to Appendix B (Section B-5.1.3) of EPRI (2013), this equation is applicable to rock sites with at least 3000 ft of firm sedimentary rock (i.e. $V_{s30} > 500$ m/s [1640 fps]) overlying hard rock. EPRI (2013) further states that for cases where the thickness of firm rock is less than about 3000 ft (1000 m), which describes the Fermi 3 site, the kappa contributed by the firm rock profile can be computed assuming a Q of 40 plus the contribution of the reference rock profile of 0.006 sec.

References:

- Electric Power Research Institute, "Assessment of a Performance-Based Approach for Determining the SSE Ground Motion for New Plant Sites," Vol. 2, Seismic Hazard Results at 28 Site, Final Report 1012045, May 2005
- Electric Power Research Institute, "Screening, Prioritization, and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," EPRI Report 1025287, February 2013