PMFermiCOLPEm Resource

From: Govan, Tekia
Sent: Monday, March 18, 2013 12:55 PM
To: FermiCOL Resource
Subject: FW: Courtesy Copy of NRC3-13-0011
Attachments: NRC3-13-0011_Part2.pdf

From: Ryan C Pratt [mailto:prattrc@dteenergy.com]
Sent: Monday, March 18, 2013 11:40 AM
To: Govan, Tekia
Cc: Muniz, Adrian; Michael K Brandon
Subject: Fw: Courtesy Copy of NRC3-13-0011

Included in this email - NRC3-13-0011_Part2.pdf, 4.27 MB, pg. 122-177 (56 pages).

Thanks,

Ryan Pratt
Nuclear Development - Licensing
313.235.0109

-----Forwarded by Ryan C Pratt/Employees/dteenergy on 03/18/2013 11:38AM -----

To: "Govan Tekia" <Tekia.Govan@nrc.gov>
From: Ryan C Pratt/Employees/dteenergy
Date: 03/18/2013 11:38AM
Cc: "Muniz Adrian" <Adrian.Muniz@nrc.gov>, Michael K Brandon/Employees/dteenergy@dteenergy
Subject: Fw: Courtesy Copy of NRC3-13-0011

(See attached file: NRC3-13-0011_Part1.pdf)

It didn't go through. I'm going to send it in two separate emails.

Included in this email - NRC-13-0011_Part1.pdf, 4.39 MB, pg. 1-121 (121 pages)

Attached to the next email - NRC-13-0011_Part2.pdf, 4.27 MB, pg. 122-177 (56 pages)

Hard copies were also delivered today.

Thanks,

Ryan Pratt
Nuclear Development - Licensing
313.235.0109

-----Forwarded by Ryan C Pratt/Employees/dteenergy on 03/18/2013 11:34AM -----

To: "Govan Tekia" <Tekia.Govan@nrc.gov>
From: Ryan C Pratt/Employees/dteenergy
Date: 03/18/2013 11:29AM

Cc: "Muniz Adrian" <Adrian.Muniz@nrc.gov>, Michael K Brandon/Employees/dteenergy@dteenergy
Subject: Fw: Courtesy Copy of NRC3-13-0011

Letter NRC3-13-0011 is attached again. Please let me know if there are any issues receiving it.

Thanks,

Ryan Pratt
Nuclear Development - Licensing
313.235.0109

-----Forwarded by Ryan C Pratt/Employees/dteenergy on 03/18/2013 11:26AM -----

To: "Govan Tekia" <Tekia.Govan@nrc.gov>
From: Ryan C Pratt/Employees/dteenergy
Date: 03/15/2013 06:40PM
Cc: "Muniz Adrian" <Adrian.Muniz@nrc.gov>, Michael K Brandon/Employees/dteenergy@dteenergy
Subject: Courtesy Copy of NRC3-13-0011

(See attached file: NRC3-13-0011.pdf)

Tekia,

Attached is DTE Electric letter NRC3-13-0011, "DTE Electric Company Supplemental Response to NRC Request for Additional Information Letter No. 77." This letter provides markups to FSAR Subsection 2.5.2 in response to RAI 01.05-1.

Due to the timing of shipment, this letter may not arrive in Washington until Tuesday. Please let me know if you have any questions.

Thanks,

Ryan Pratt
Nuclear Development - Licensing
313.235.0109

Hearing Identifier: Fermi_COL_Public
Email Number: 1172

Mail Envelope Properties (F5A4366DF596BF458646C9D433EA37D7EEA8E38581)

Subject: FW: Courtesy Copy of NRC3-13-0011
Sent Date: 3/18/2013 12:55:15 PM
Received Date: 3/18/2013 12:55:20 PM
From: Govan, Tekia

Created By: Tekia.Govan@nrc.gov

Recipients:
"FermiCOL Resource" <FermiCOL.Resource@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	2764	3/18/2013 12:55:20 PM
NRC3-13-0011_Part2.pdf	4484455	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Figure 2.5.2-233 Earthquake Catalog for CEUS SSC Model with Location of Earthquakes with E[**M**] Greater than 4.3 from 2009 to 2012 [EF3 COL 2.0-27-A]

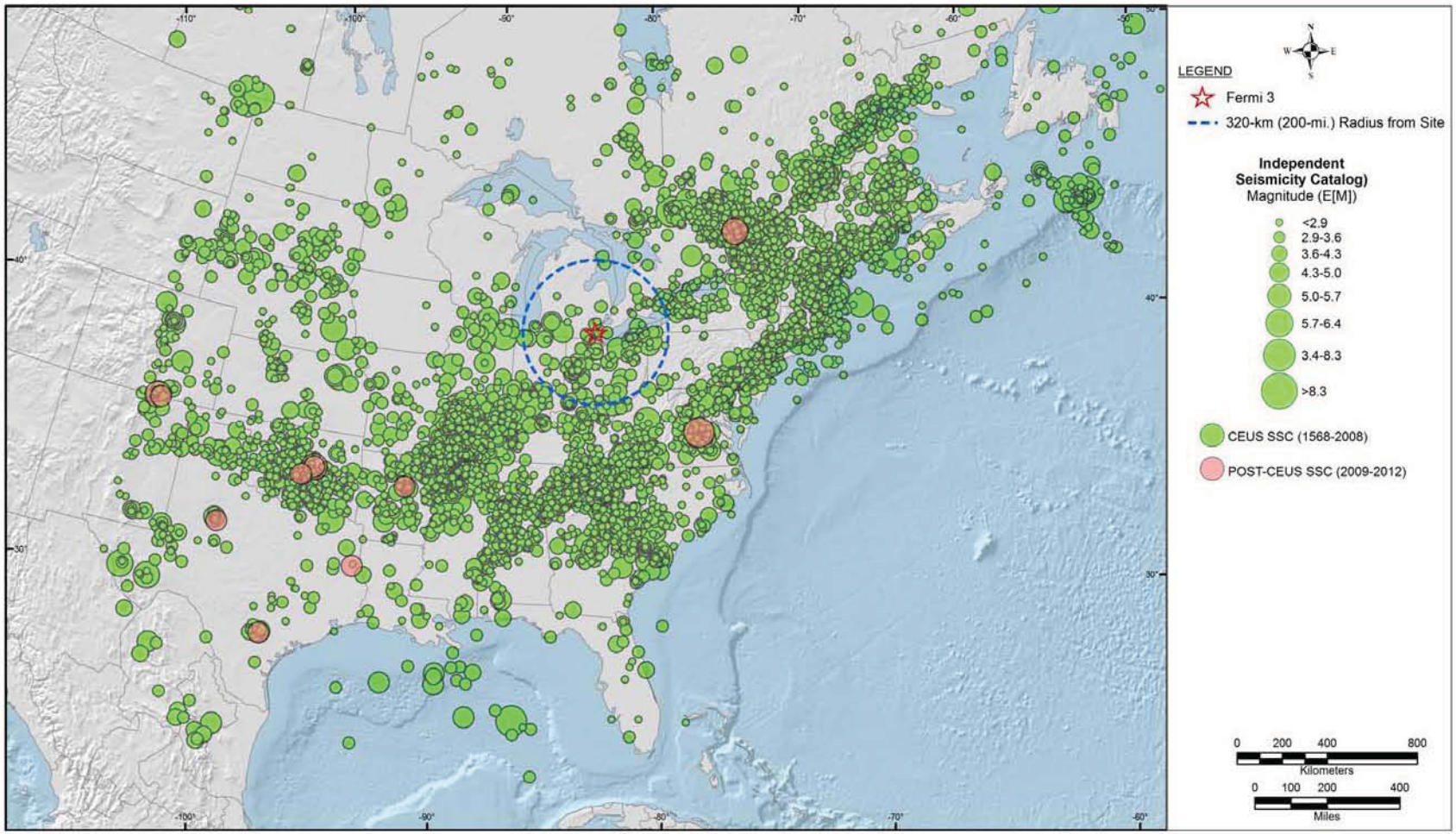


Figure 2.5.2-234 Mmax Distributions for Source Zone NMESE-W Based on NUREG-2115 Inputs and Updated Inputs
[EF3 COL 2.0-27-A]

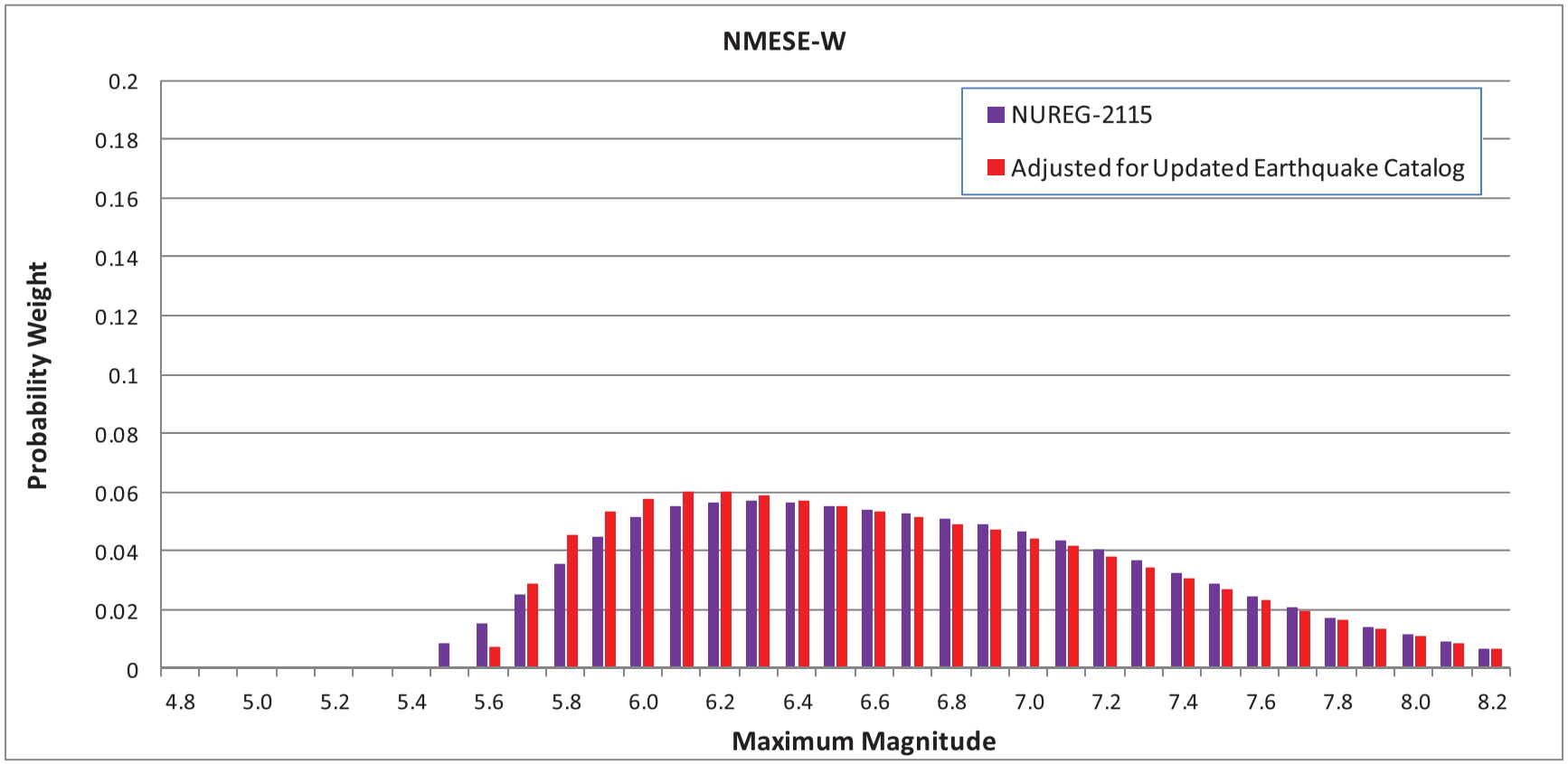


Figure 2.5.2-235 Mmax Distributions for Source Zone ECC-AM Based on NUREG-2115 Inputs and Updated Inputs

[EF3 COL 2.0-27-A]

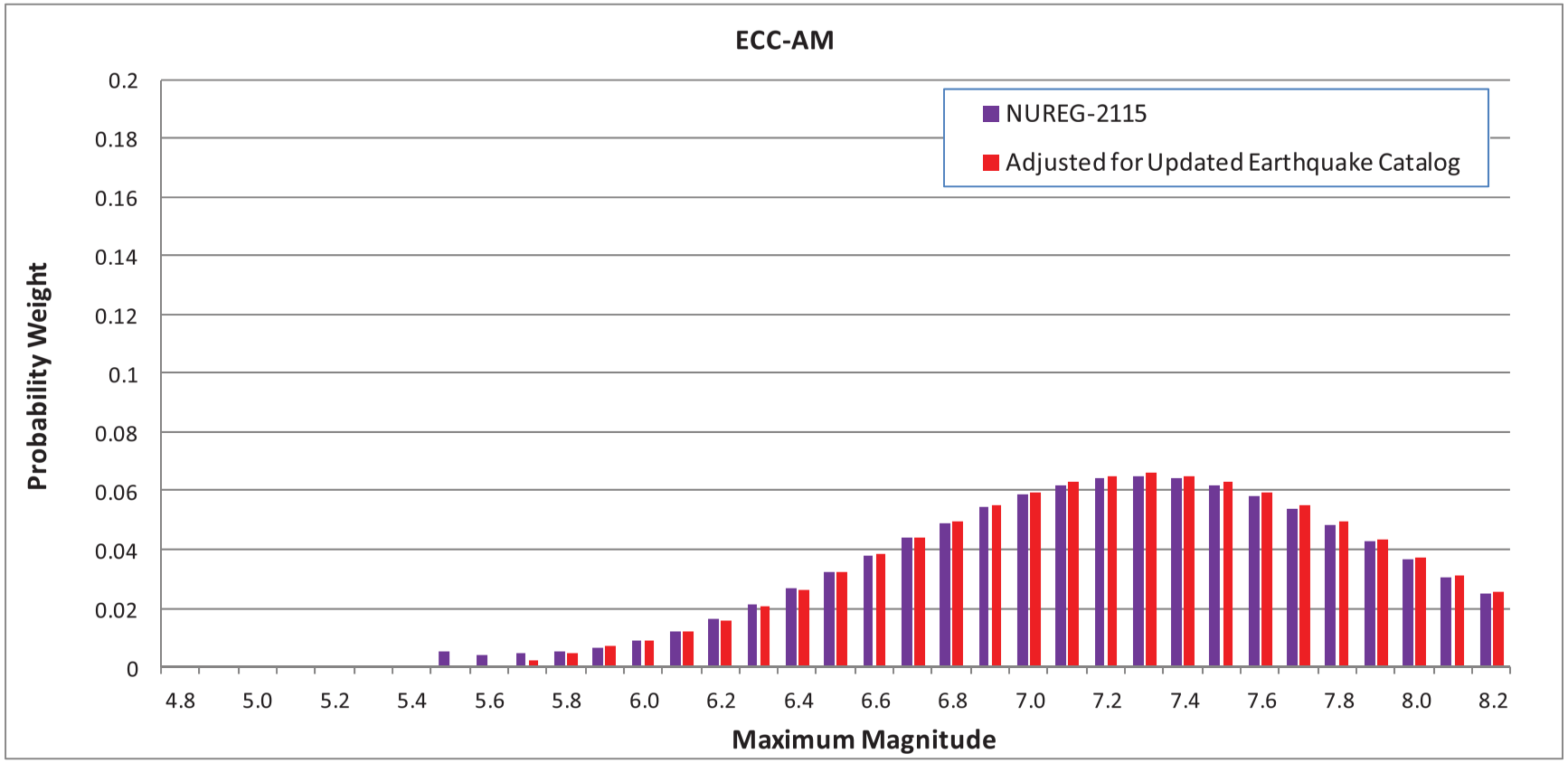


Figure 2.5.2-236 Mmax Distributions for Source Zones MIDC-A and MIDC-B Based on NUREG-2115 Inputs and Updated Inputs [EF3 COL 2.0-27-A]

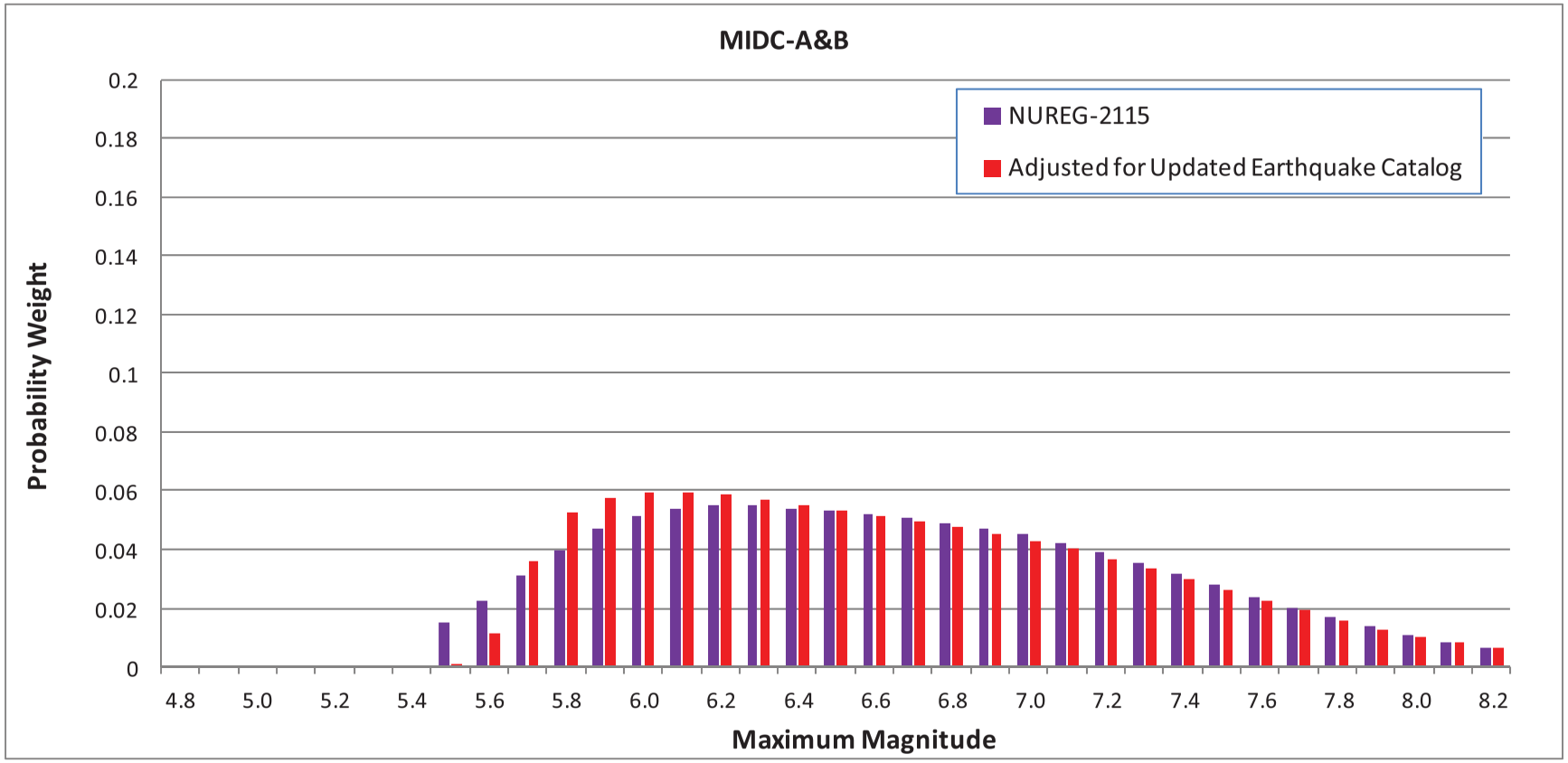


Figure 2.5.2-237 Mmax Distributions for Source Zones MIDC-C and MIDC-D Based on NUREG-2115 Inputs and Updated Inputs [EF3 COL 2.0-27-A]

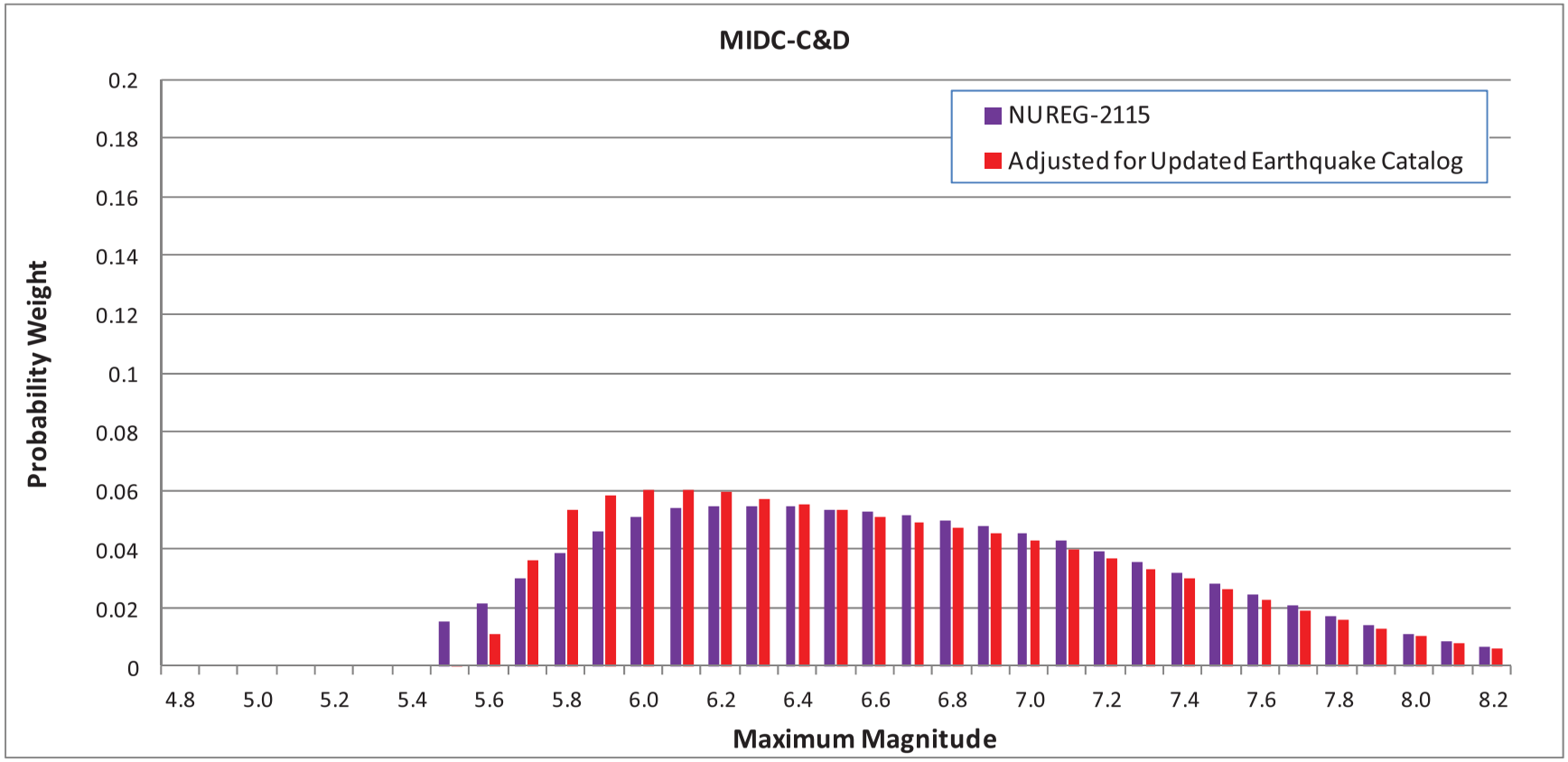


Figure 2.5.2-238 Ground Motion Characterization Logic Tree Used in the PSHA for the Fermi 3 Site [EF3 COL 2.0-27-A]

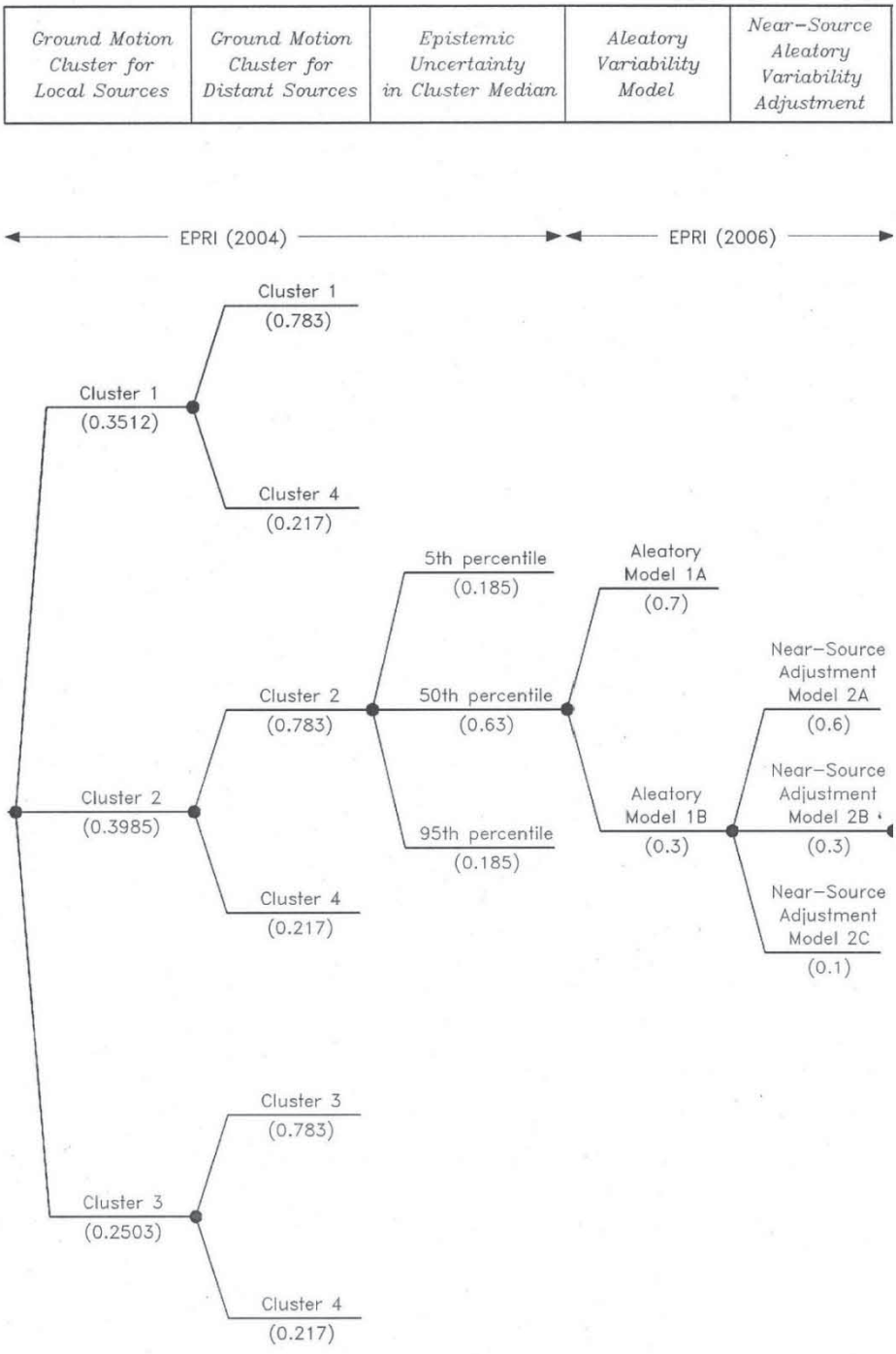
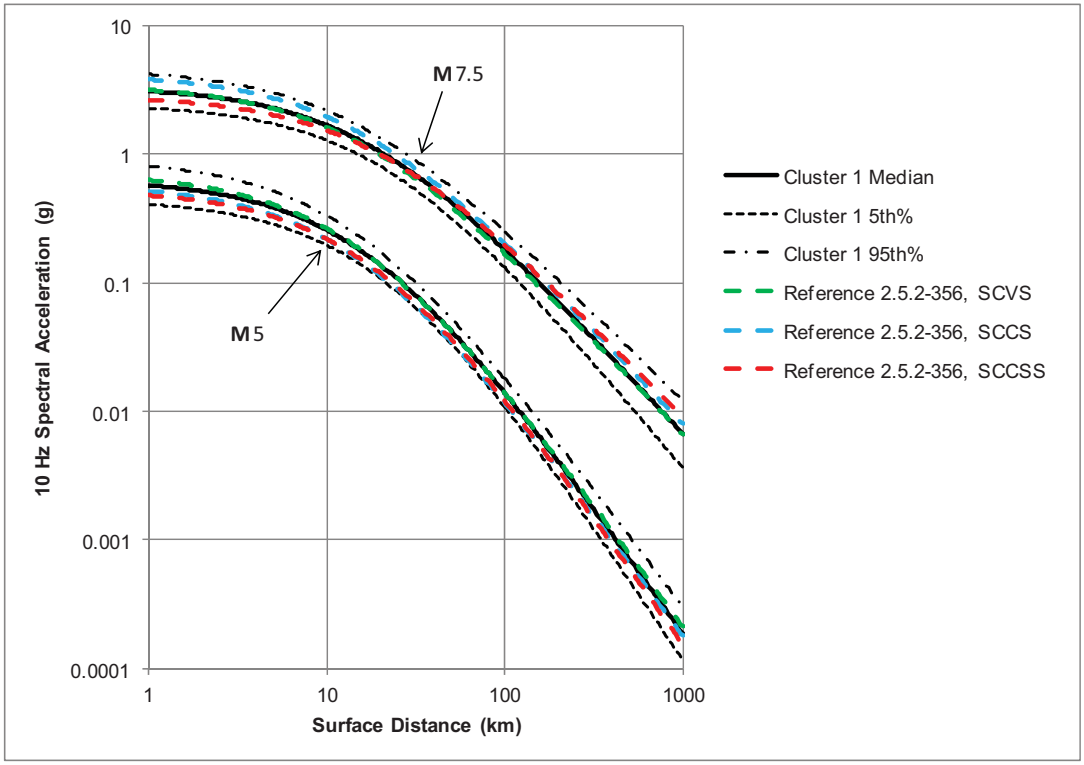


Figure 2.5.2-239a Comparison of Median Ground Motion Model Used in the PSHA with Recently Published Models - Cluster 1 [EF3 COL 2.0-27-A]



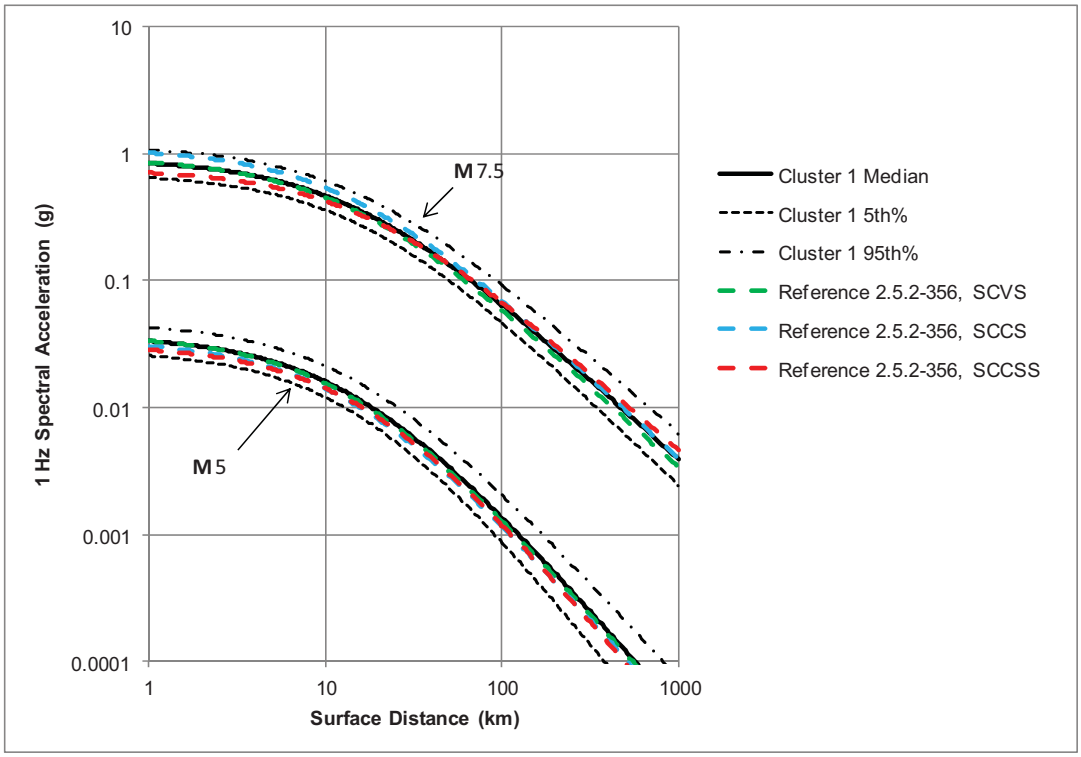
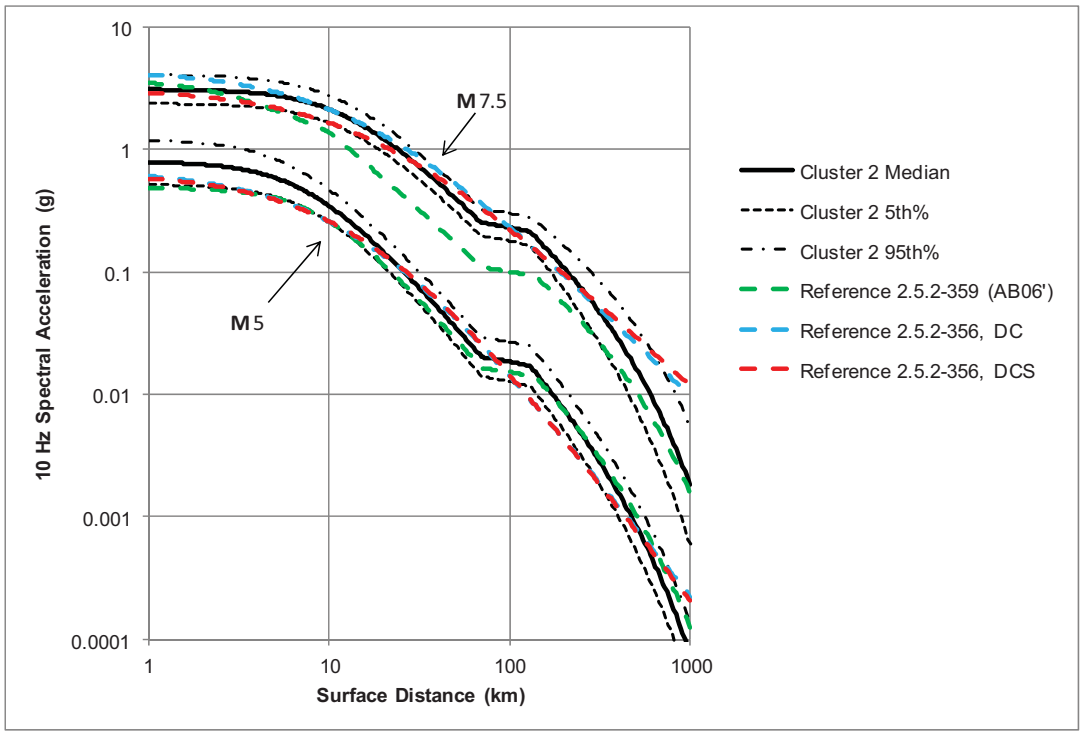


Figure 2.5.2-239b Comparison of Median Ground Motion Model Used in the PSHA with Recently Published Models - Cluster 2 [EF3 COL 2.0-27-A]



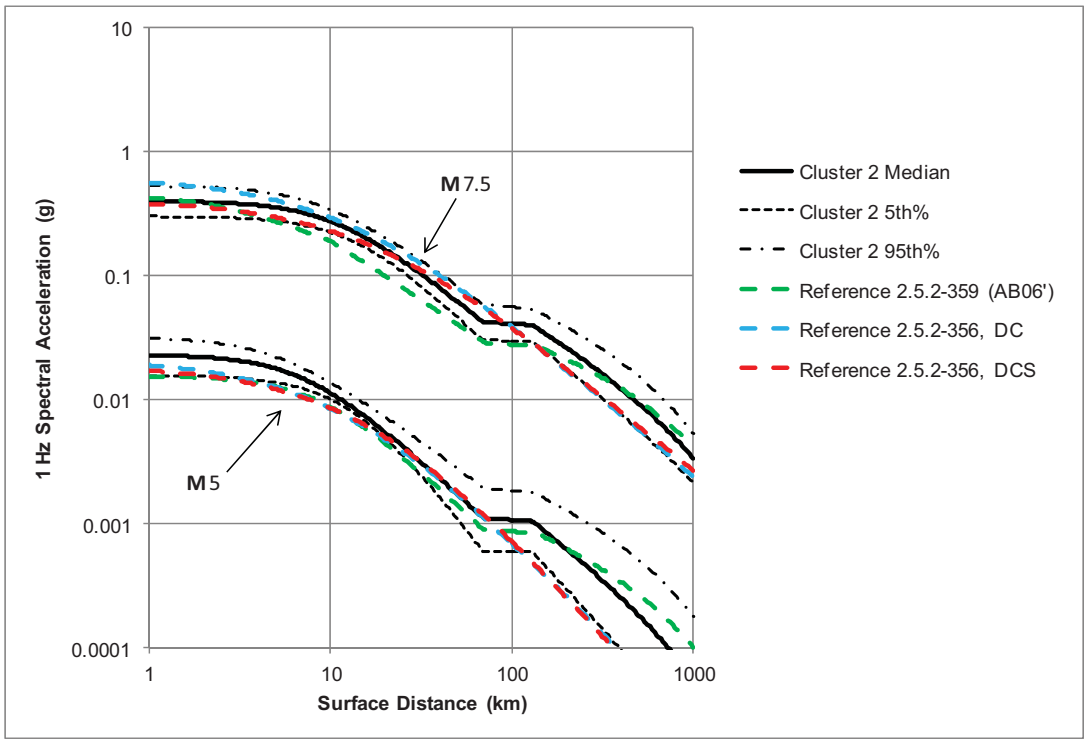
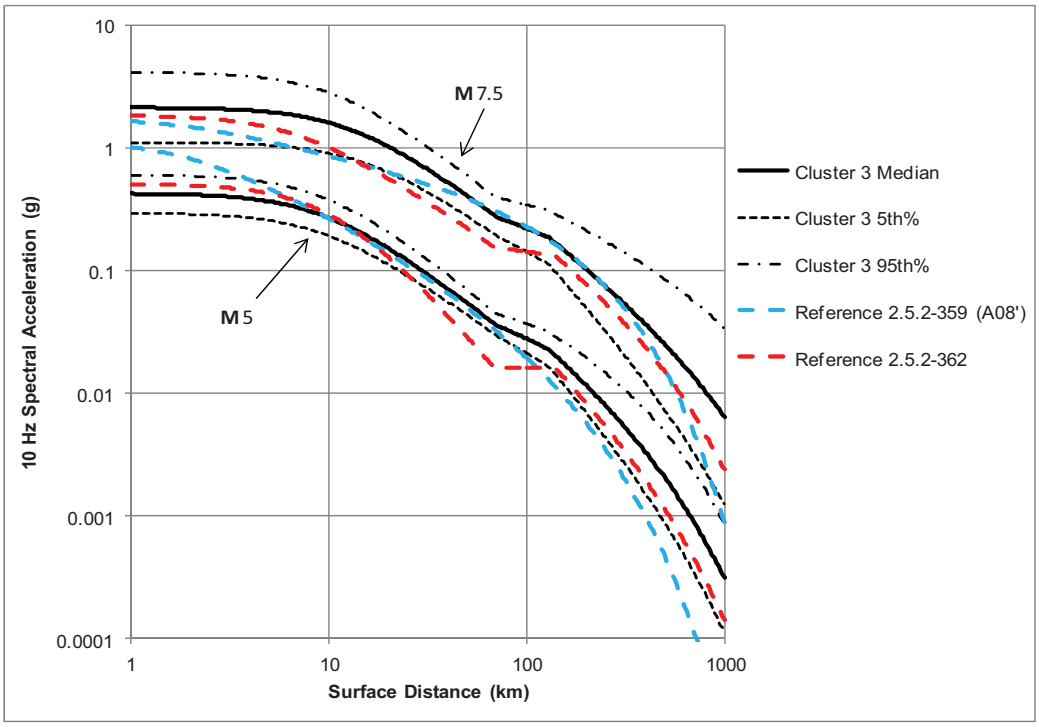


Figure 2.5.2-239c Comparison of Median Ground Motion Models Used in the PSHA with Recently Published - Cluster 3 [EF3 COL 2.0-27-A]



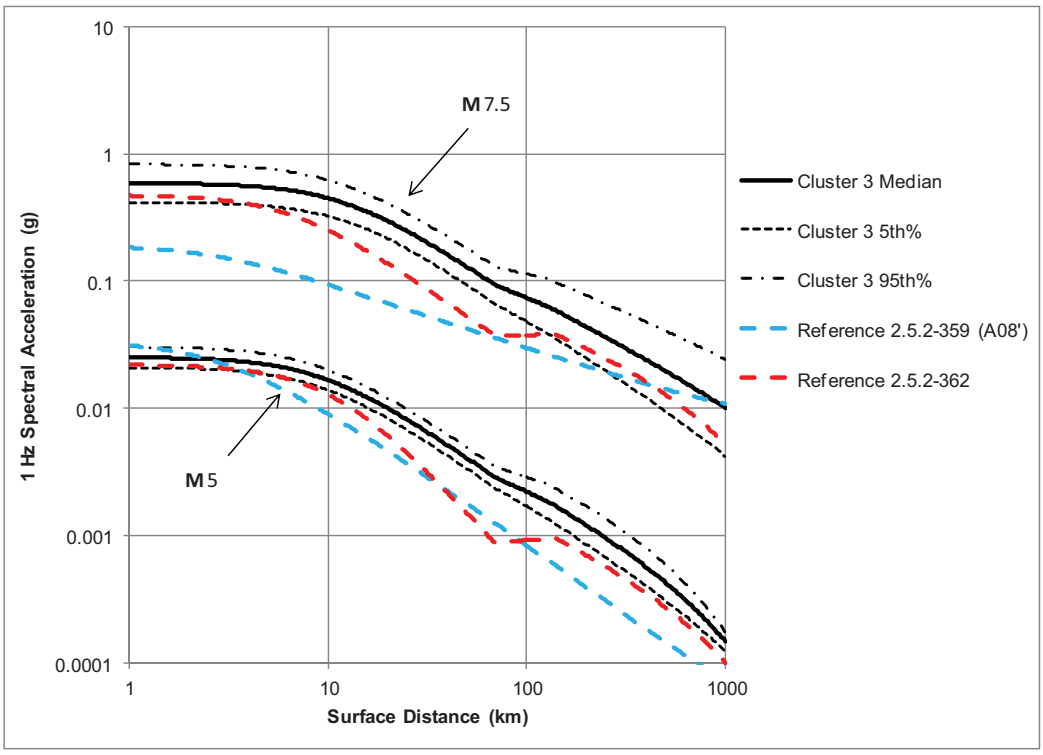


Figure 2.5.2-240 Contribution of Individual RLME Sources to the Mean Hazard for 1 Hz Spectral Acceleration at the Fermi 3 Site [EF3 COL 2.0-27-A]

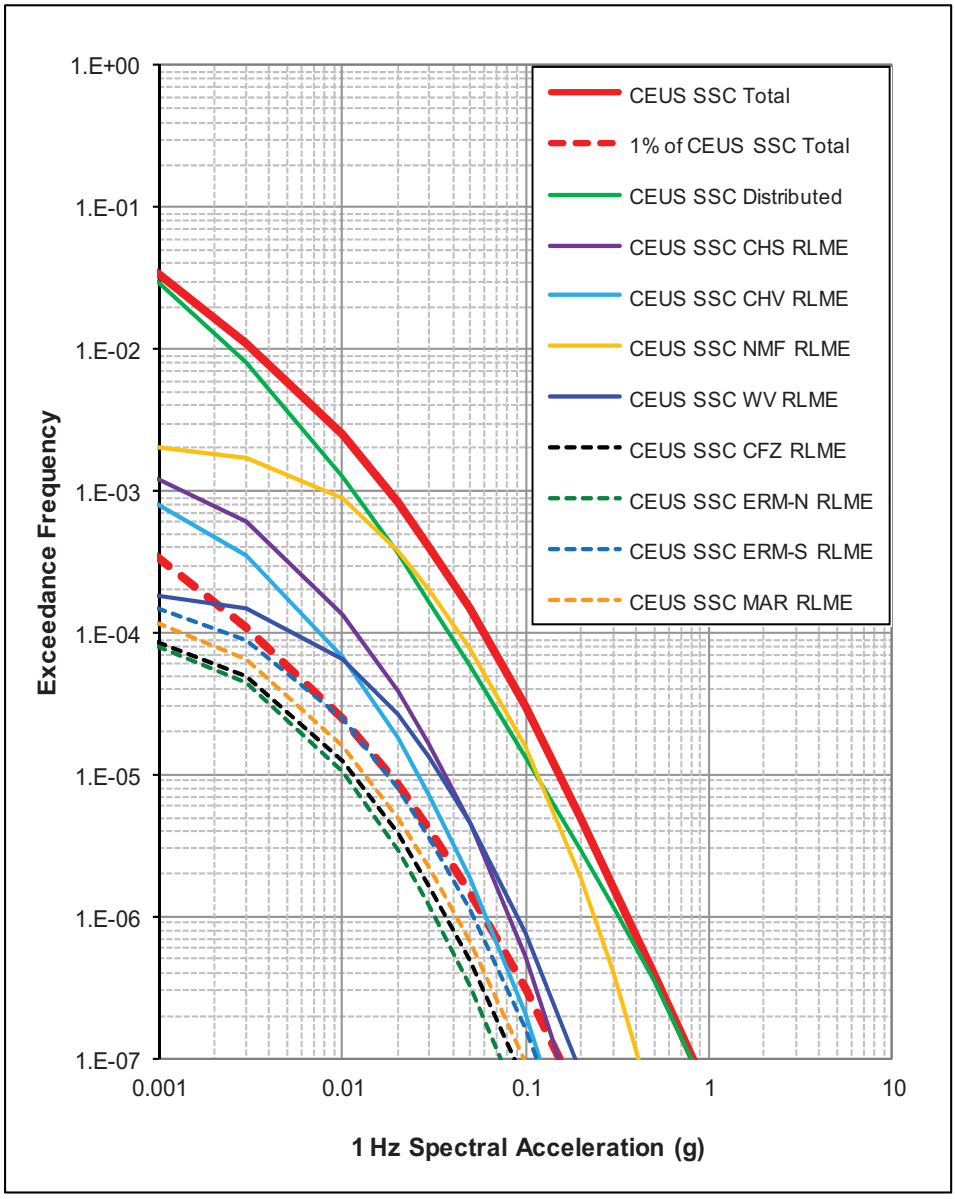


Figure 2.5.2-241 Contribution of Individual RLME Source to the Mean Hazard for 10 Hz Spectral Acceleration at the Fermi 3 Site [EF3 COL 2.0-27-A]

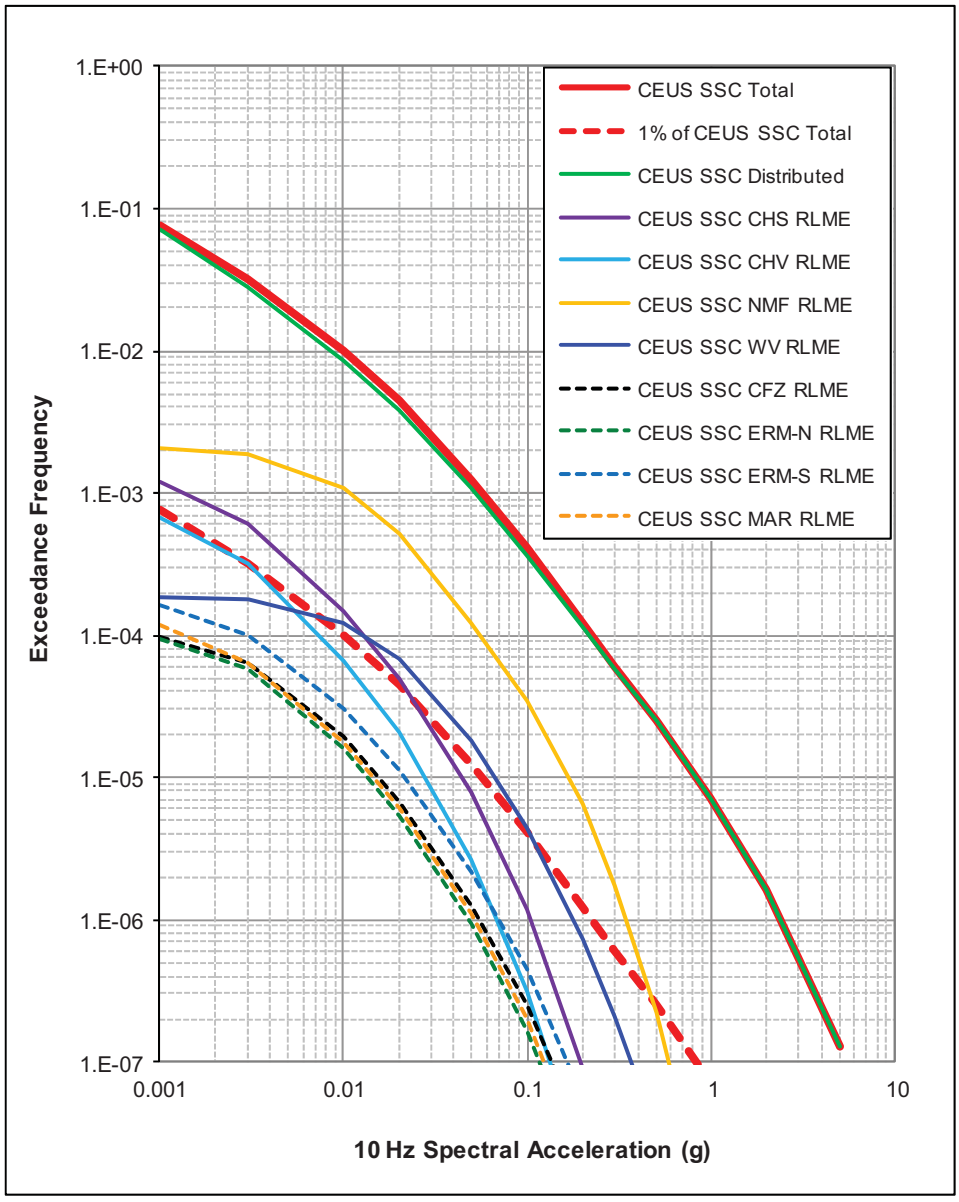


Figure 2.5.2-242 Generic CEUS Hard Rock Hazard Results for 0.5 Hz Spectral Accelerations for the Fermi 3 Site [EF3 COL 2.0-27-A]

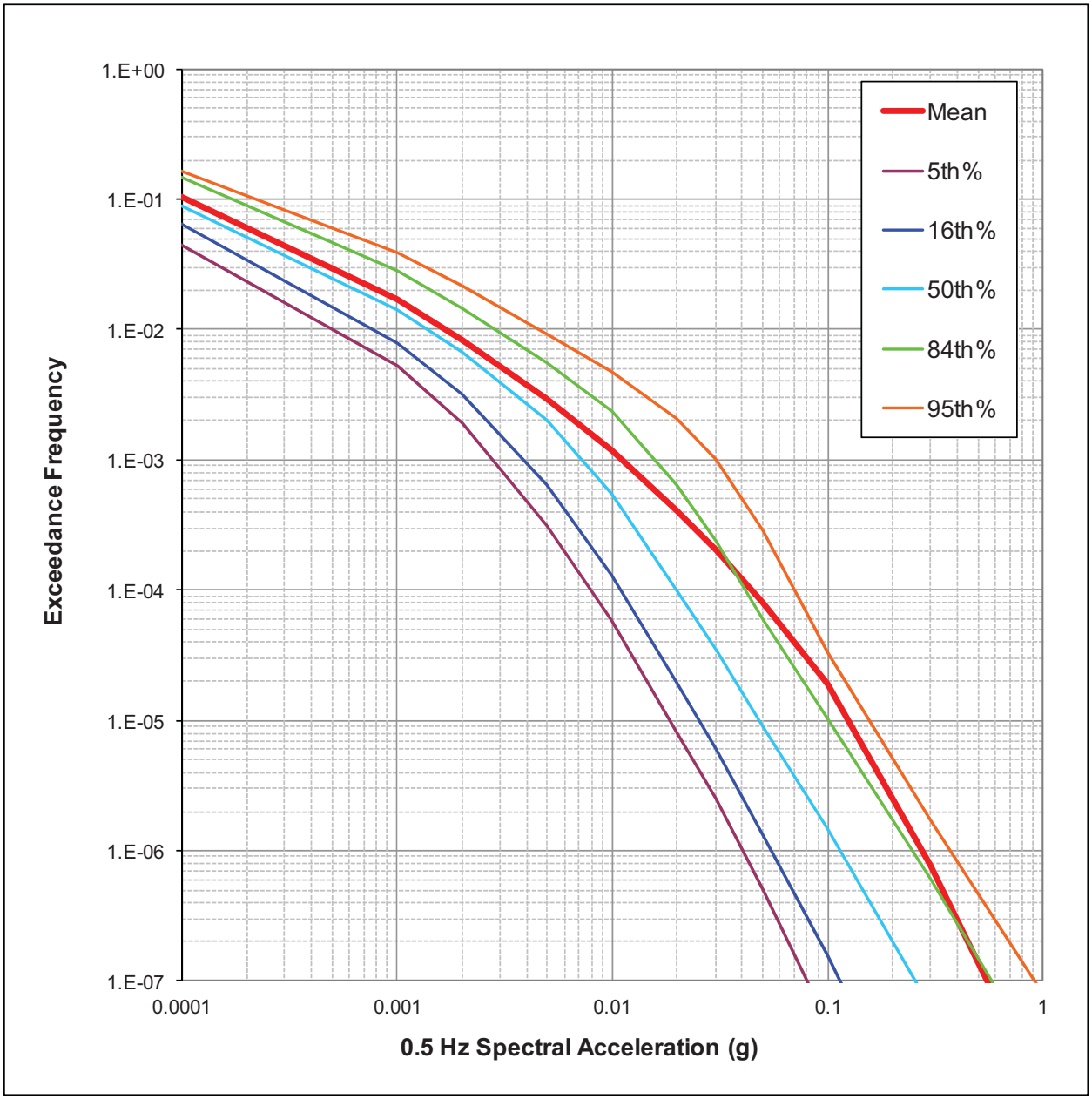


Figure 2.5.2-243 Generic CEUS Hard Rock Hazard Results for 1.0 Hz Spectral Accelerations for the Fermi 3 Site [EF3 COL 2.0-27-A]

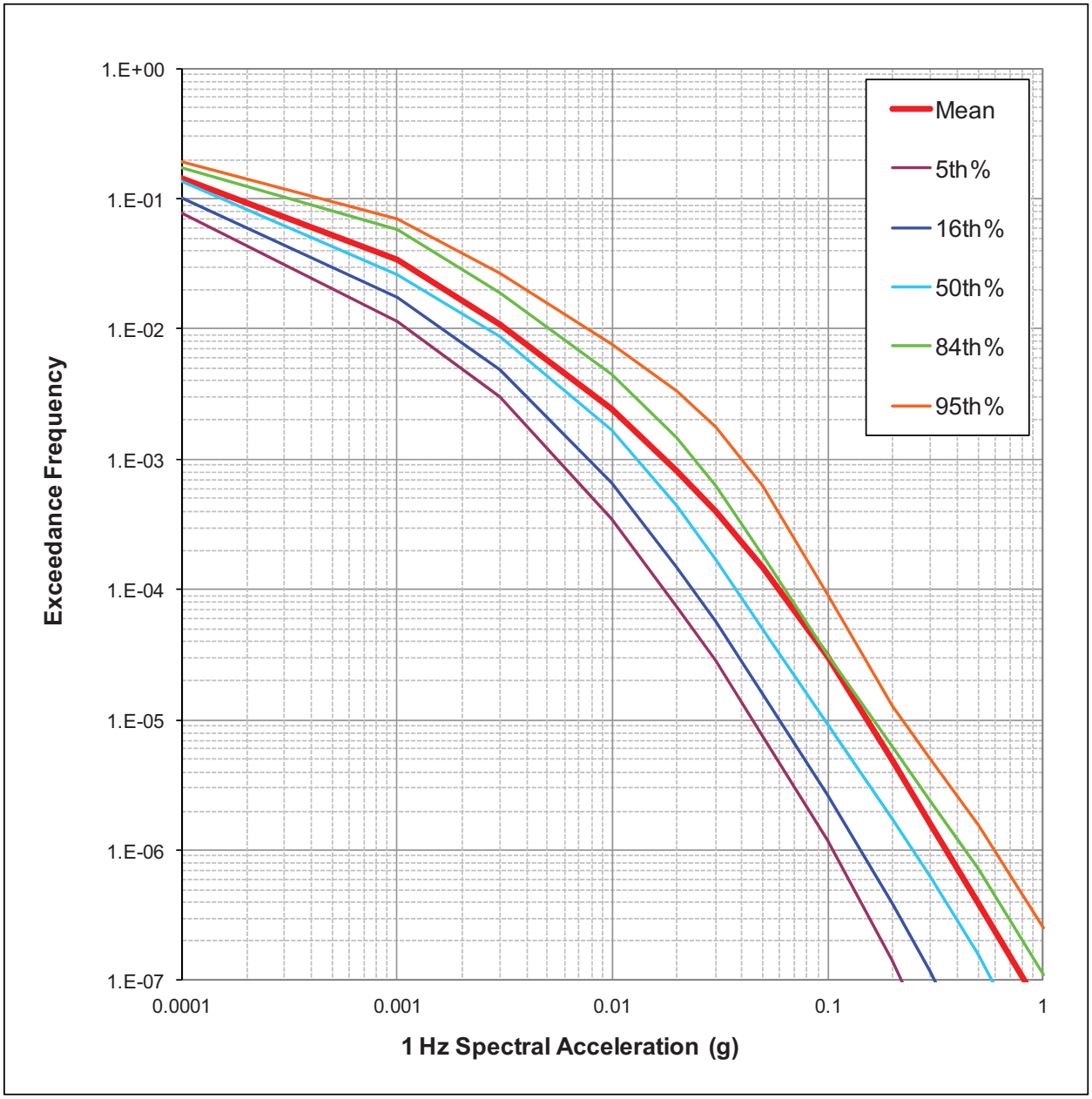


Figure 2.5.2-244 Generic CEUS Hard Rock Hazard Results for 2.5 Hz Spectral Accelerations for the Fermi 3 Site [EF3 COL 2.0-27-A]

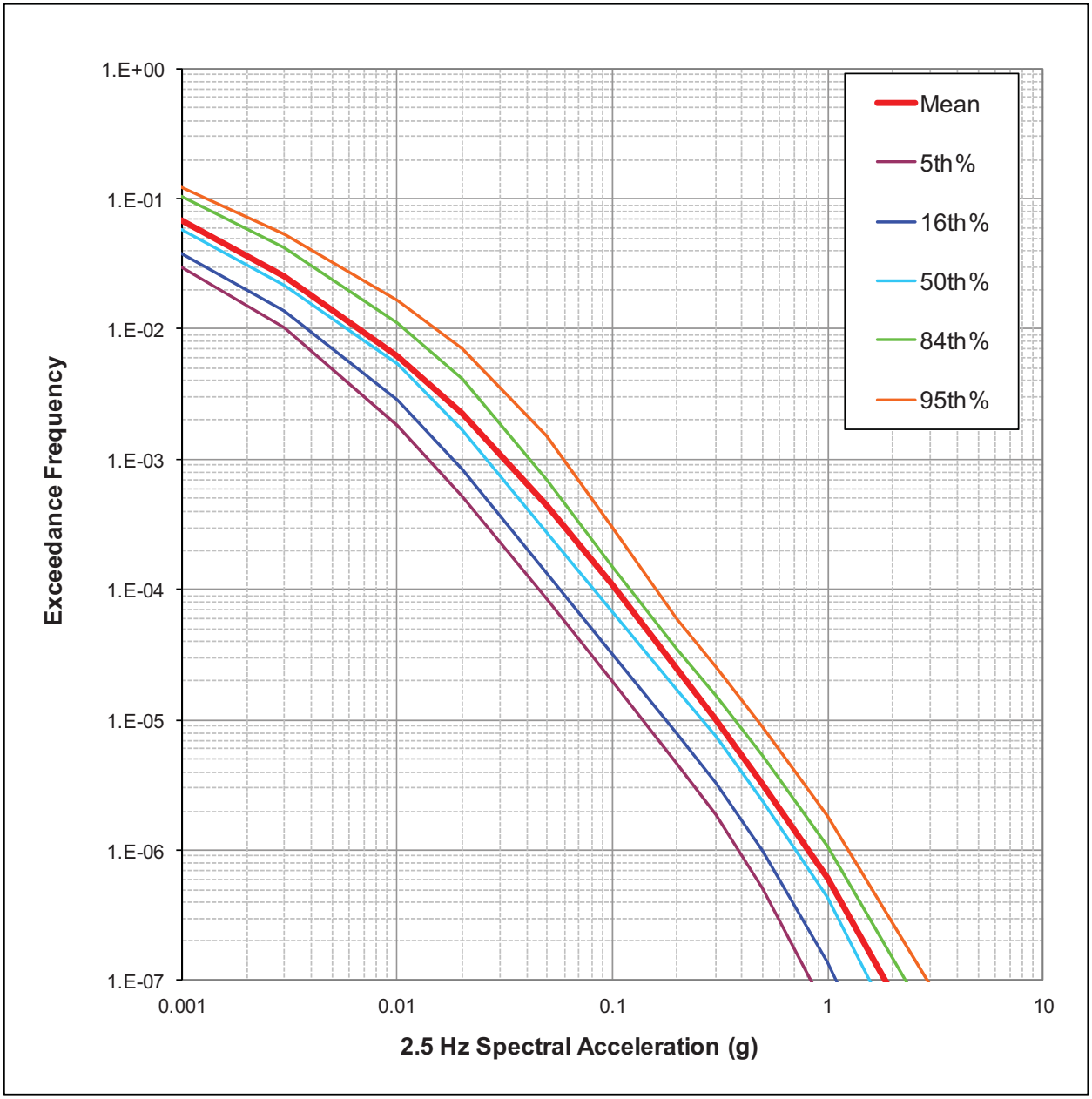


Figure 2.5.2-245 Generic CEUS Hard Rock Hazard Results for 5 Hz Spectral Accelerations for the Fermi 3 Site [EF3 COL 2.0-27-A]

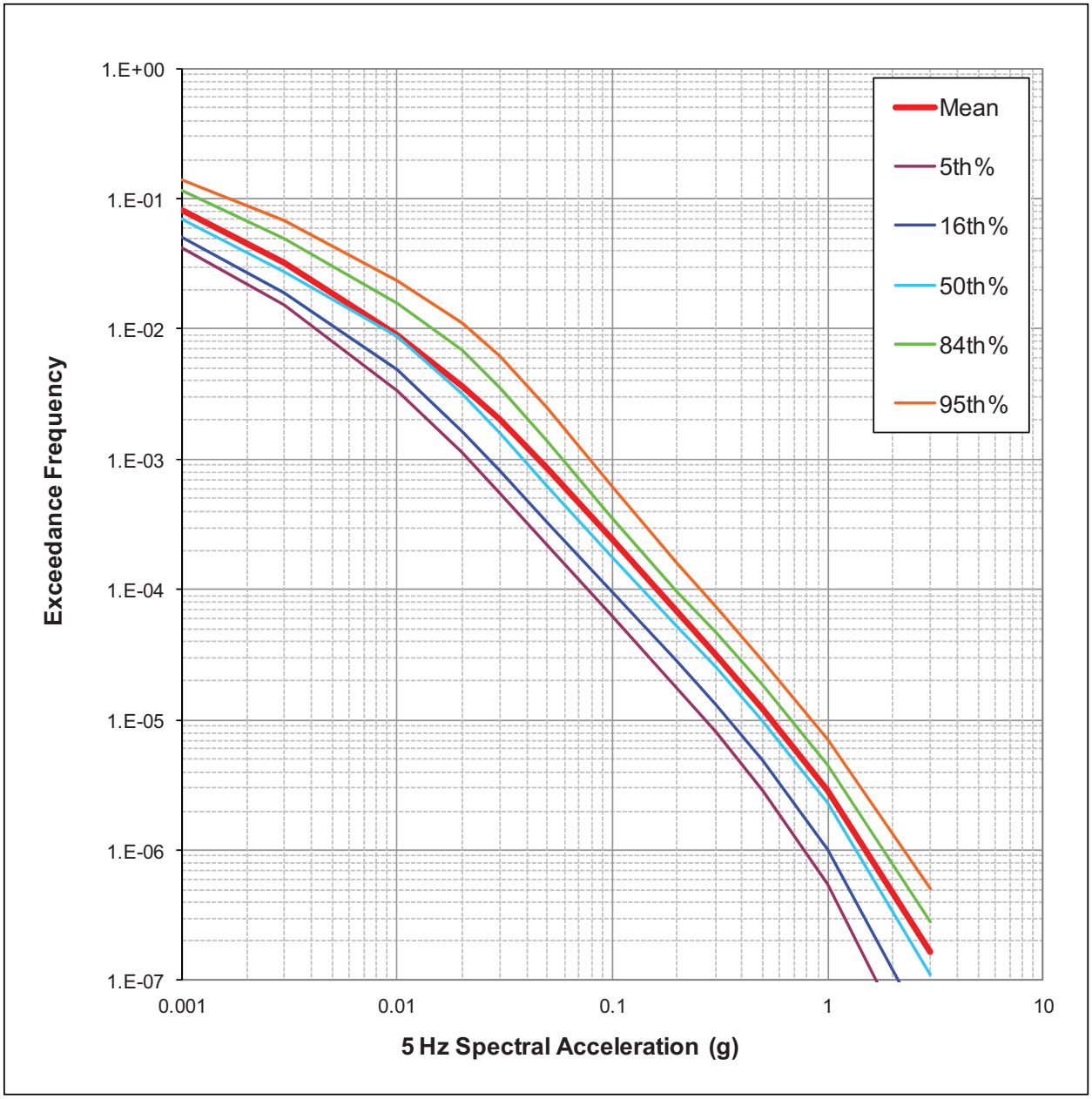


Figure 2.5.2-246 Generic CEUS Hard Rock Hazard Results for 10 Hz Spectral Accelerations for the Fermi 3 Site [EF3 COL 2.0-27-A]

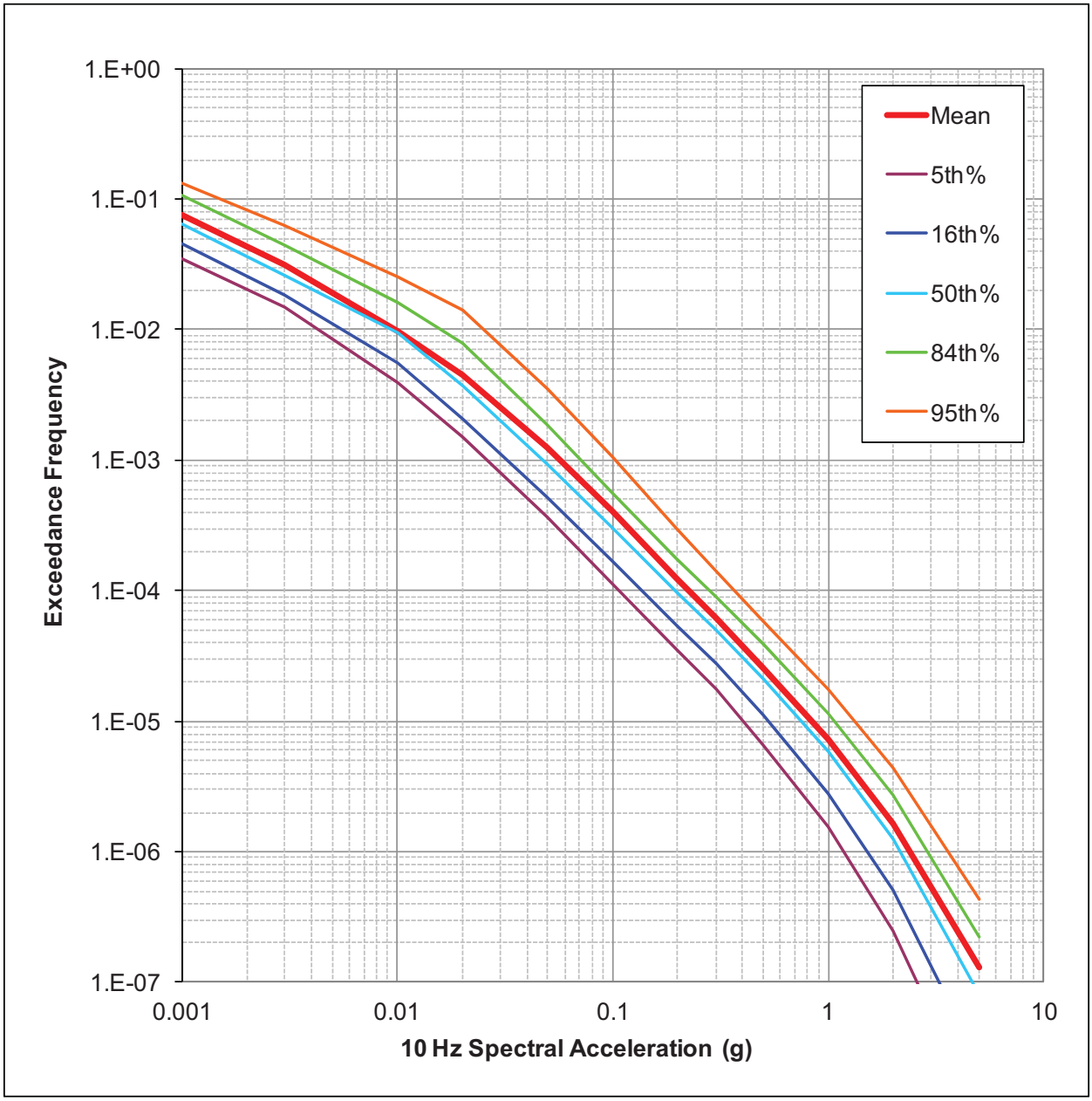


Figure 2.5.2-247 Generic CEUS Hard Rock Hazard Results for 25 Hz Spectral Accelerations for the Fermi 3 Site [EF3 COL 2.0-27-A]

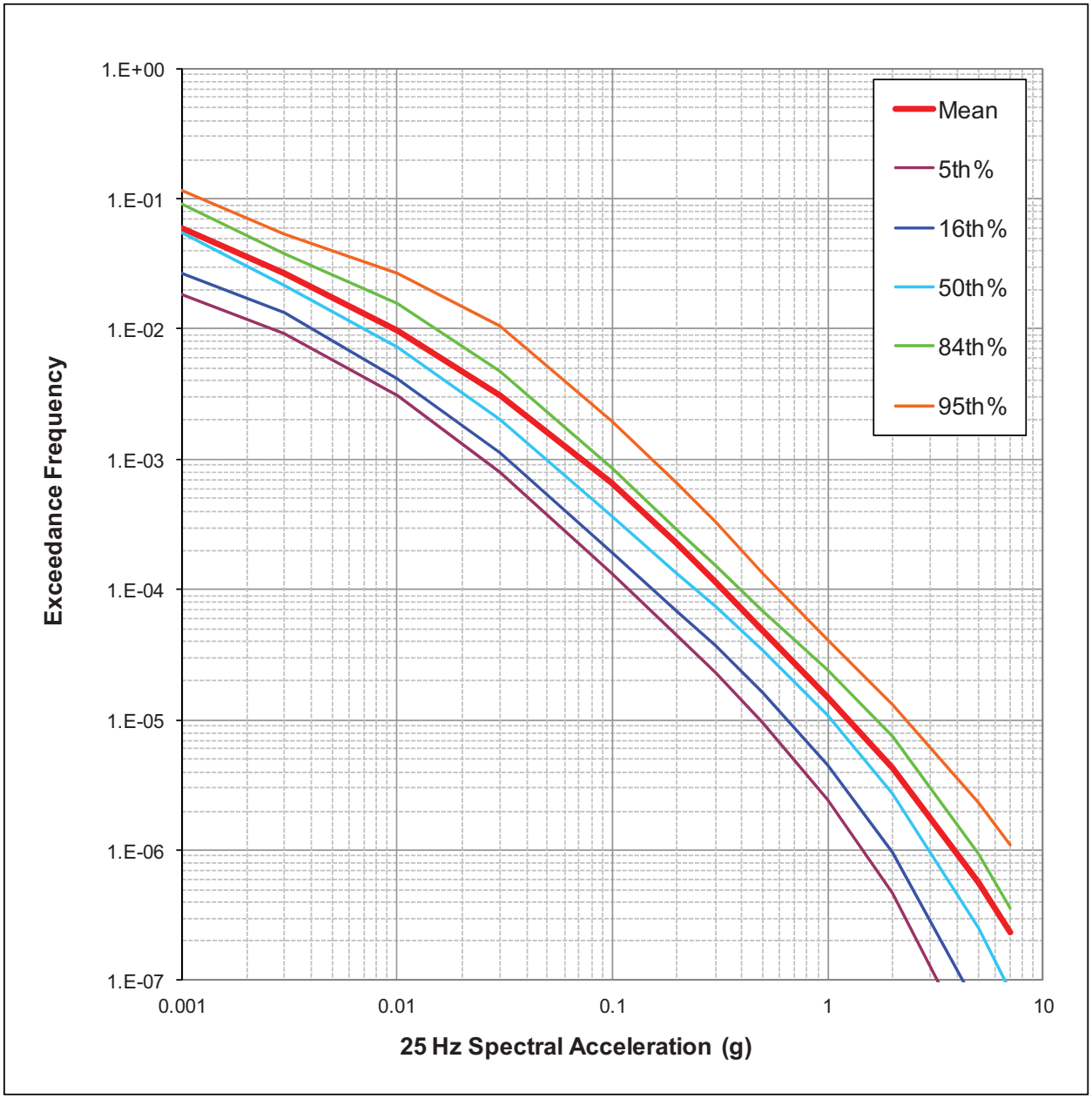


Figure 2.5.2-248 Generic CEUS Hard Rock Hazard Results for Peak Ground Acceleration (100 Hz Spectral Accelerations) for the Fermi 3 Site [EF3 COL 2.0-27-A]

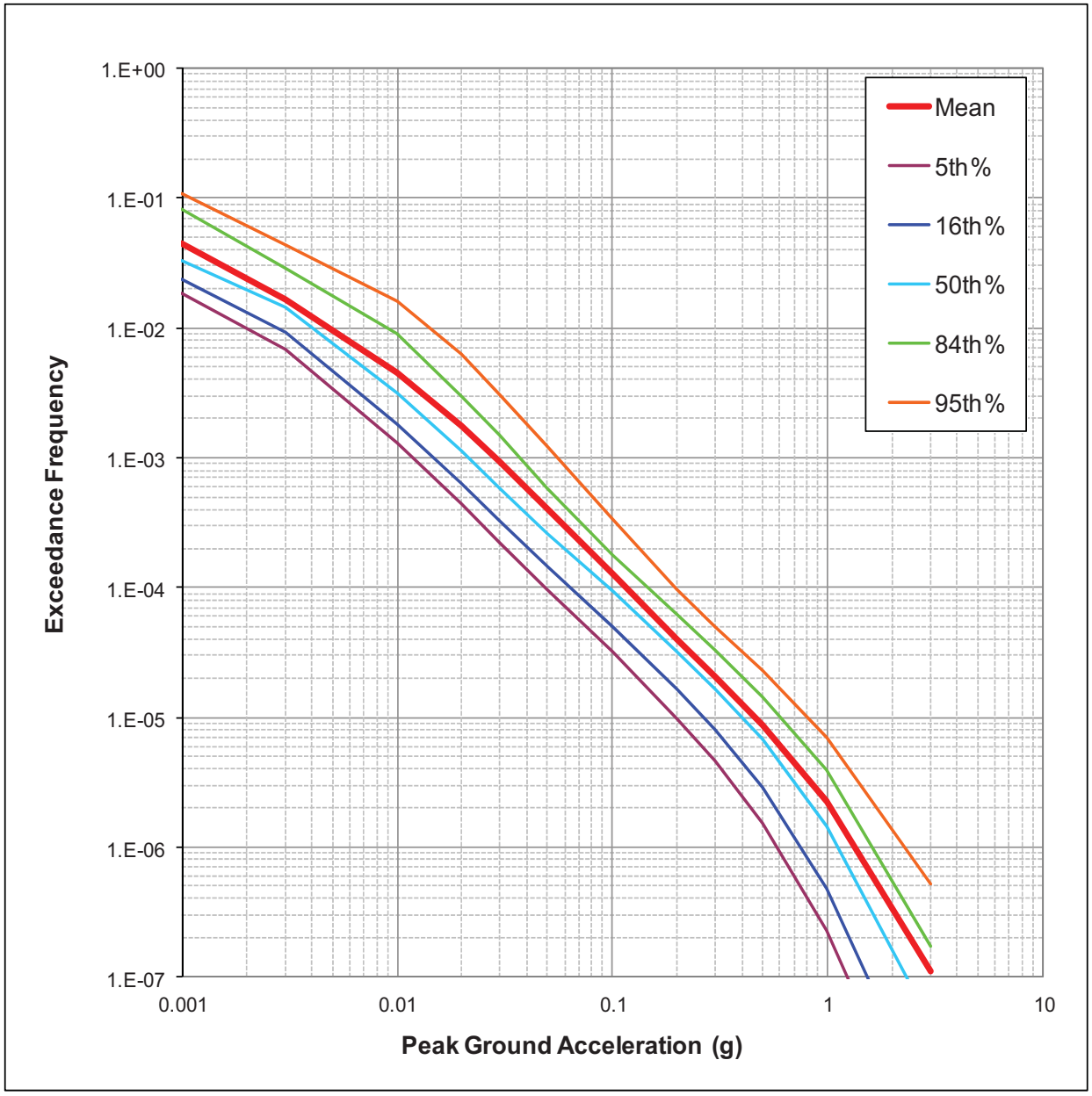


Figure 2.5.2-249 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 0.5 Hz Spectral Acceleration [EF3 COL 2.0-27-A]

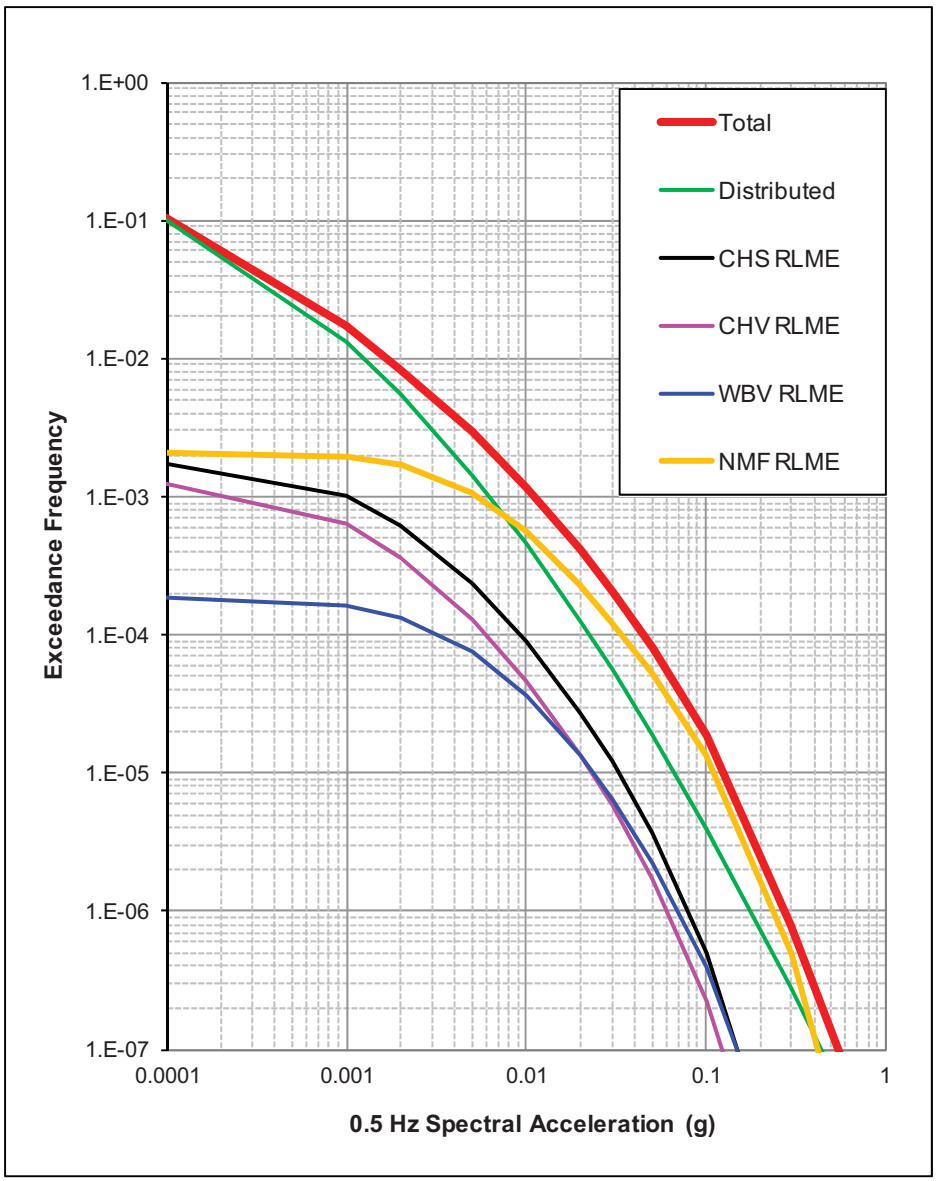


Figure 2.5.2-250 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 1 Hz Spectral Acceleration [EF3 COL 2.0-27-A]

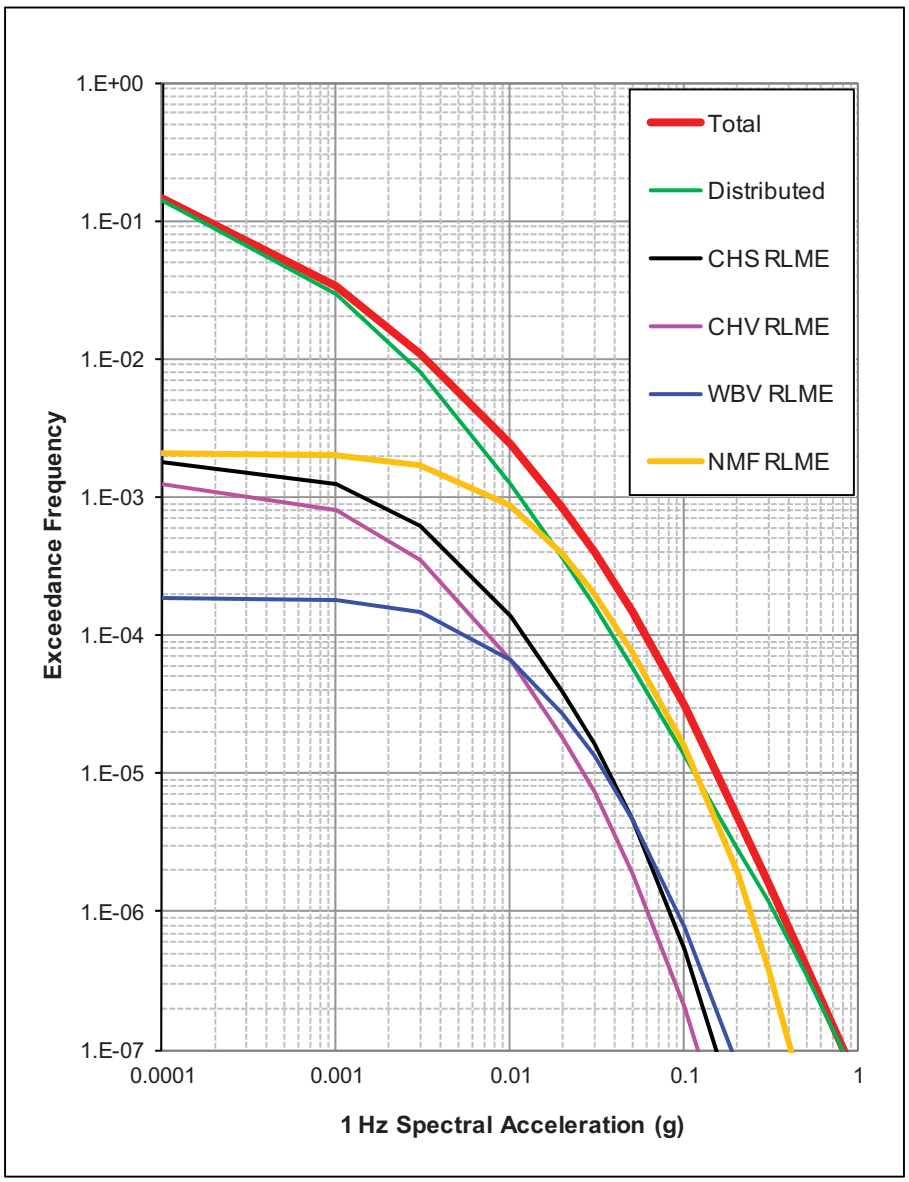


Figure 2.5.2-251 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 2.5 Hz Spectral Acceleration [EF3 COL 2.0-27-A]

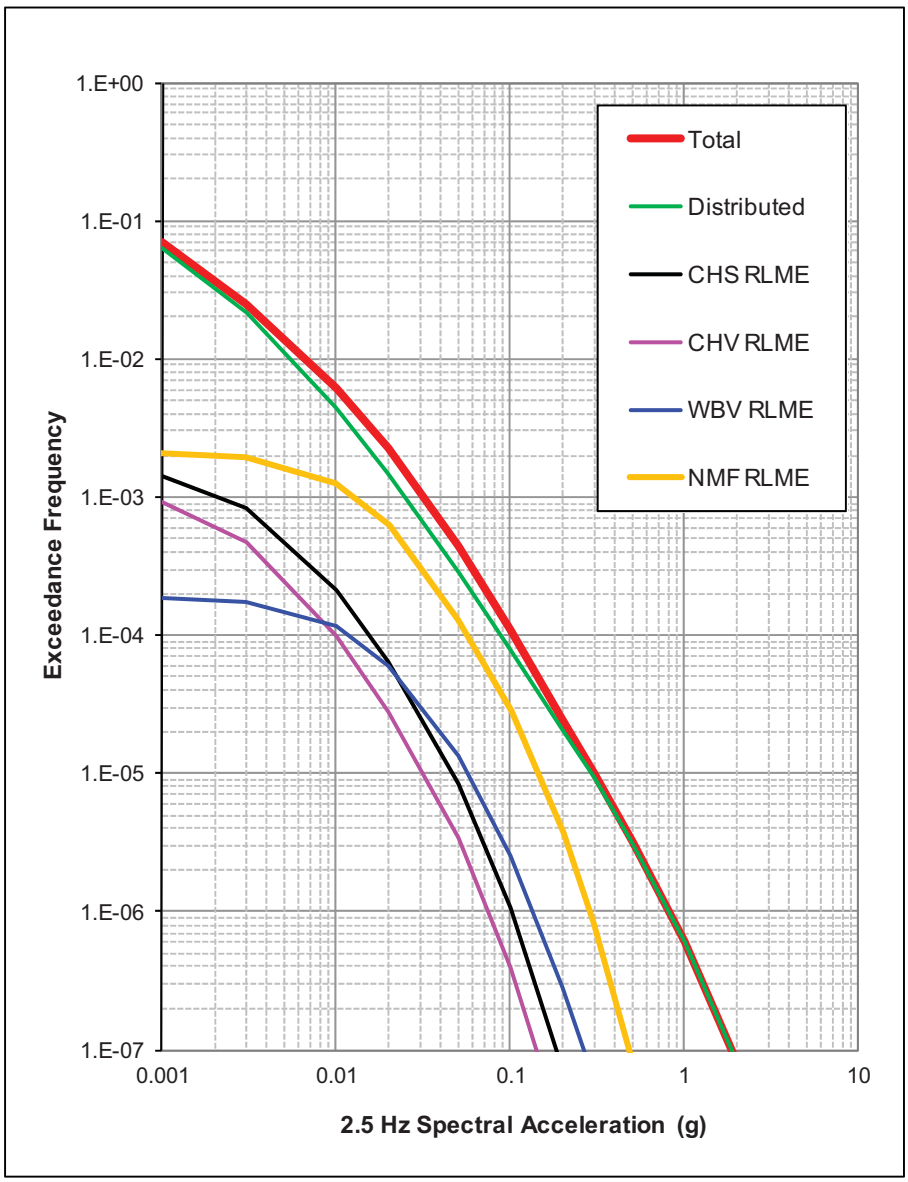


Figure 2.5.2-252 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 5 Hz Spectral Acceleration [EF3 COL 2.0-27-A]

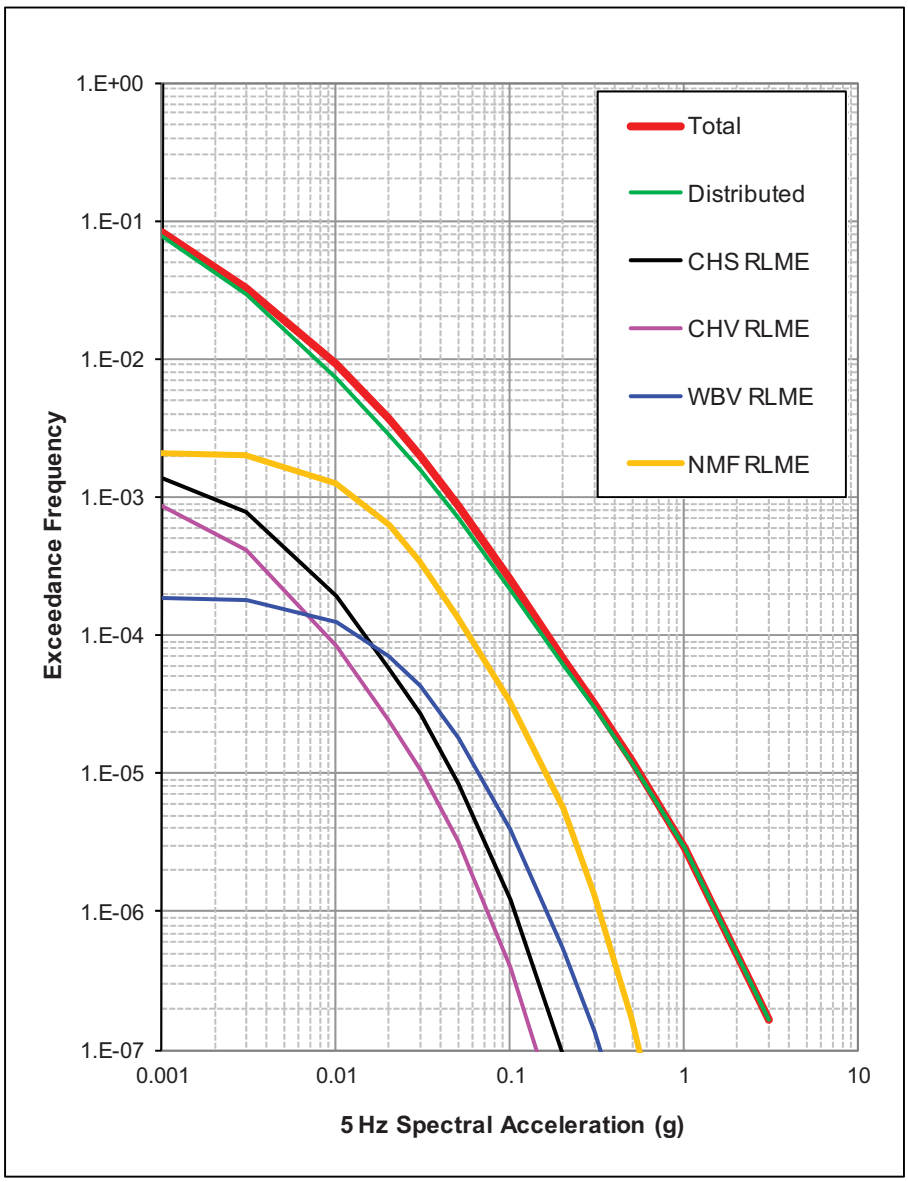


Figure 2.5.2-253 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 10 Hz Spectral Acceleration [EF3 COL 2.0-27-A]

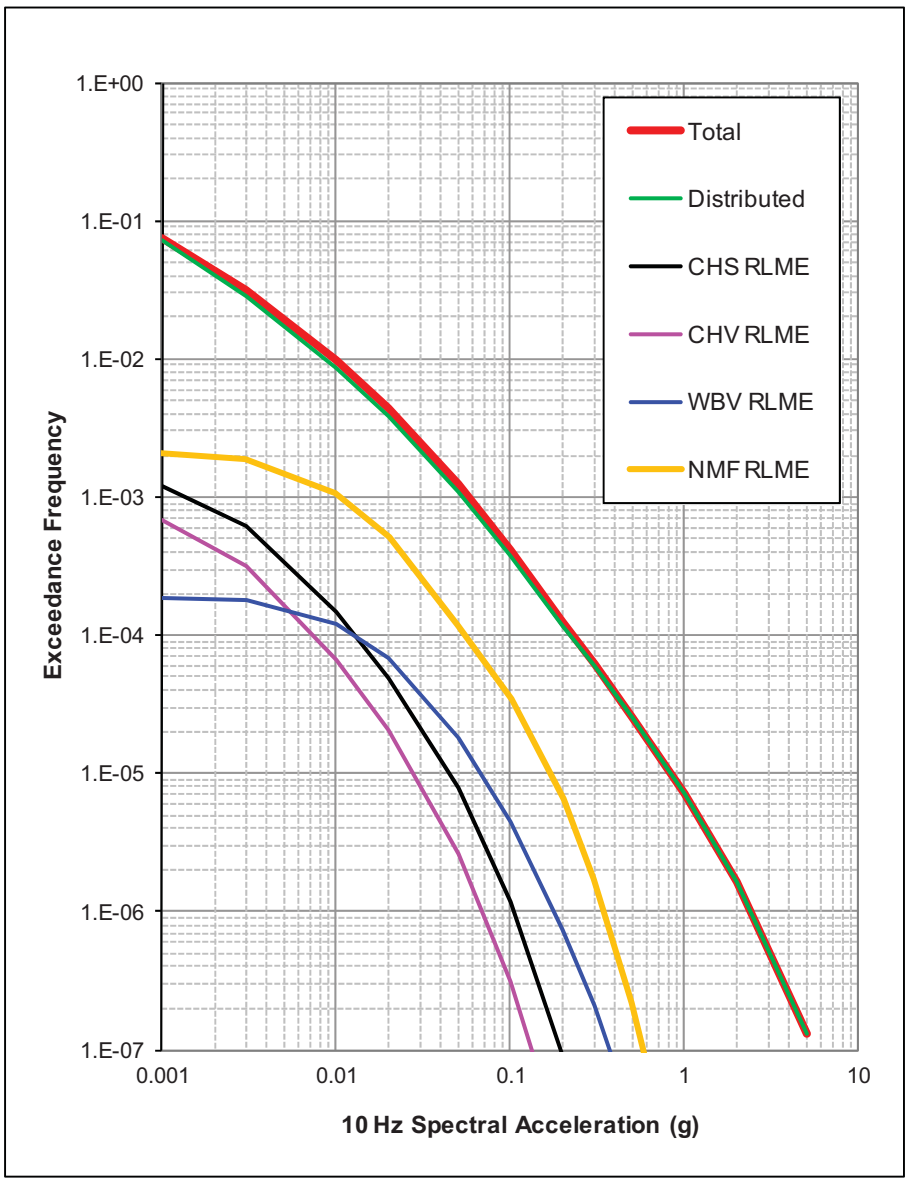


Figure 2.5.2-254 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 25 Hz Spectral Acceleration [EF3 COL 2.0-27-A]

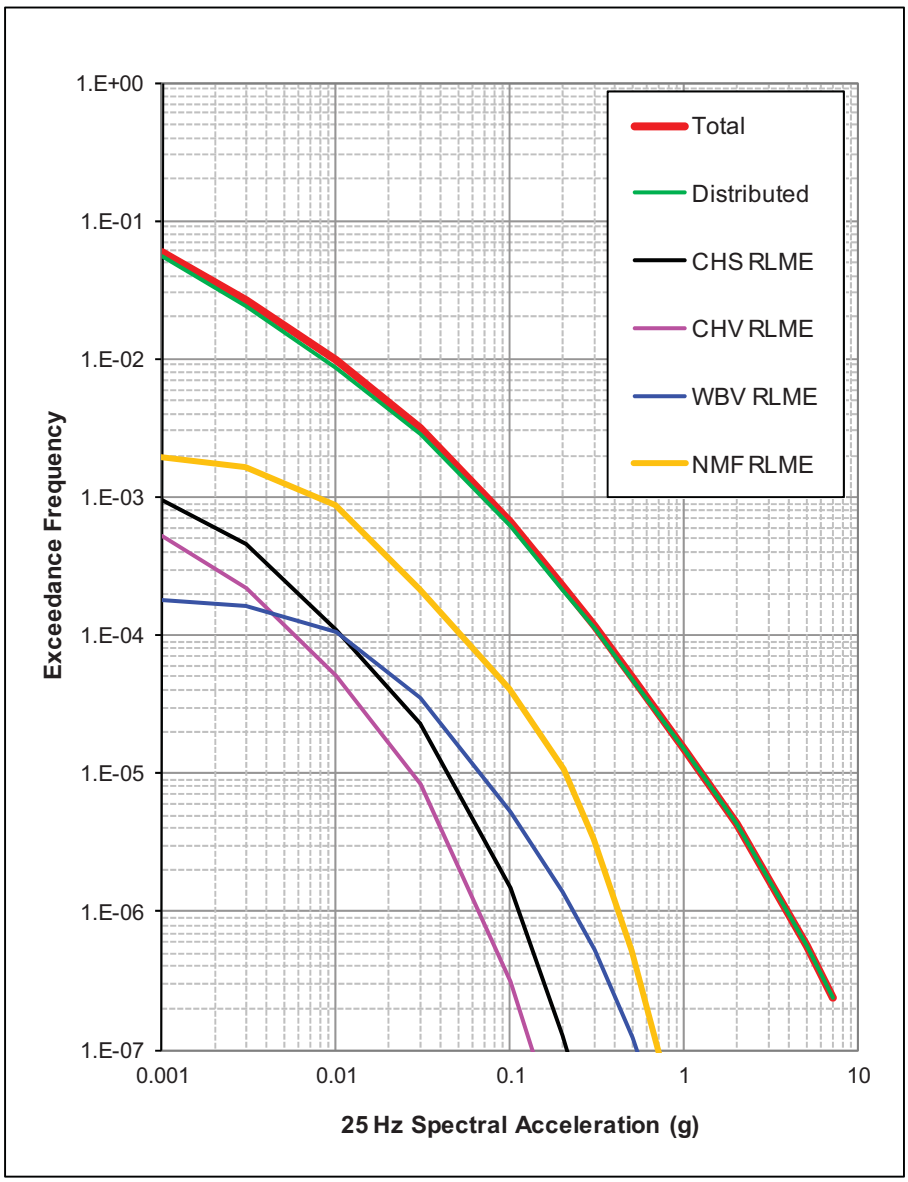


Figure 2.5.2-255 Contribution of CEUS SSC Model Sources to the Total Mean Hazard for Peak Ground Acceleration (100 Hz Spectral Acceleration) [EF3 COL 2.0-27-A]

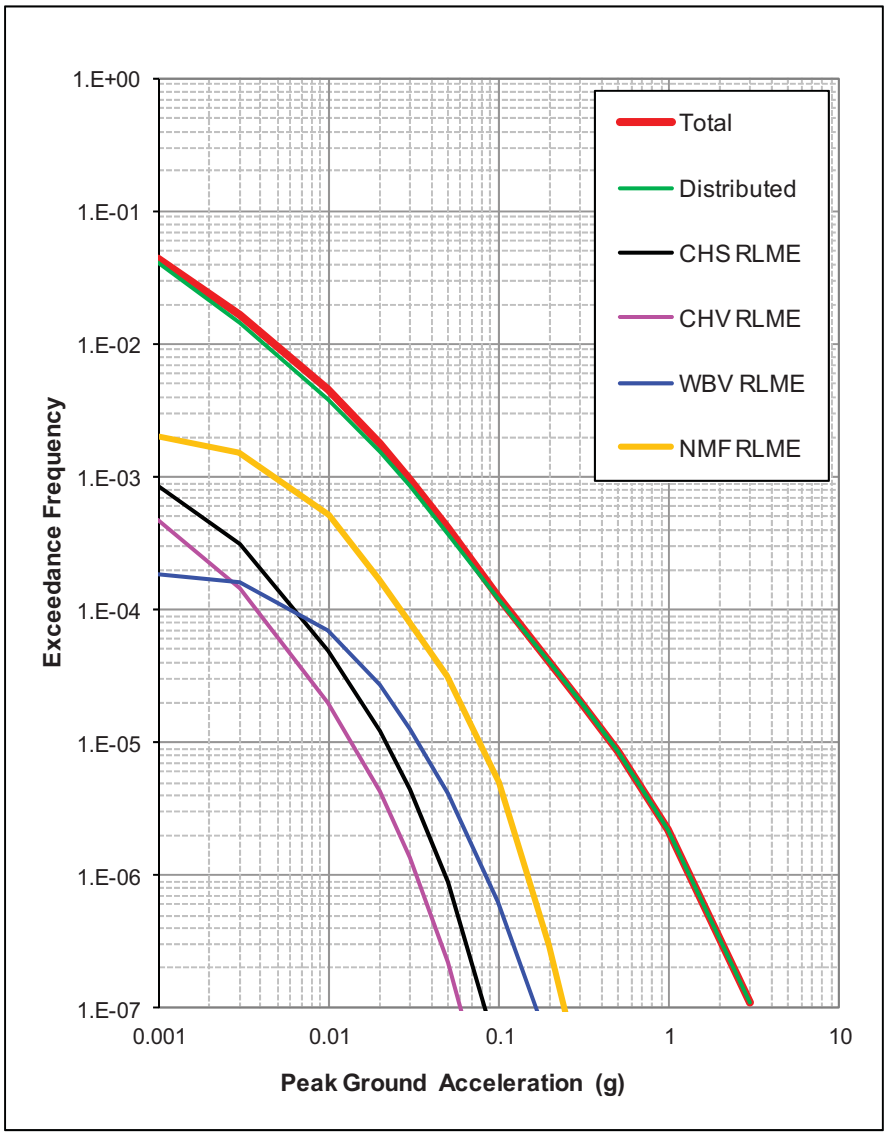


Figure 2.5.2-256 Uniform Hazard Response Spectra for the Fermi 3 Site and Generic Hard Rock Conditions Based on the CEUS SSC Model [EF3 COL 2.0-27-A]

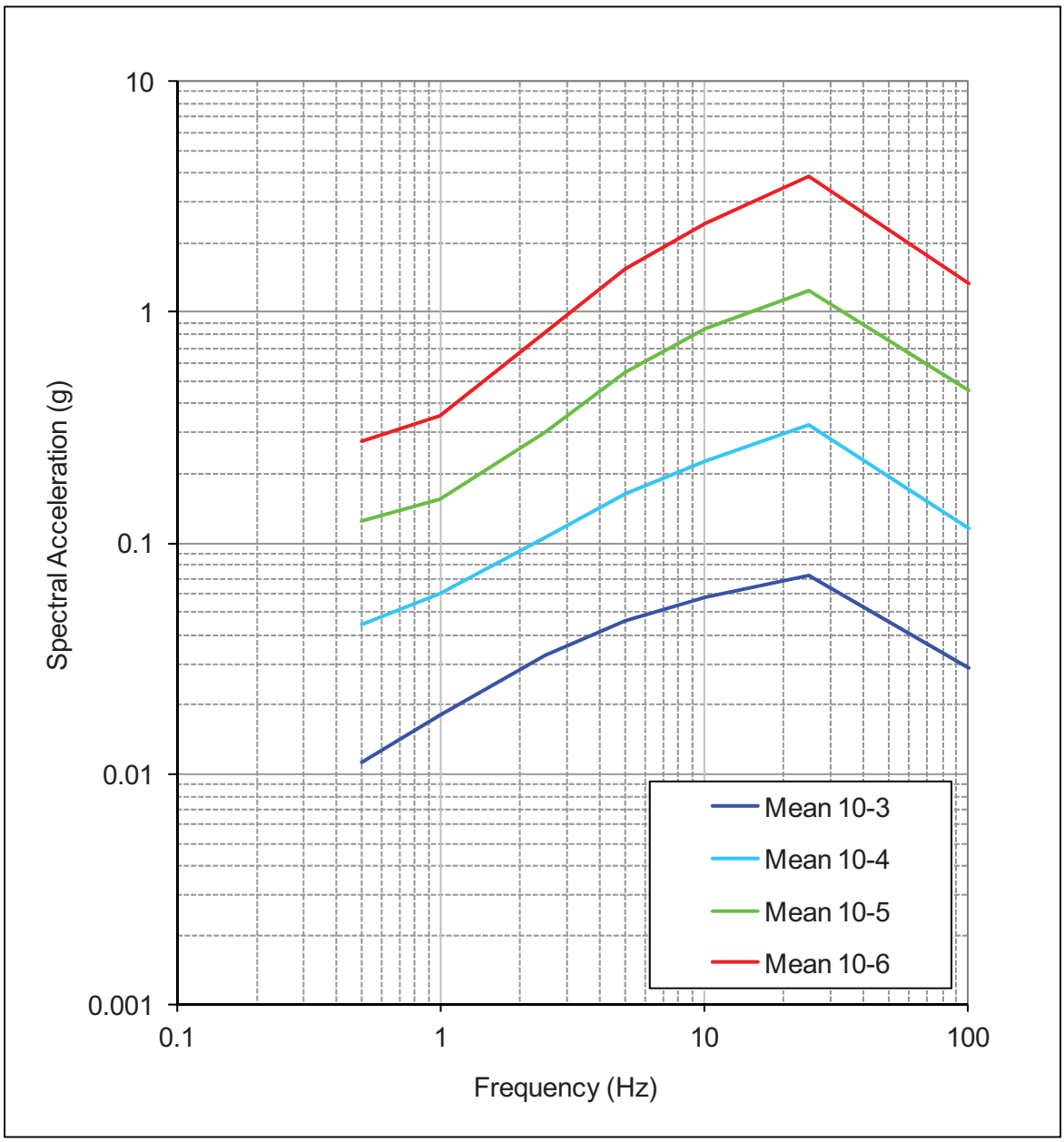
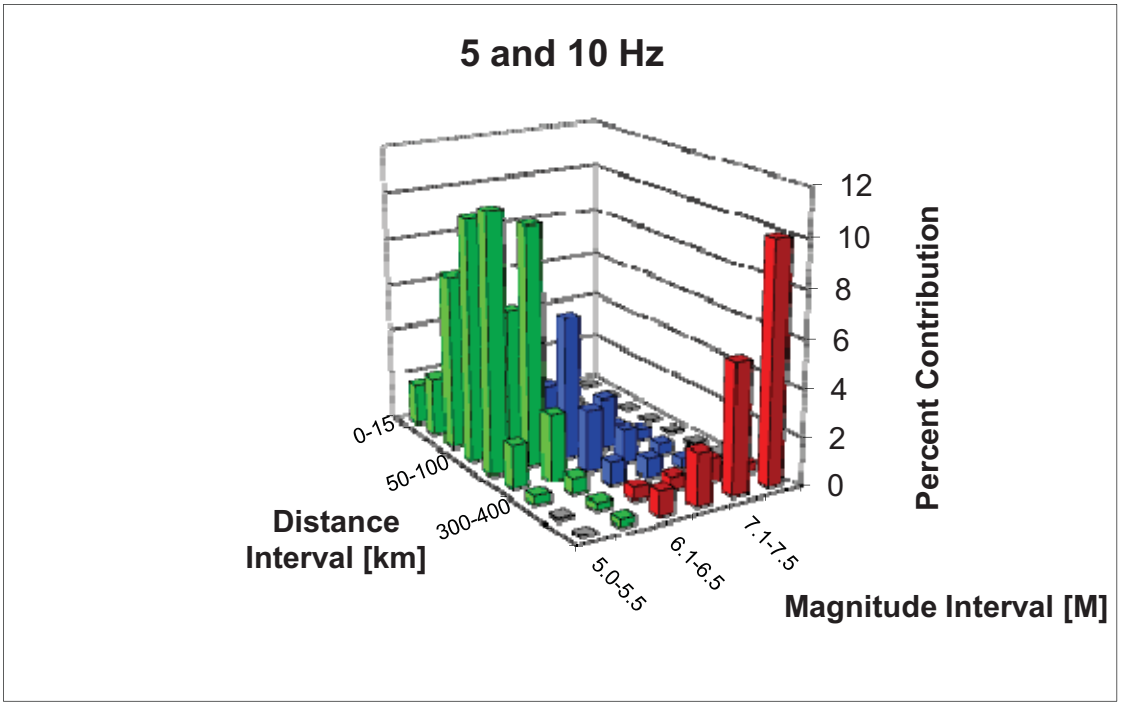


Figure 2.5.2-257 Deaggregation of Mean 10^{-3} Hazard

[EF3 COL 2.0-27-A]



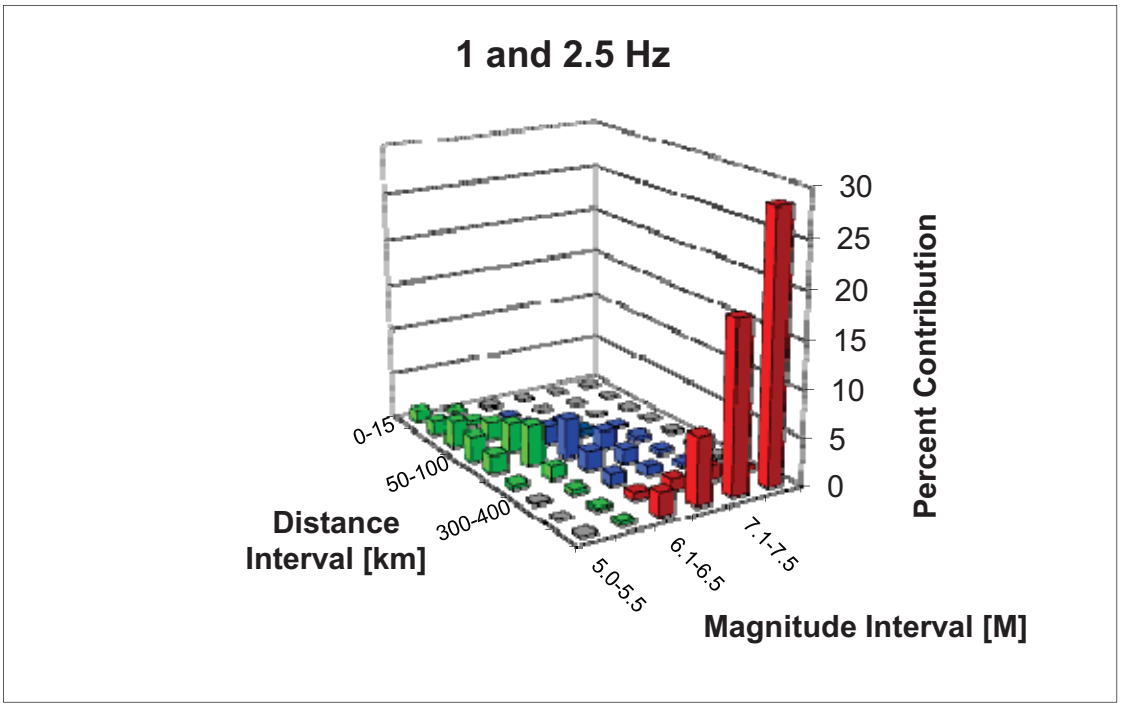
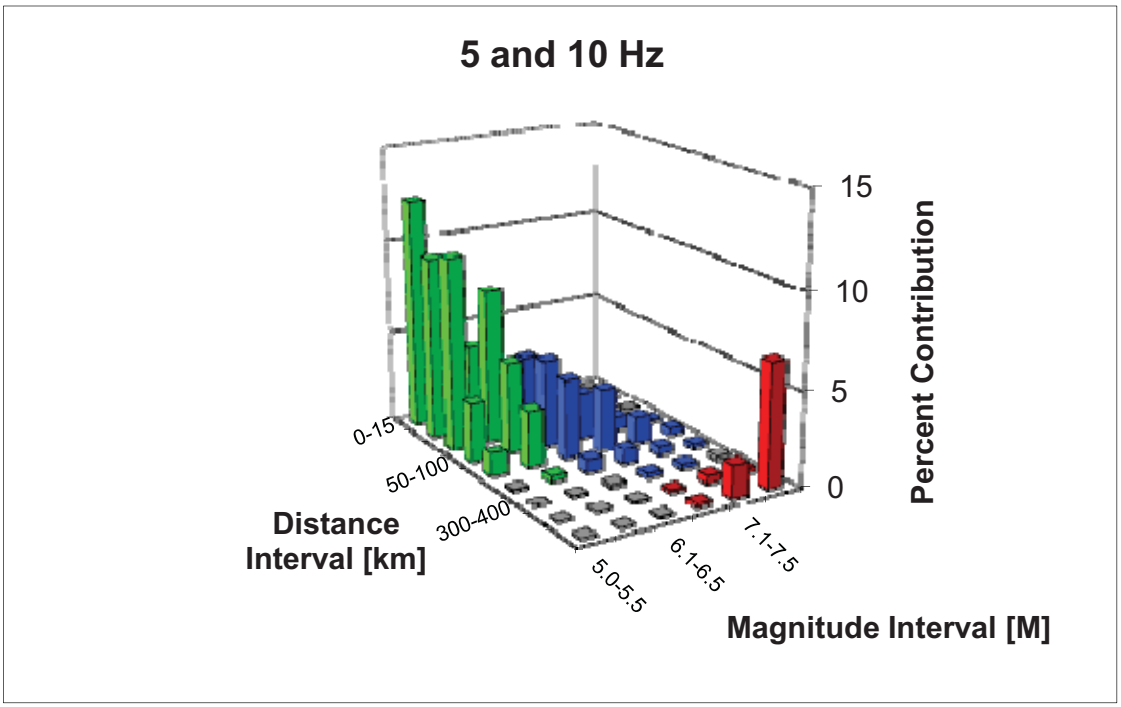


Figure 2.5.2-258 Deaggregation of Mean 10^{-4} Hazard

[EF3 COL 2.0-27-A]



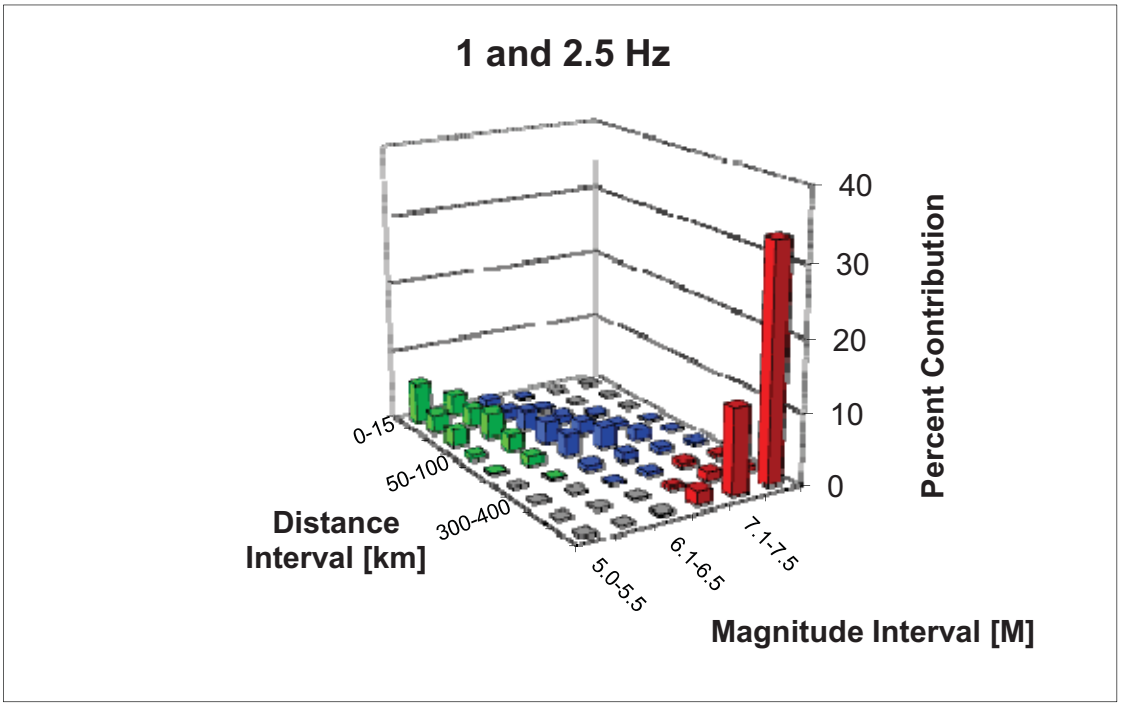
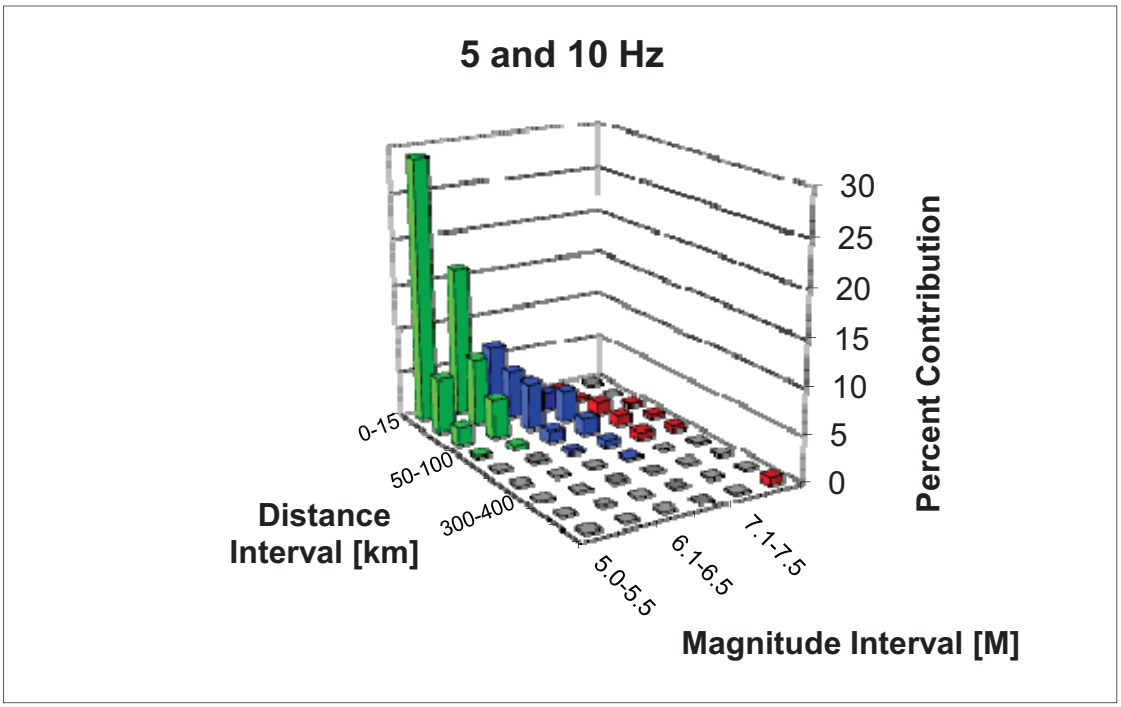


Figure 2.5.2-259 Deaggregation of Mean 10^{-5} Hazard

[EF3 COL 2.0-27-A]



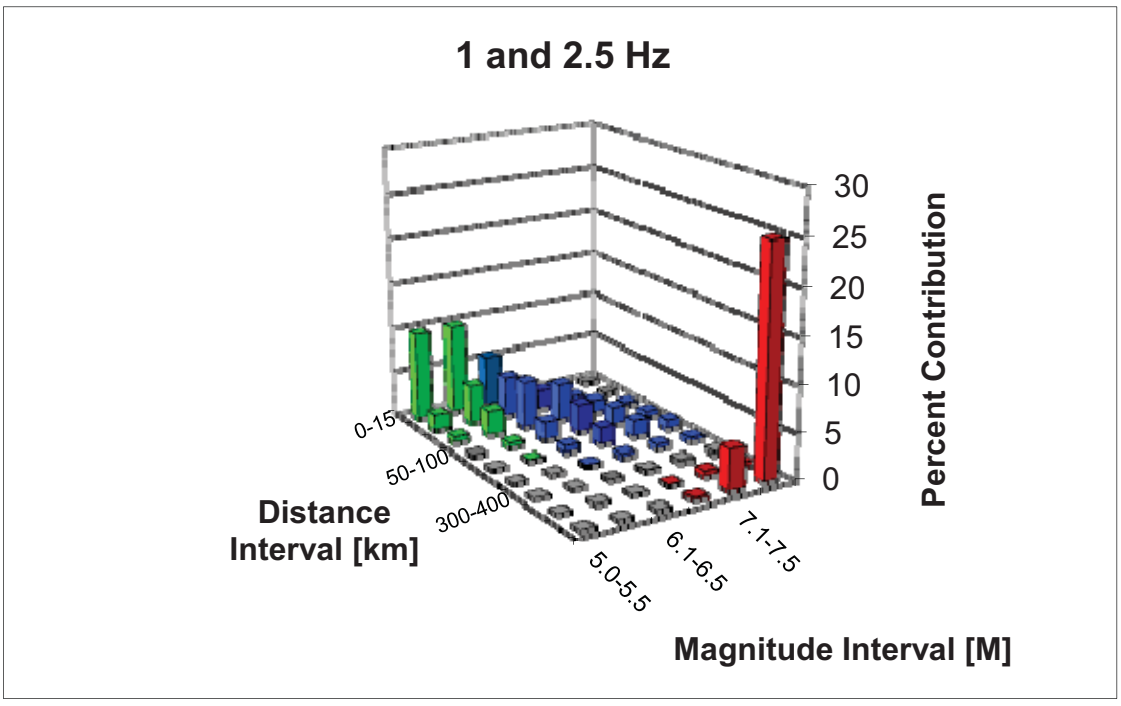
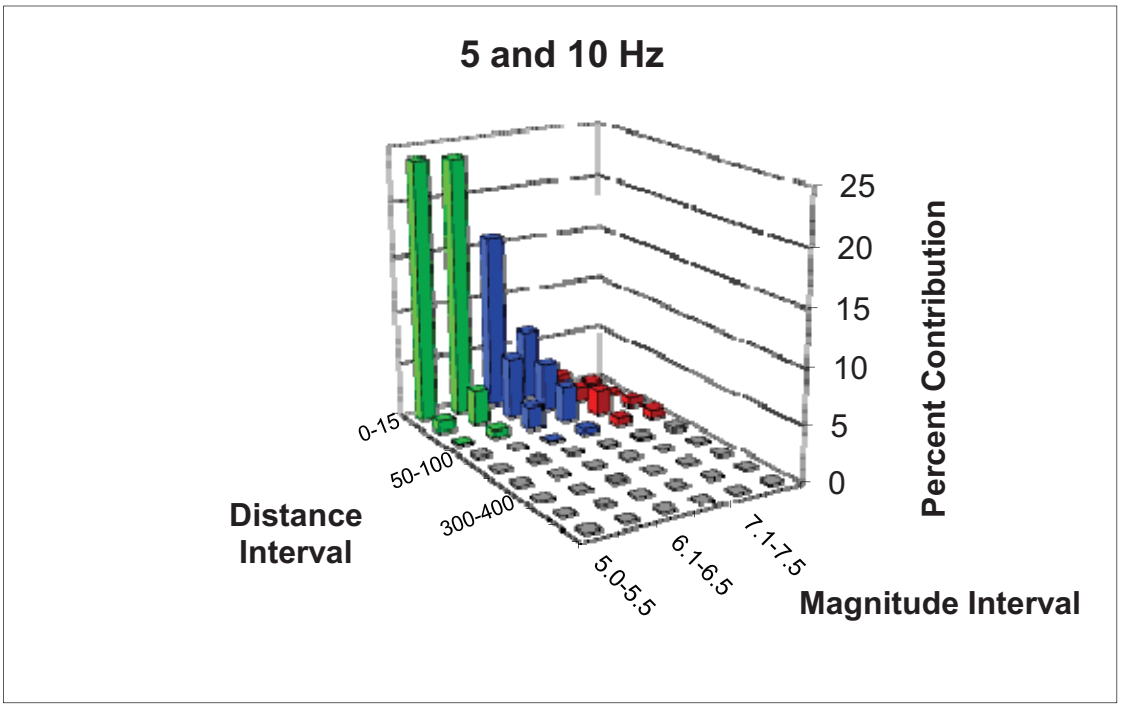


Figure 2.5.2-260 Deaggregation of Mean 10^{-6} Hazard

[EF3 COL 2.0-27-A]



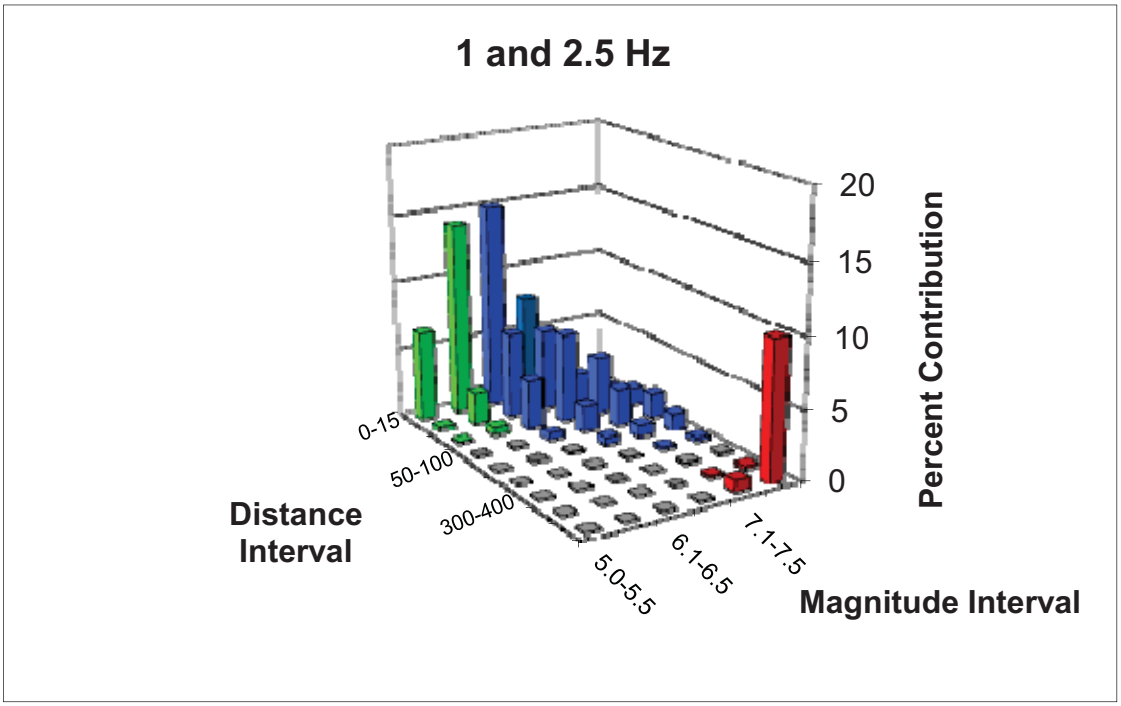


Figure 2.5.2-261 Extension of Response Spectra to 0.1 Hz

[EF3 COL 2.0-27-A]

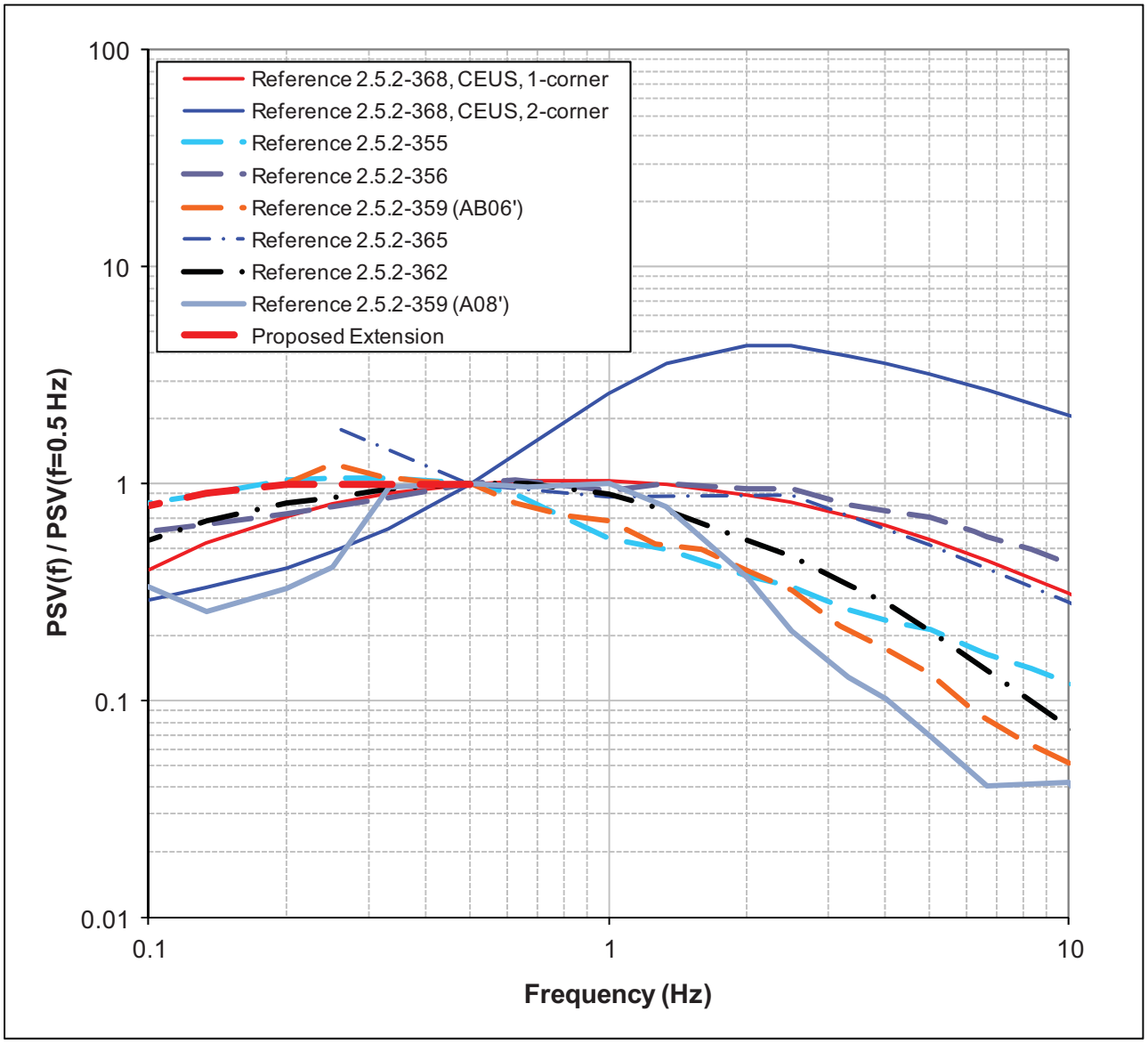
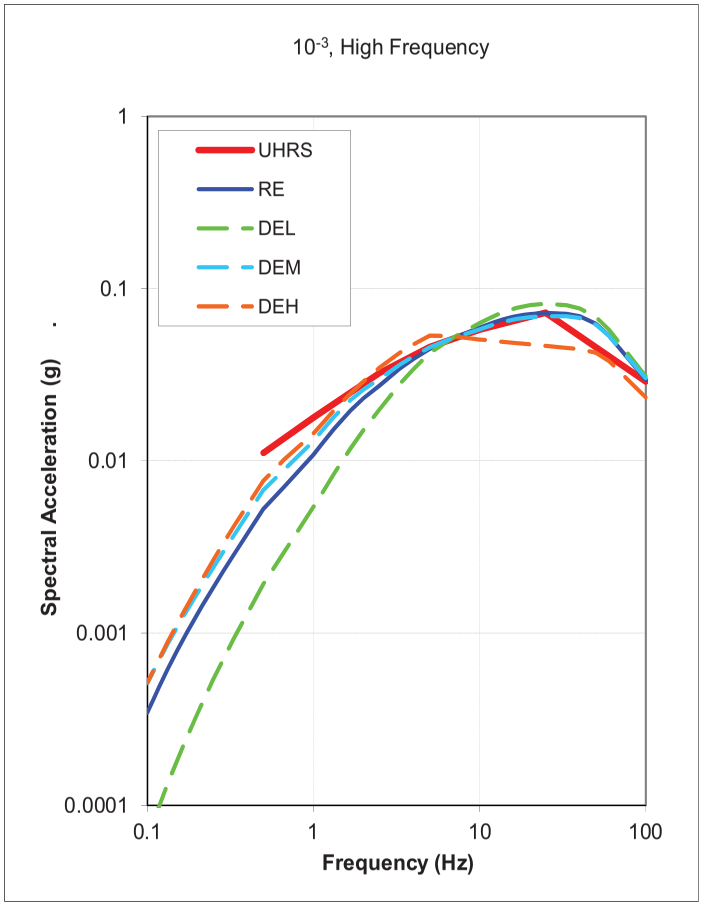


Figure 2.5.2-262 Mean 10^{-3} UHRS, RE, and DE Spectra

[EF3 COL 2.0-27-A]



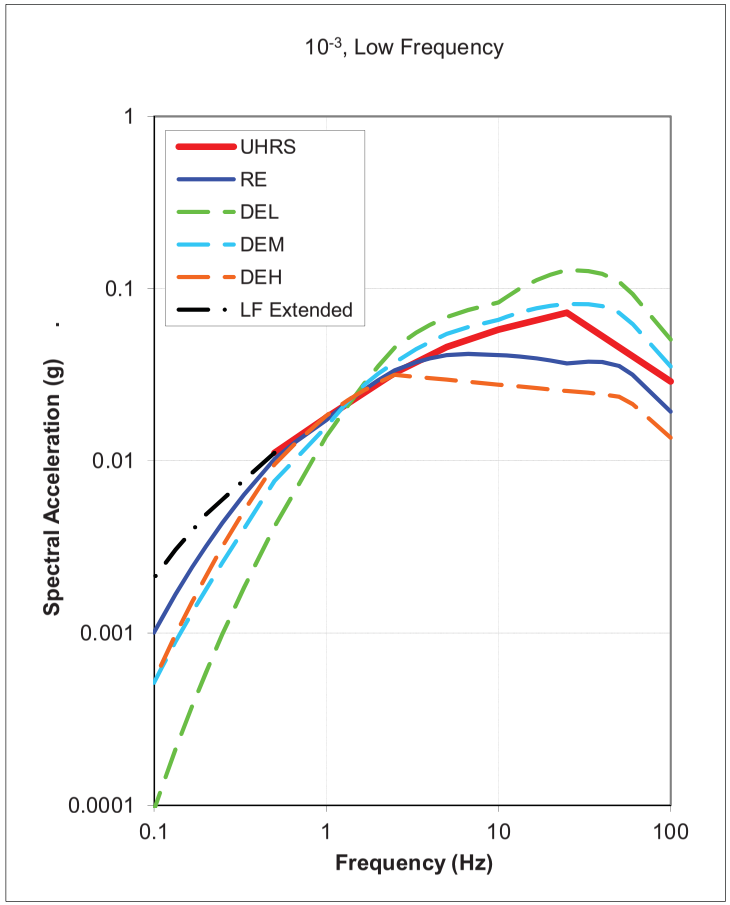
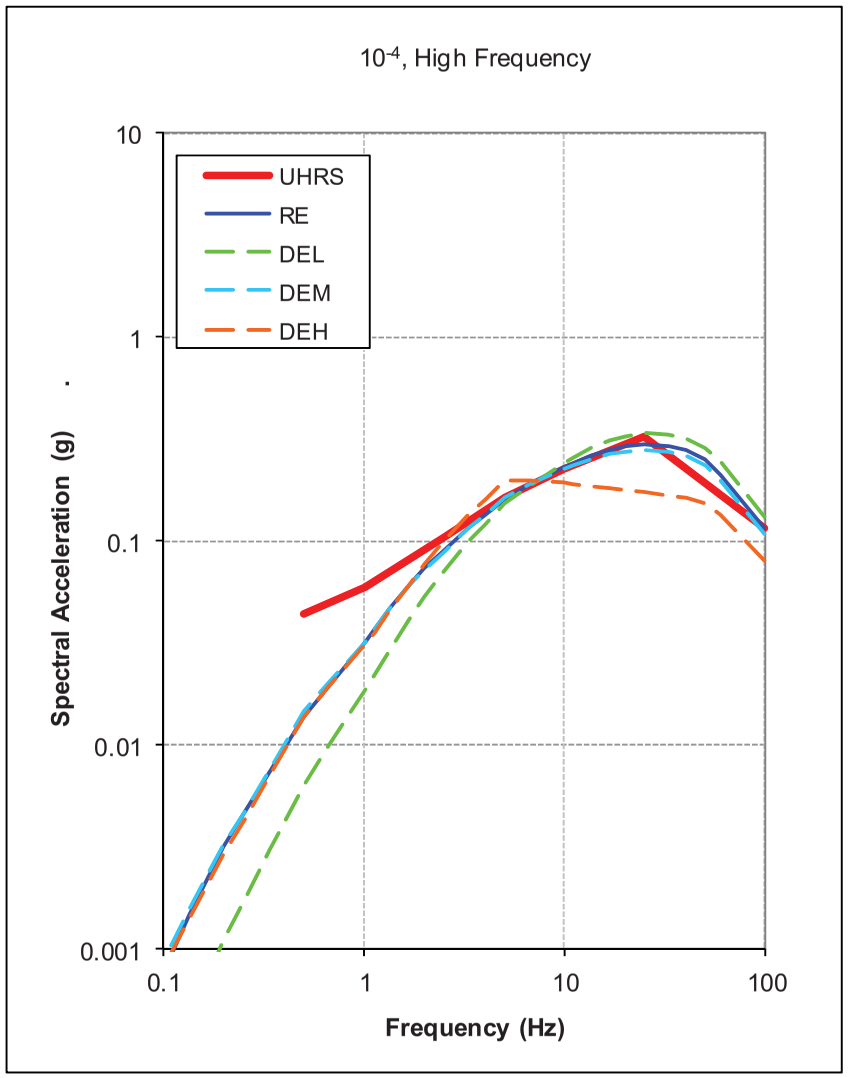


Figure 2.5.2-263 Mean 10^{-4} UHRS, RE, and DE Spectra

[EF3 COL 2.0-27-A]



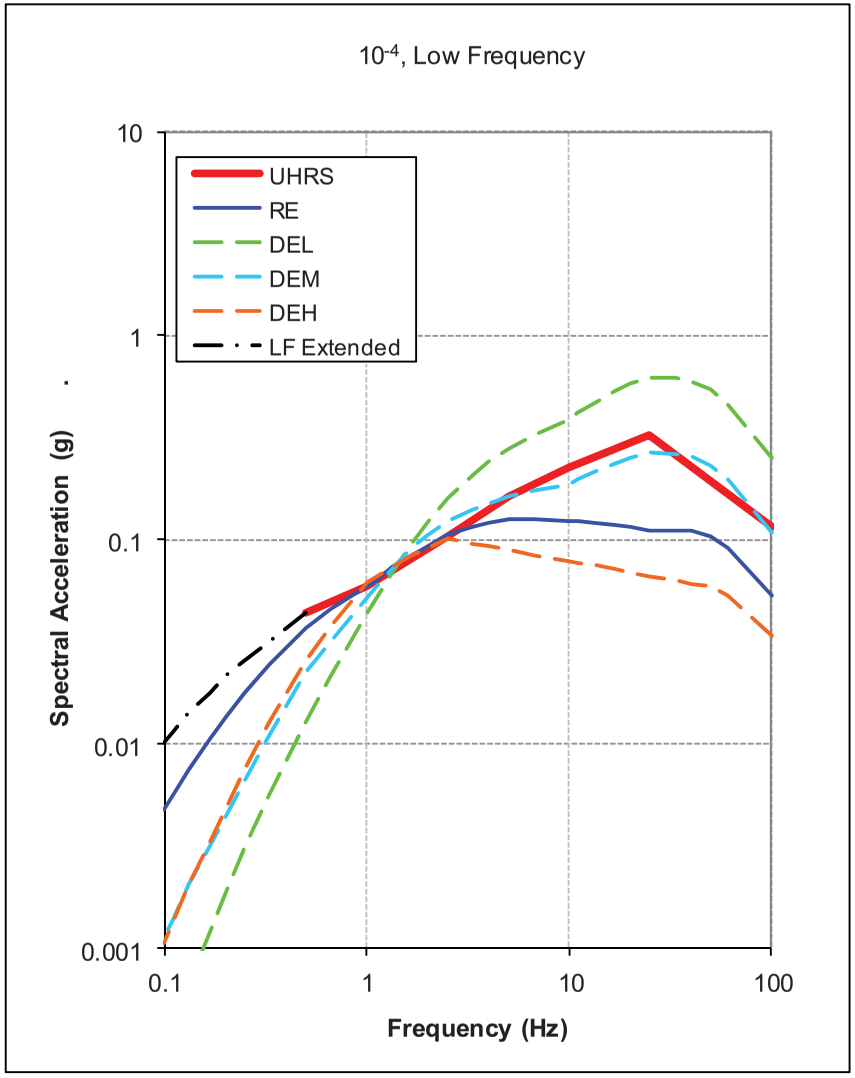
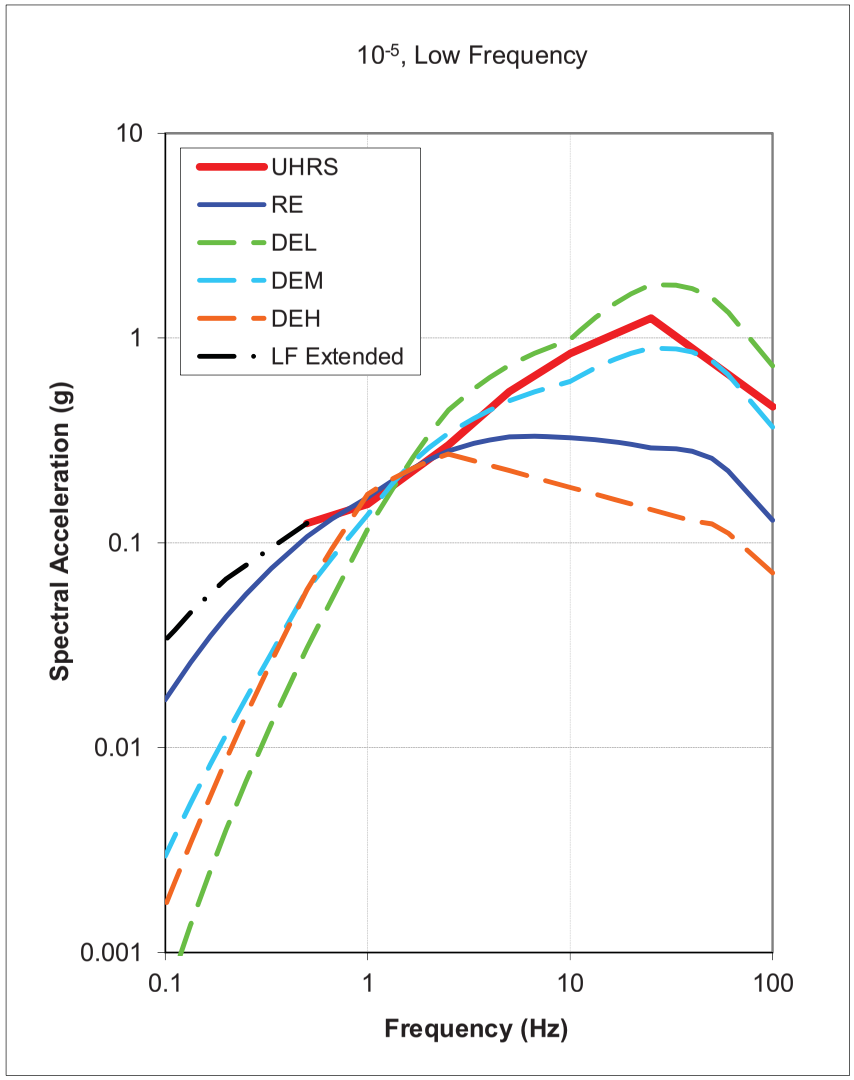


Figure 2.5.2-264 Mean 10^{-5} UHRS, RE, and DE Spectra

[EF3 COL 2.0-27-A]



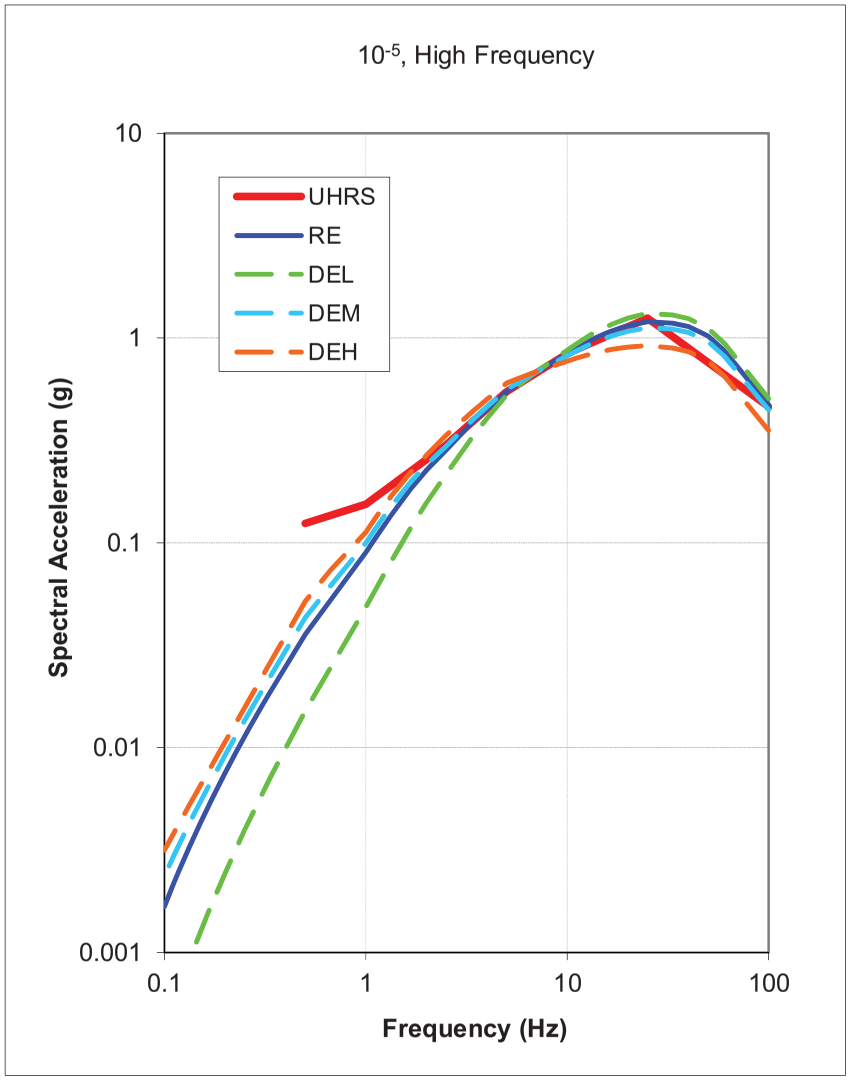
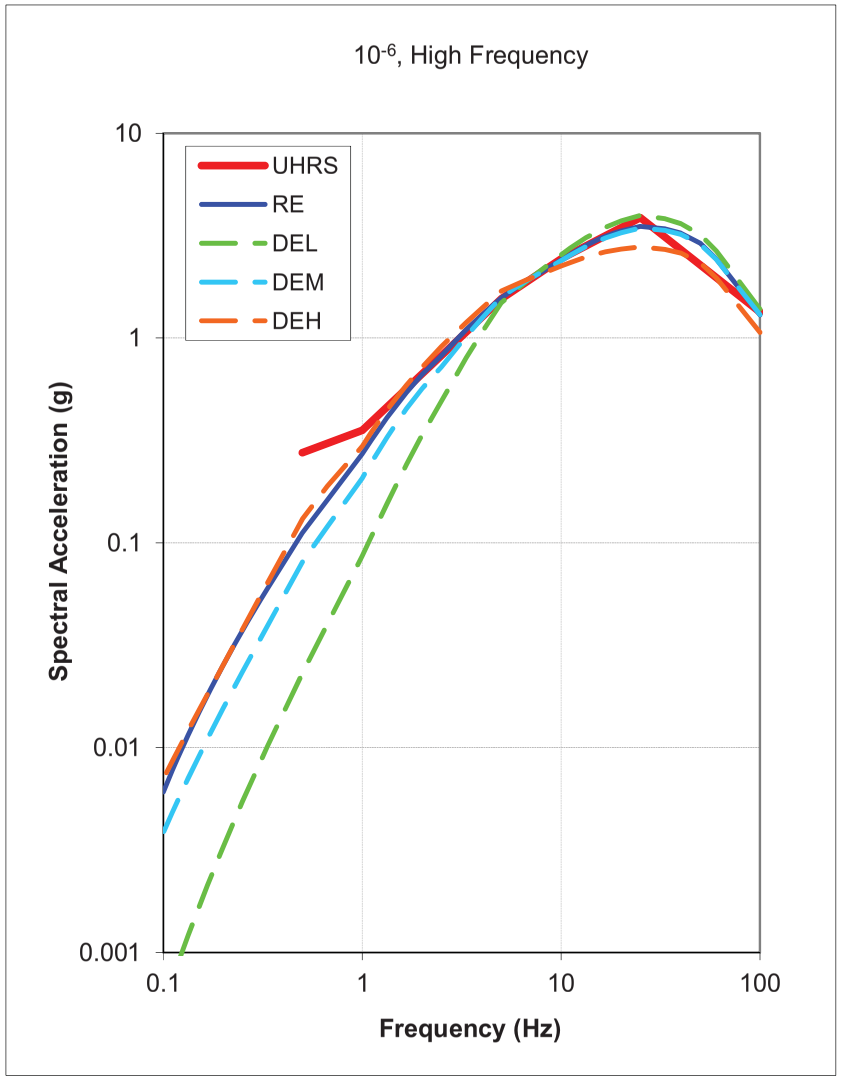


Figure 2.5.2-265 Mean 10^{-6} UHRS, RE, and DE Spectra

[EF3 COL 2.0-27-A]



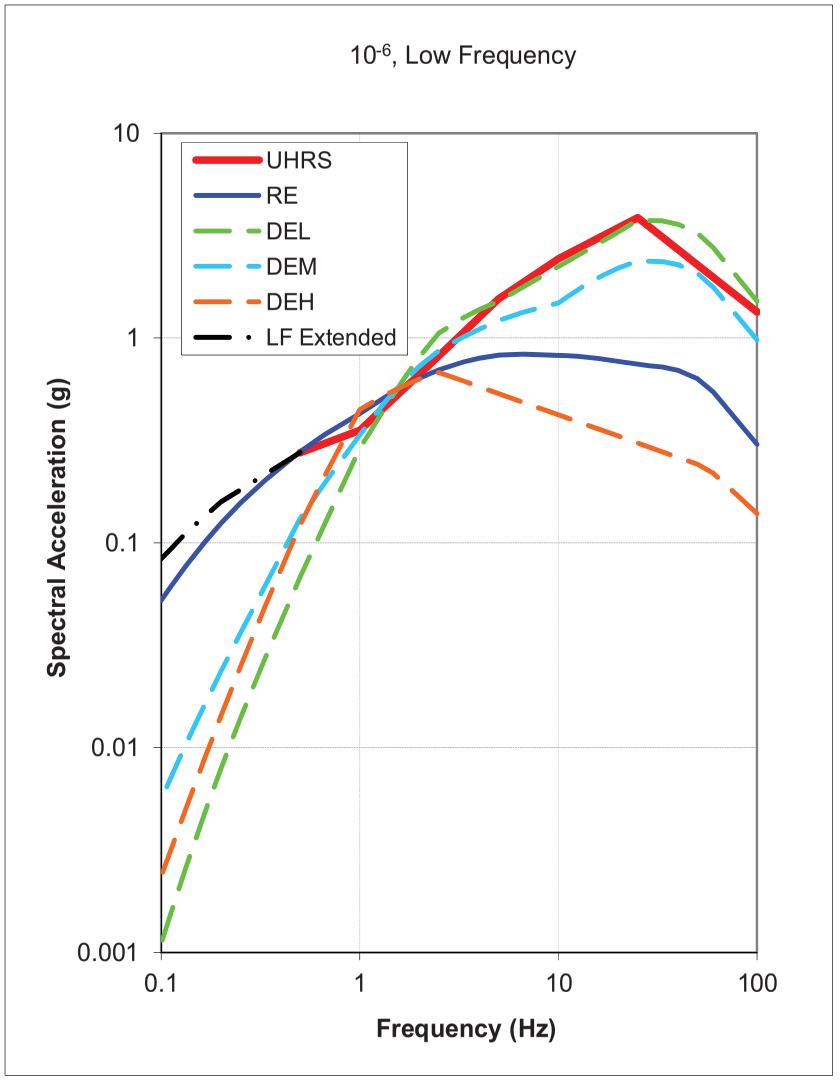
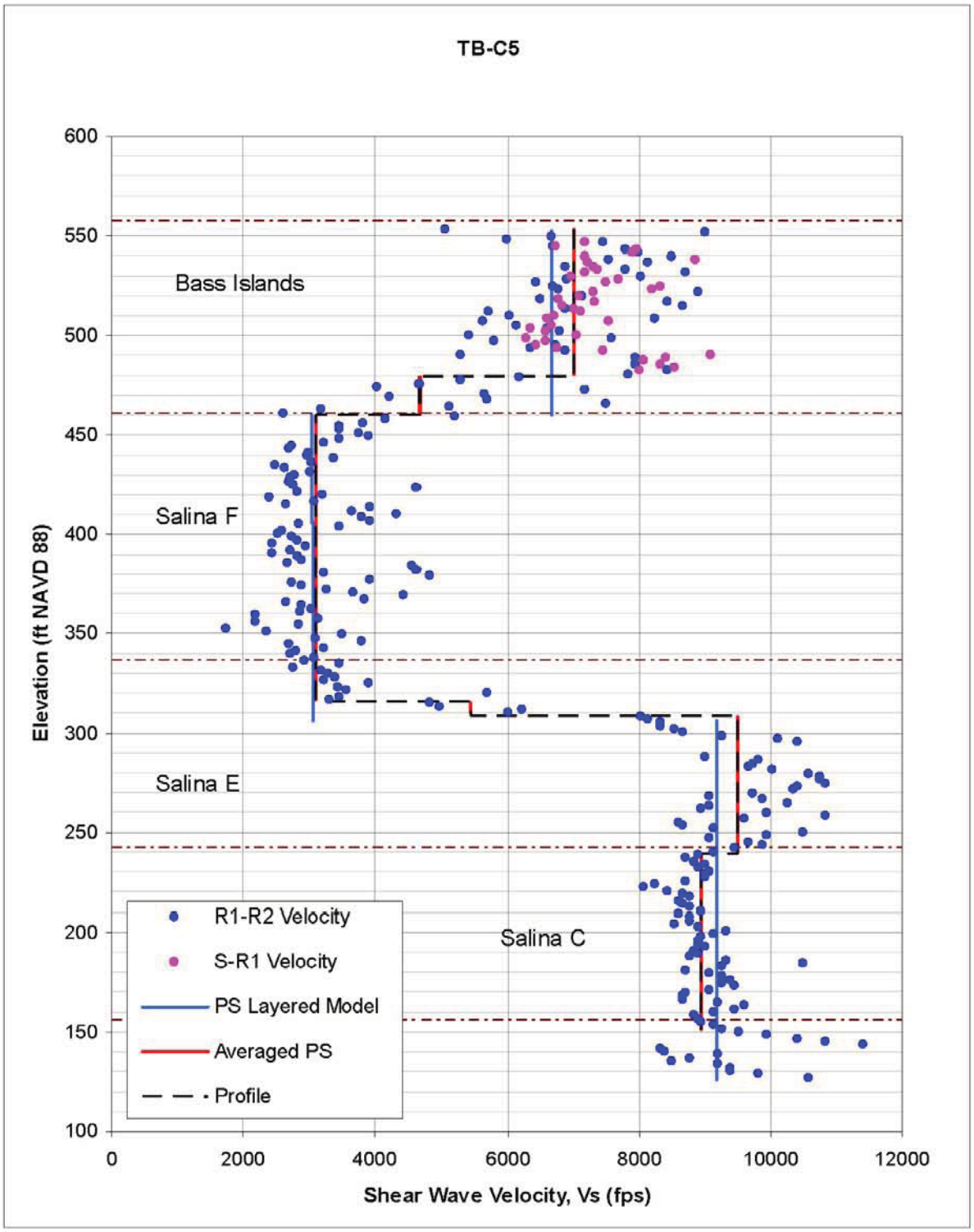


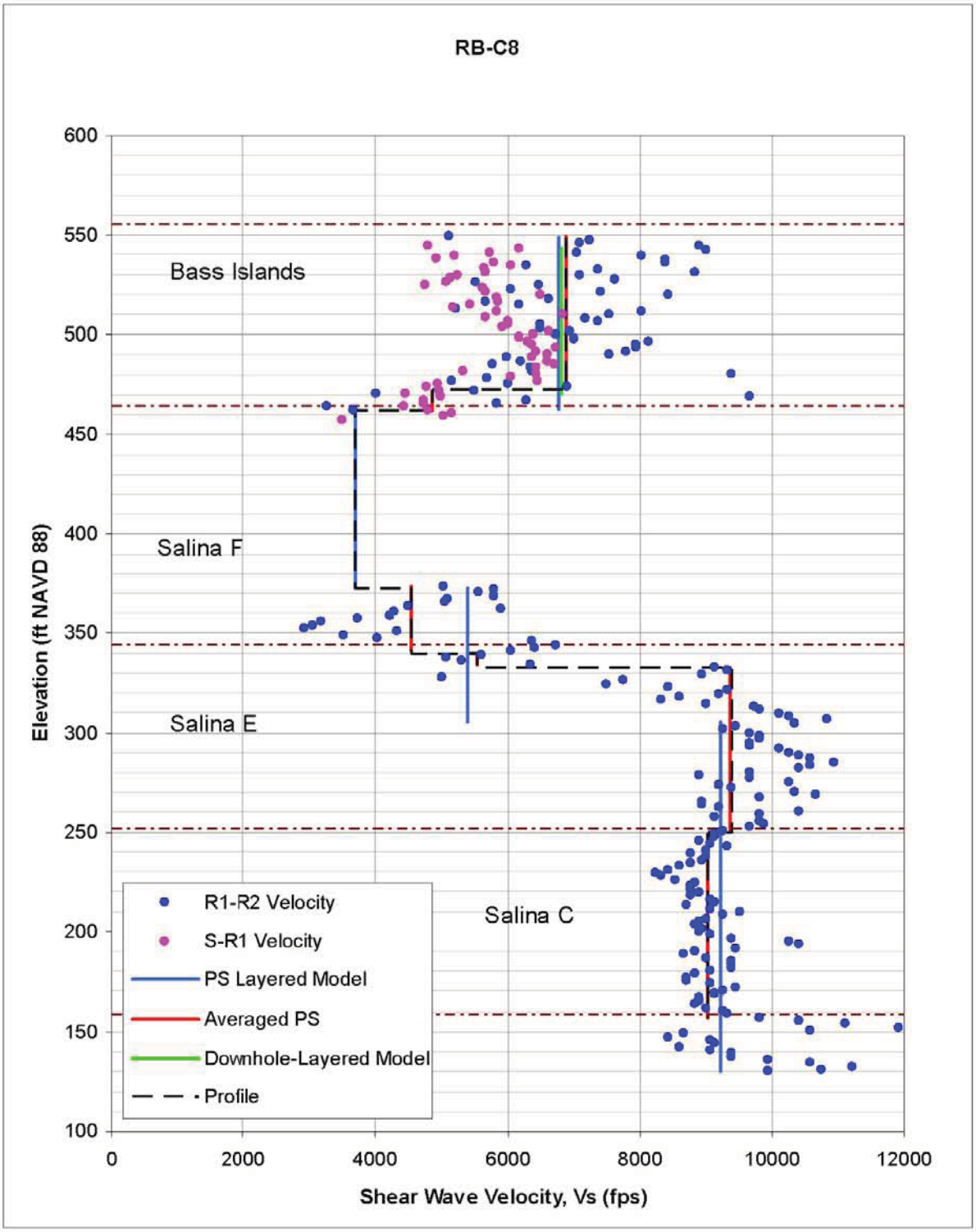
Figure 2.5.2-266 Shear Wave Velocity Data for Boring TB-C5

[EF3 COL 2.0-27-A]



2.5.2-267 Shear Wave Velocity Data for Boring RB-C8

[EF3 COL 2.0-27-A]



2.5.2-268 Shear Wave Velocity Data for Boring CB-C3

[EF3 COL 2.0-27-A]

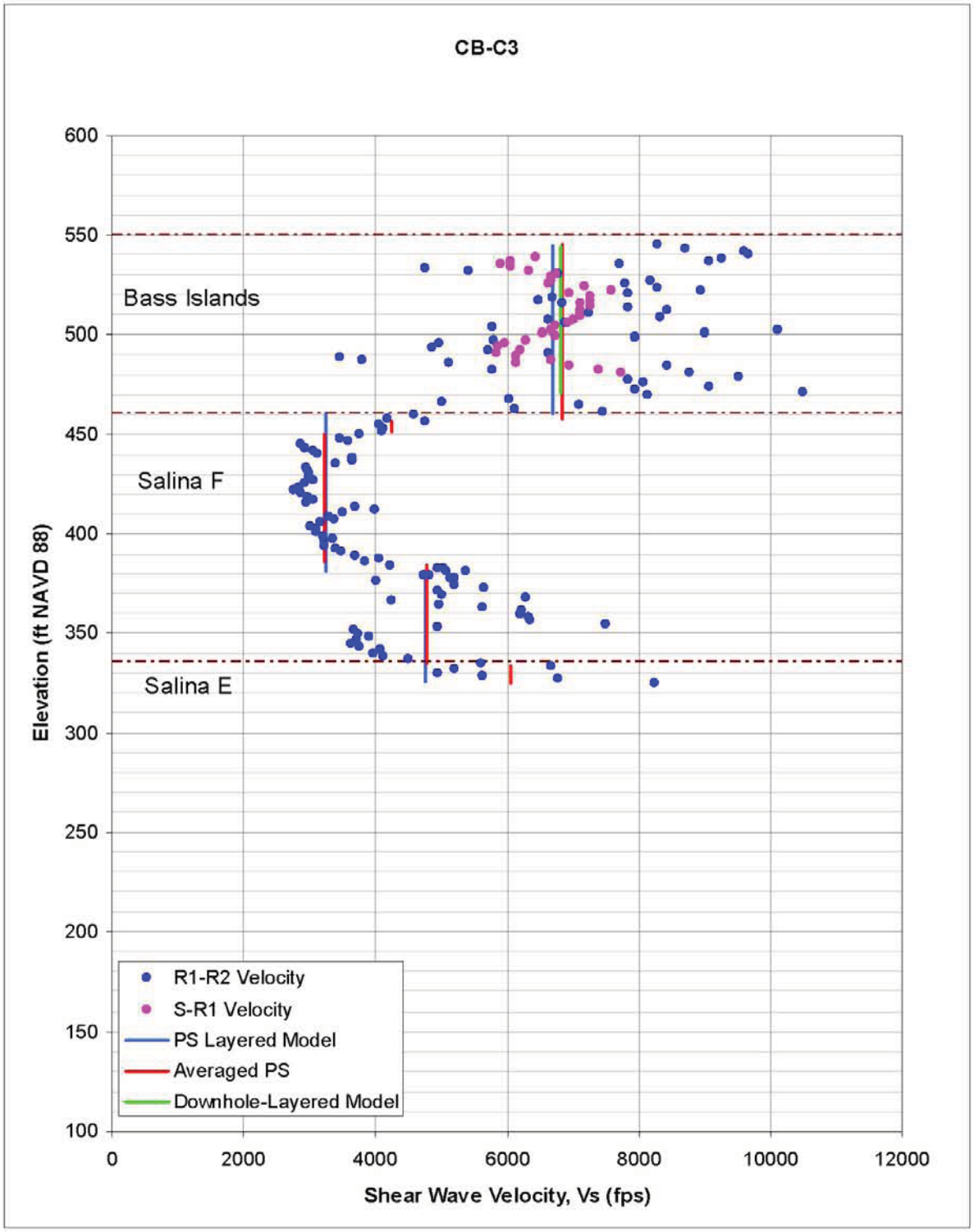
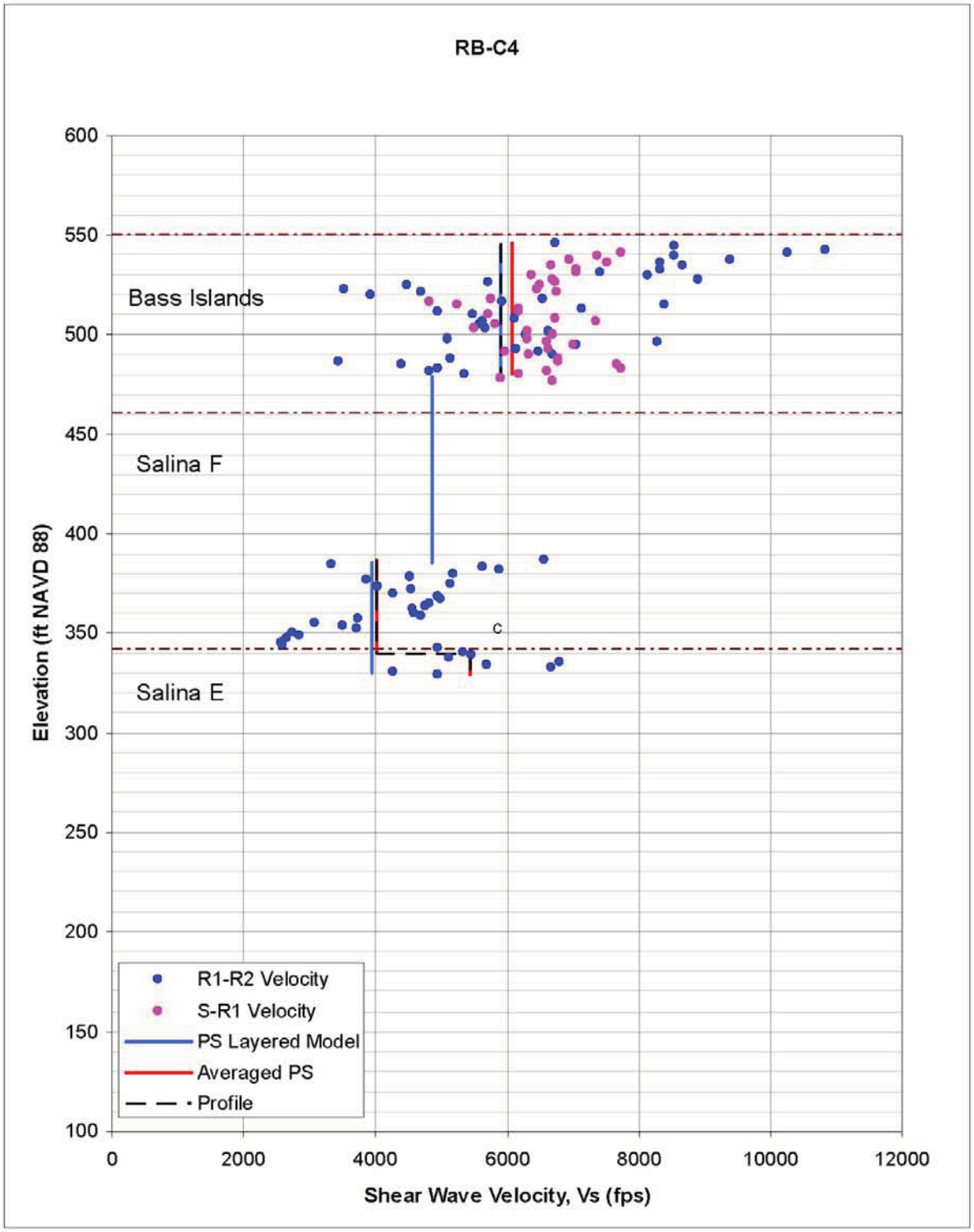


Figure 2.5.2-269 Shear Wave Velocity Data for Boring RB-C4

[EF3 COL 2.0-27-A]



2.5.2-270 Geometric Mean Velocity Profile for Fermi 3 Site GMRS Profile

[EF3 COL 2.0-27-A]

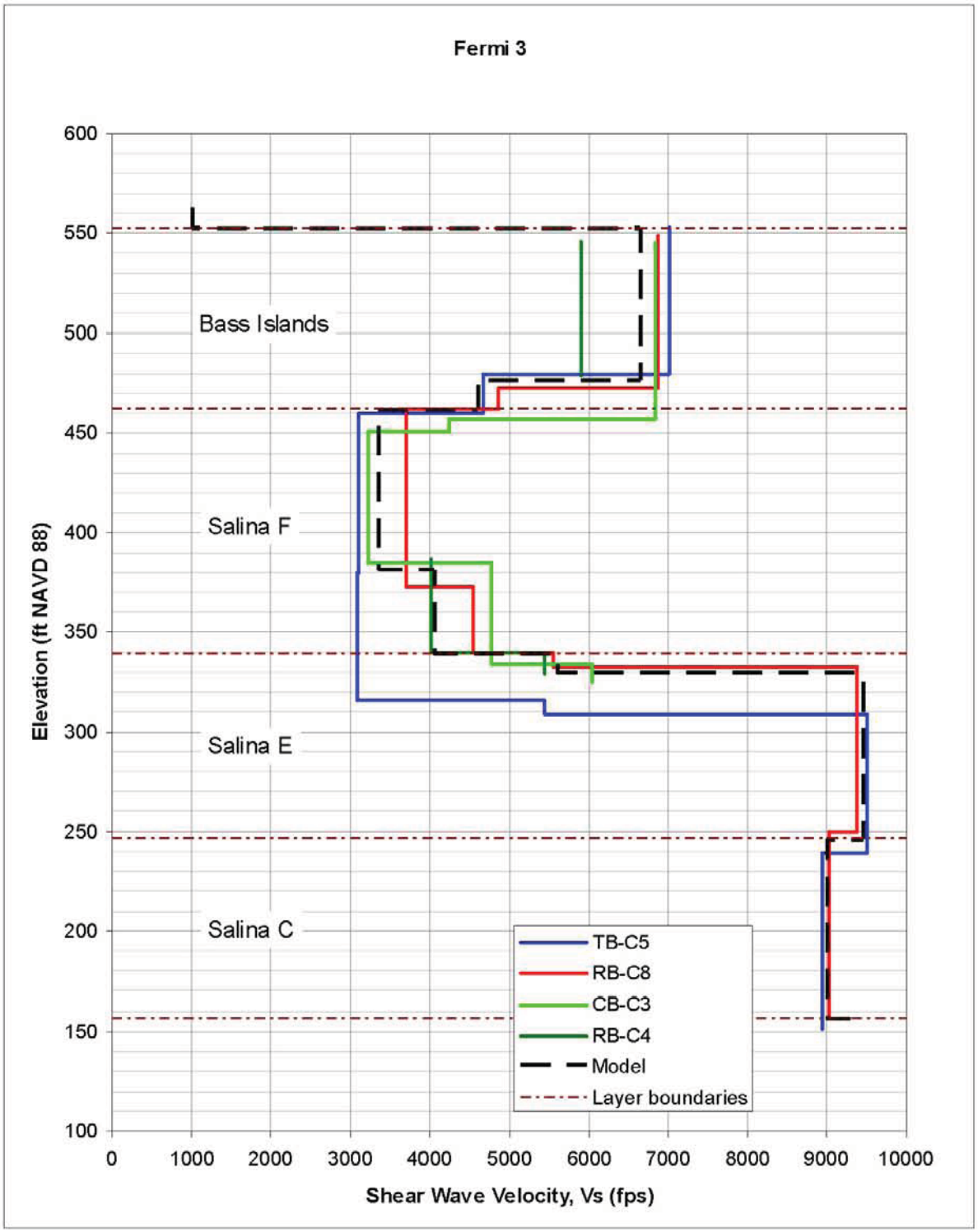


Figure 2.5.2-271 Estimation of Scattering κ

[EF3 COL 2.0-27-A]

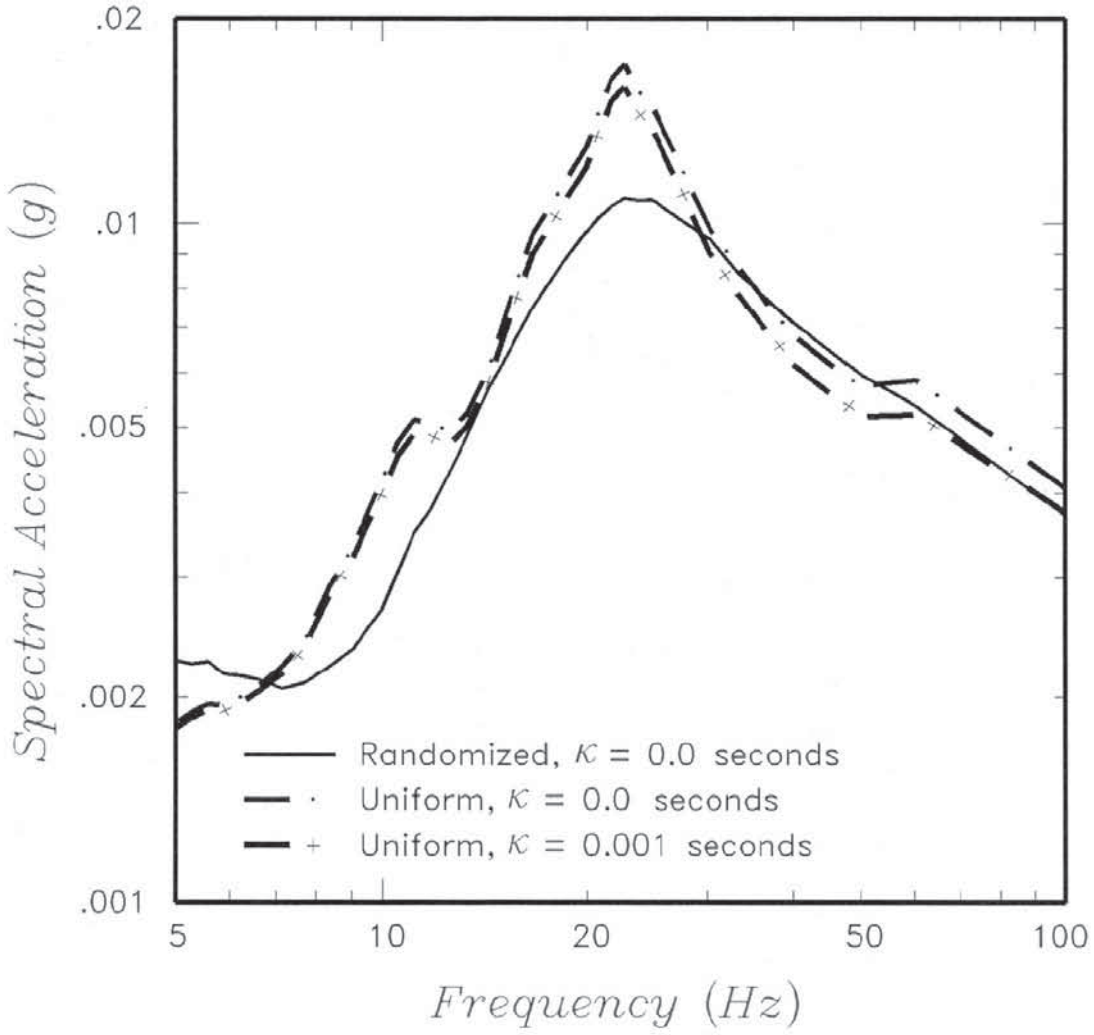


Figure 2.5.2-272 Randomized Shear-Wave-Velocity Profiles 1 to 30

[EF3 COL 2.0-27-A]

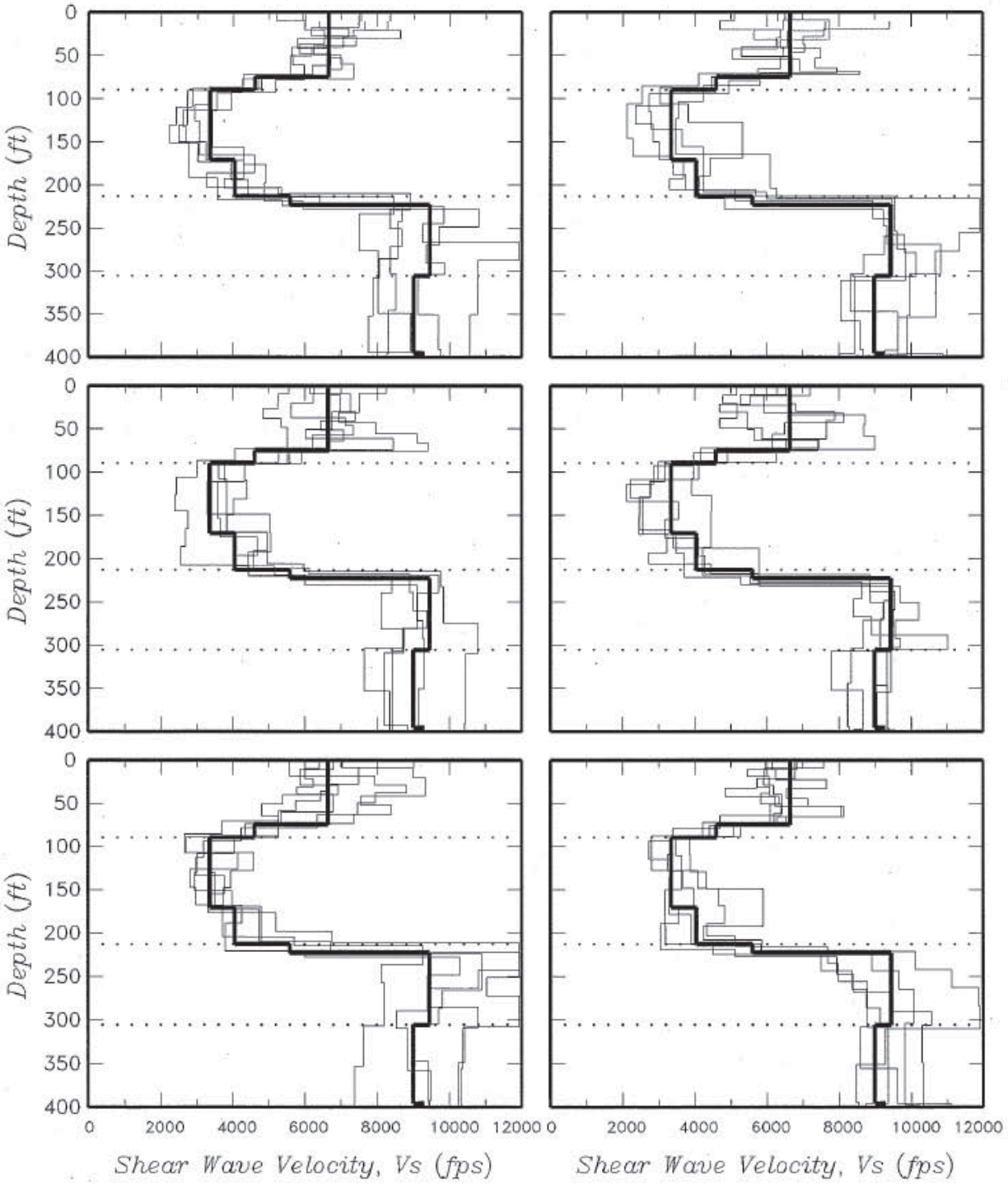


Figure 2.5.2-273 Randomized Shear-Wave-Velocity Profiles 31 to 60

[EF3 COL 2.0-27-A]

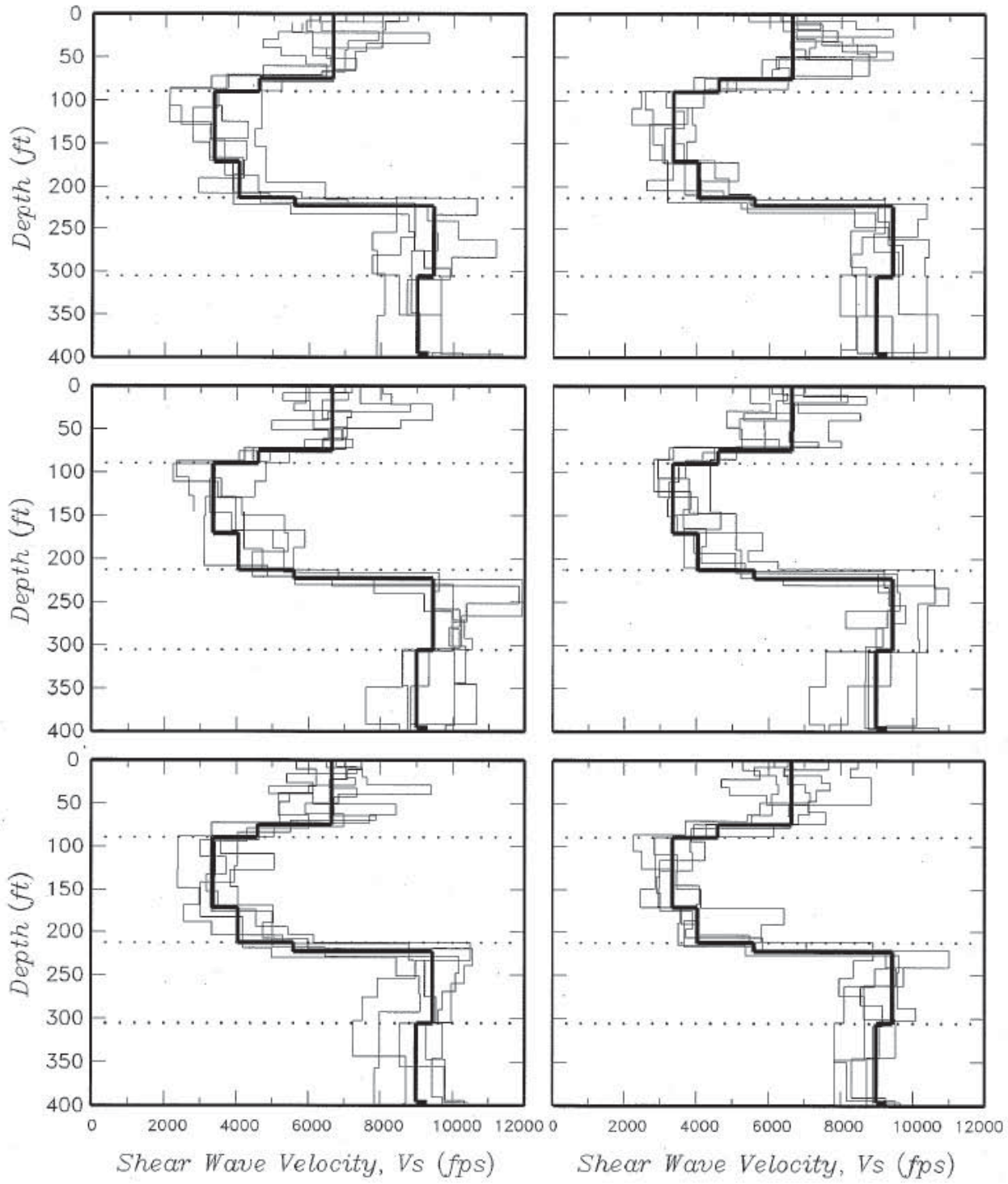


Figure 2.5.2-274 Statistics of Randomized Shear Wave Velocity Profiles

[EF3 COL 2.0-27-A]

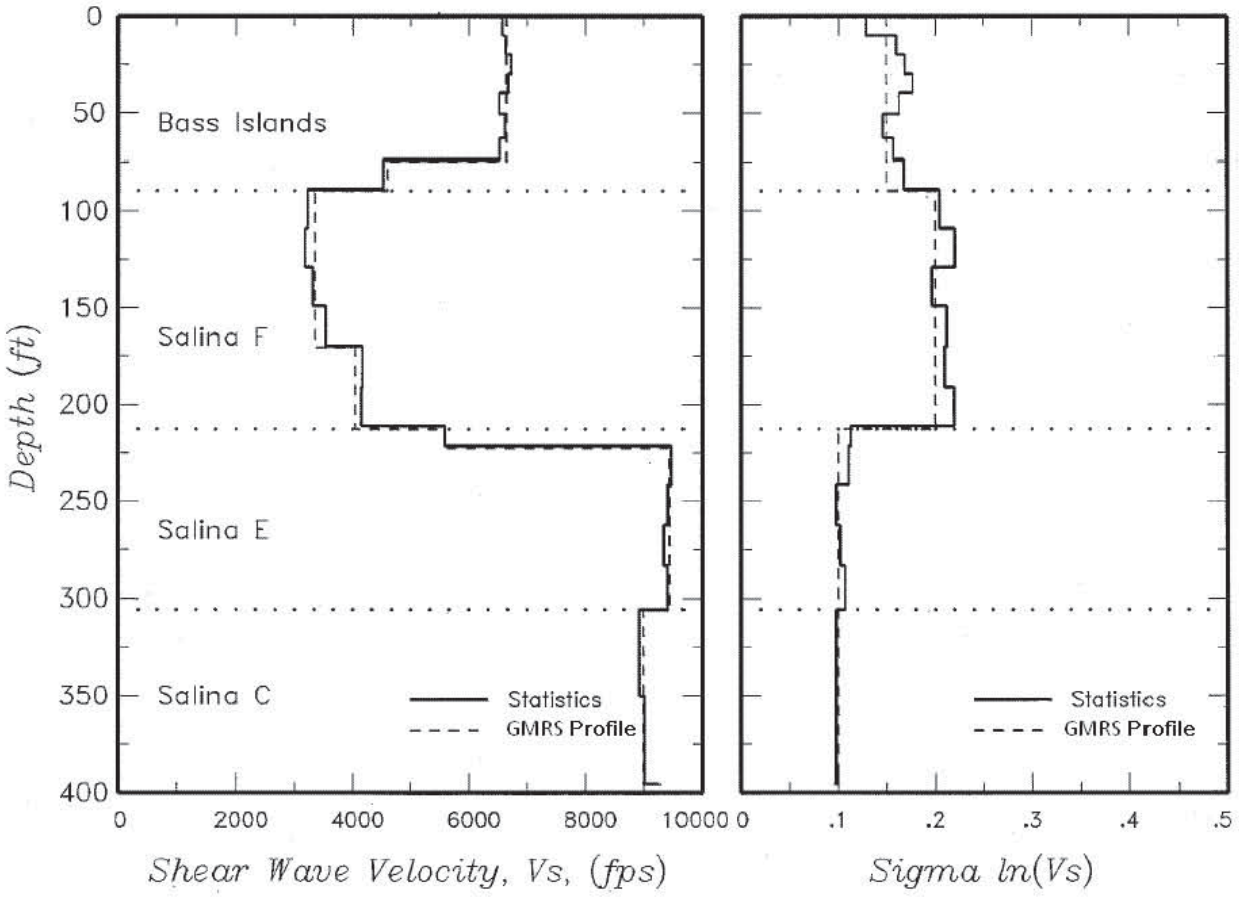


Figure 2.5.2-275 Example Response Spectra of Time Histories Used for Site Response Analyses [EF3 COL 2.0-27-A]

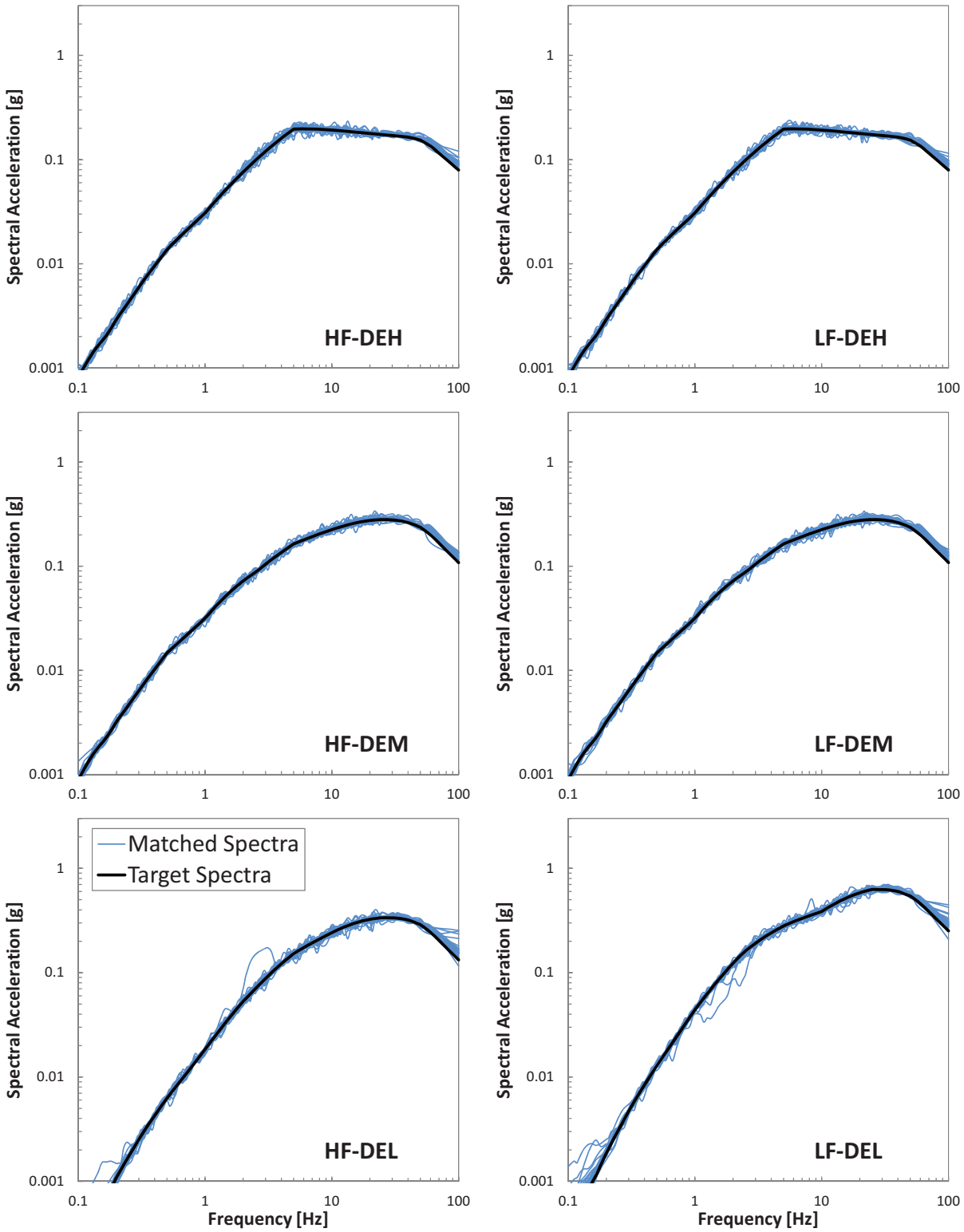


Figure 2.5.2-276 Site Response Logic Tree

[EF3 COL 2.0-27-A]

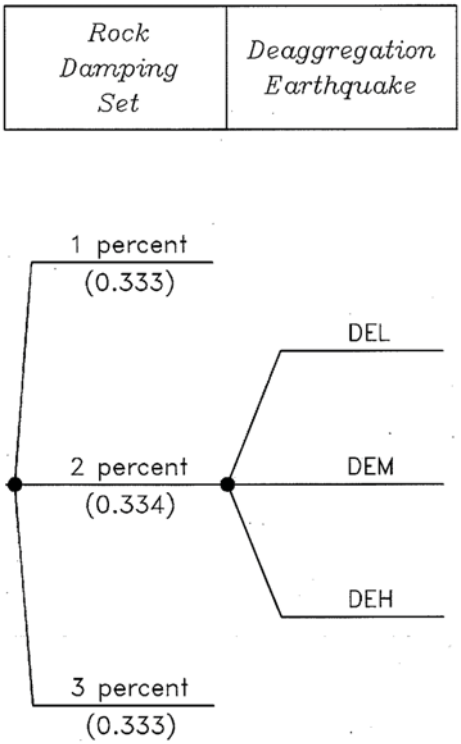
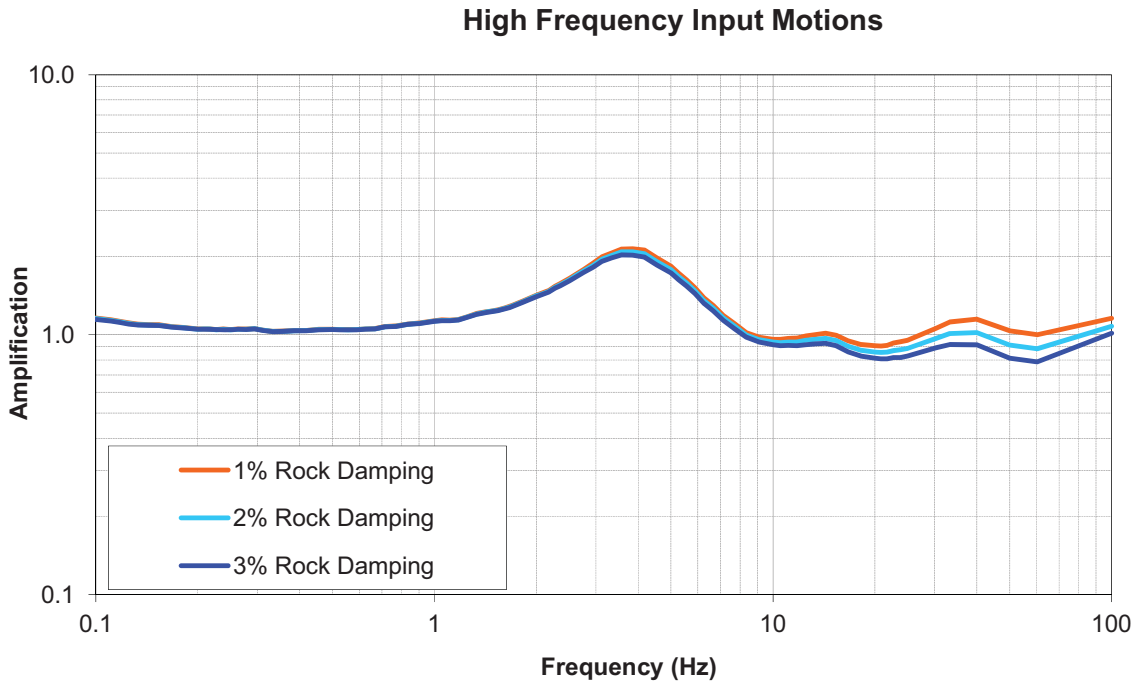


Figure 2.5.2-277 Sensitivity of GMRS Profile Mean Site Amplification to Damping Assigned to Rock Layers at 10^{-4} Level of Exceedance [EF3 COL 2.0-27-A]



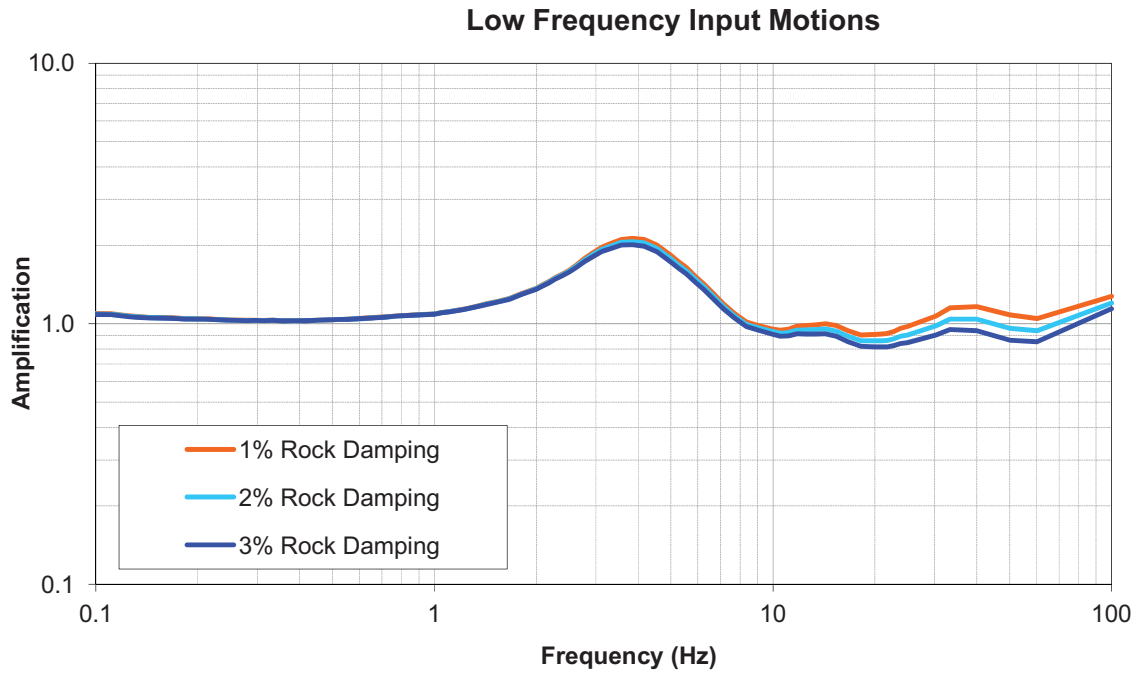
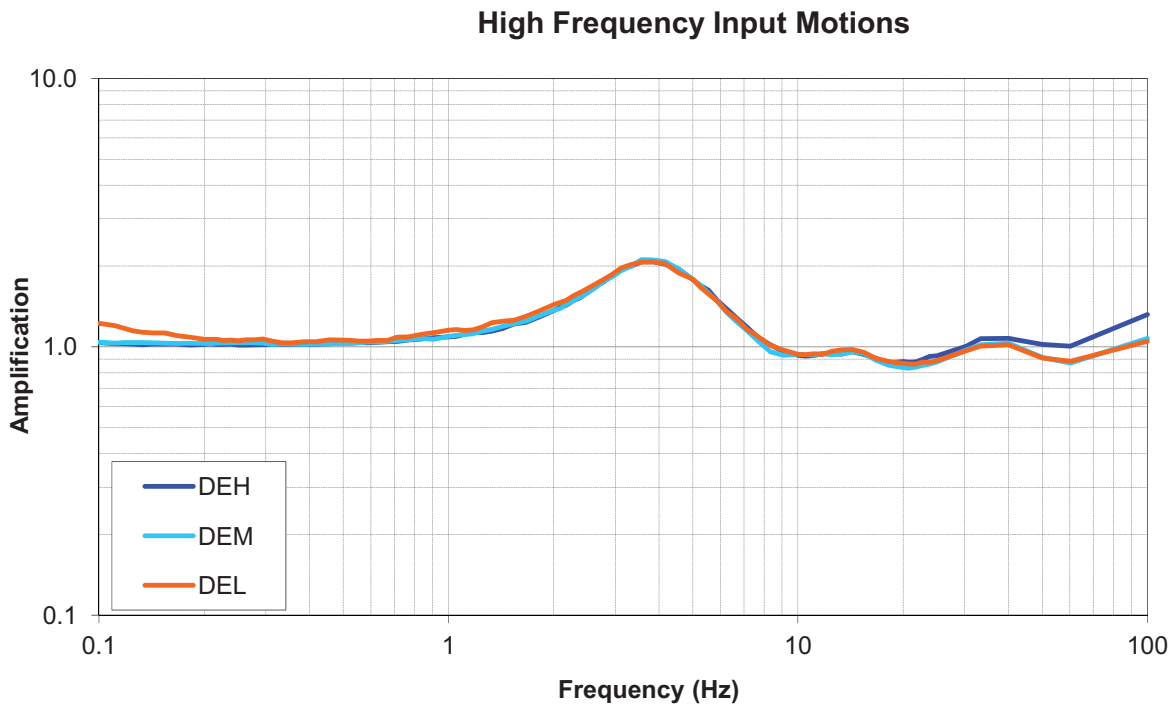


Figure 2.5.2-278 Sensitivity of GMRS Profile Mean Site Amplification to Deaggregation Earthquake Motions at 10^{-4} Level of Exceedance [EF3 COL 2.0-27-A]



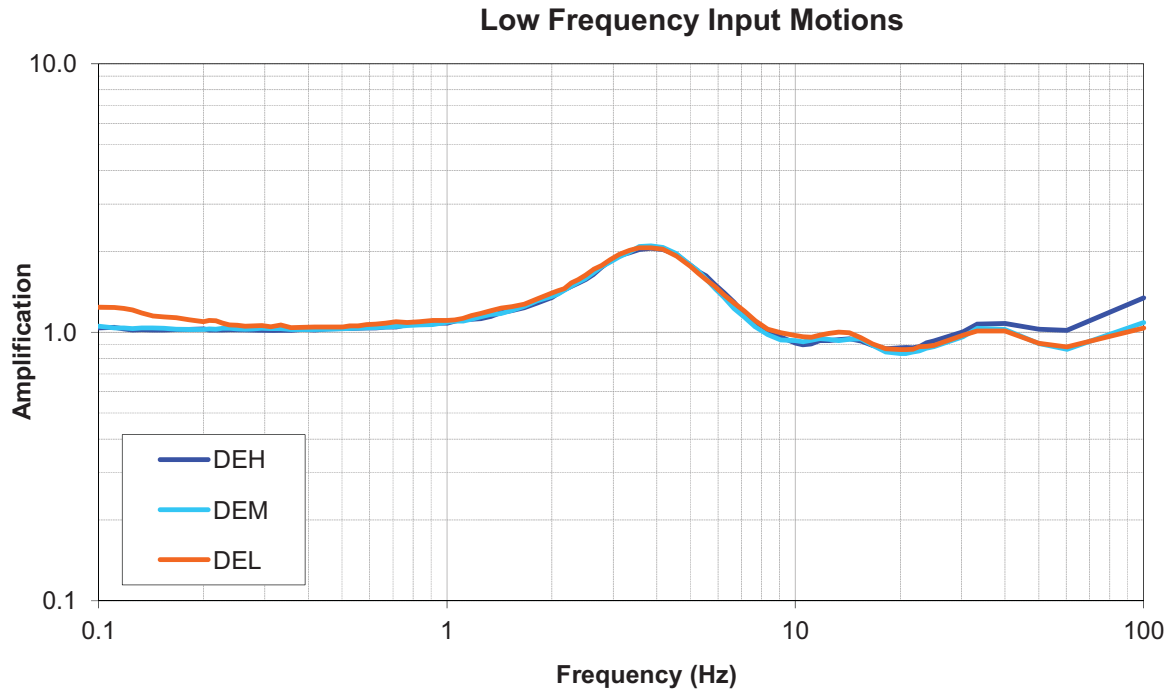
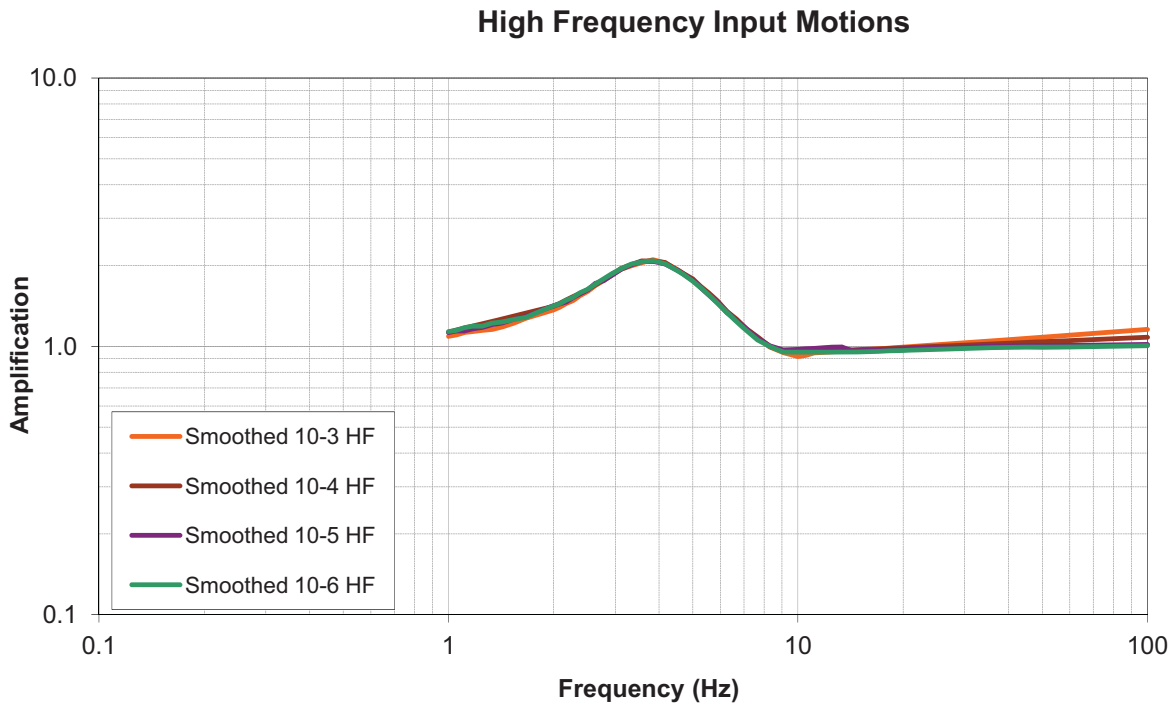


Figure 2.5.2-279 GMRS Amplification Functions for the Fermi 3 Site

[EF3 COL 2.0-27-A]



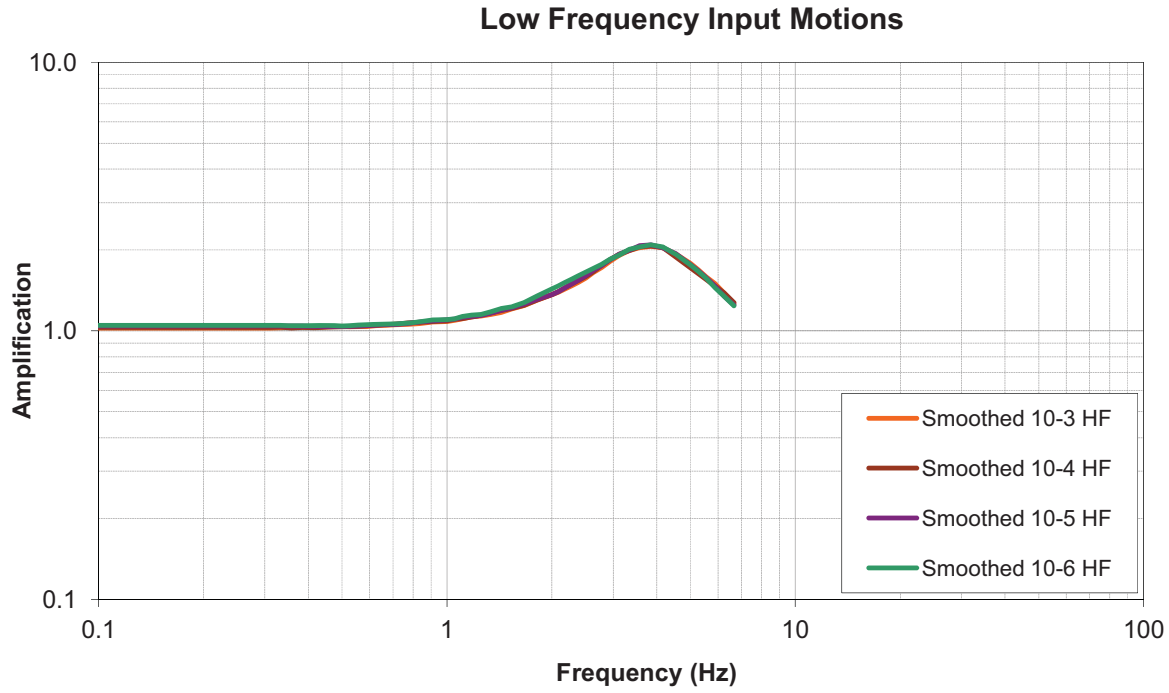
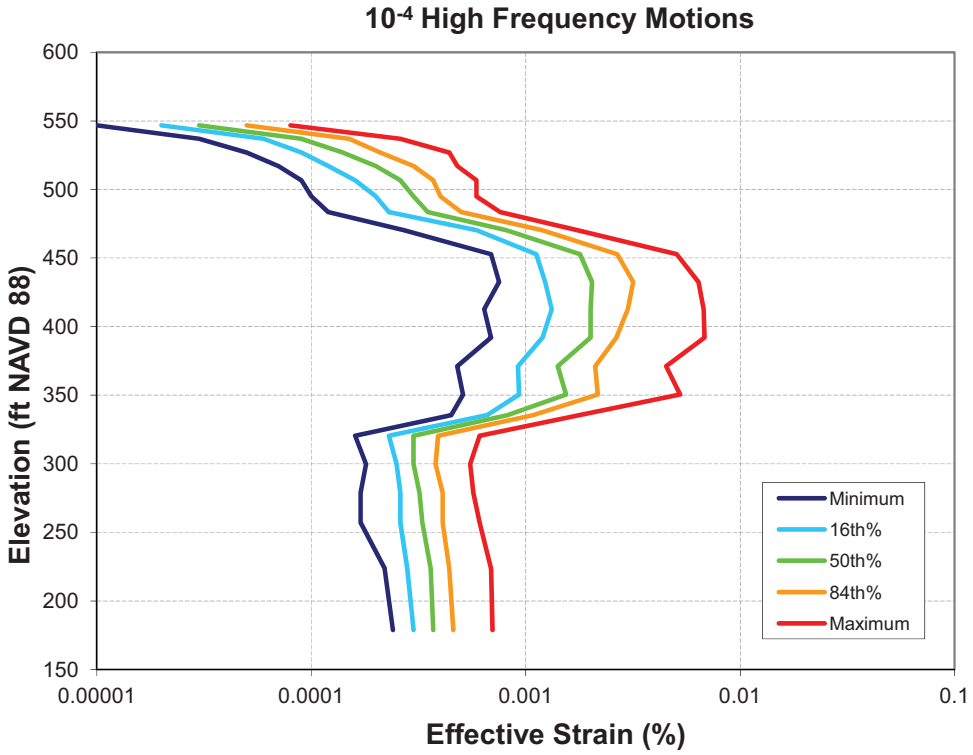


Figure 2.5.2-280 Statistics of the Effective Strain for the GMRS Profile and 10^{-4} Motions
[EF3 COL 2.0-27-A]



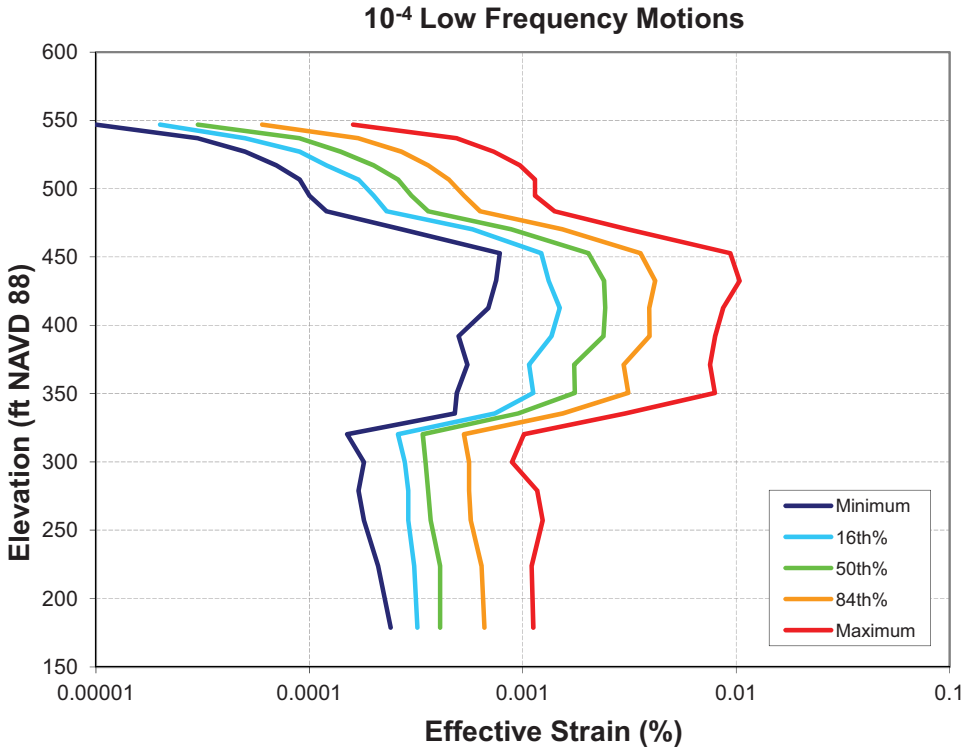
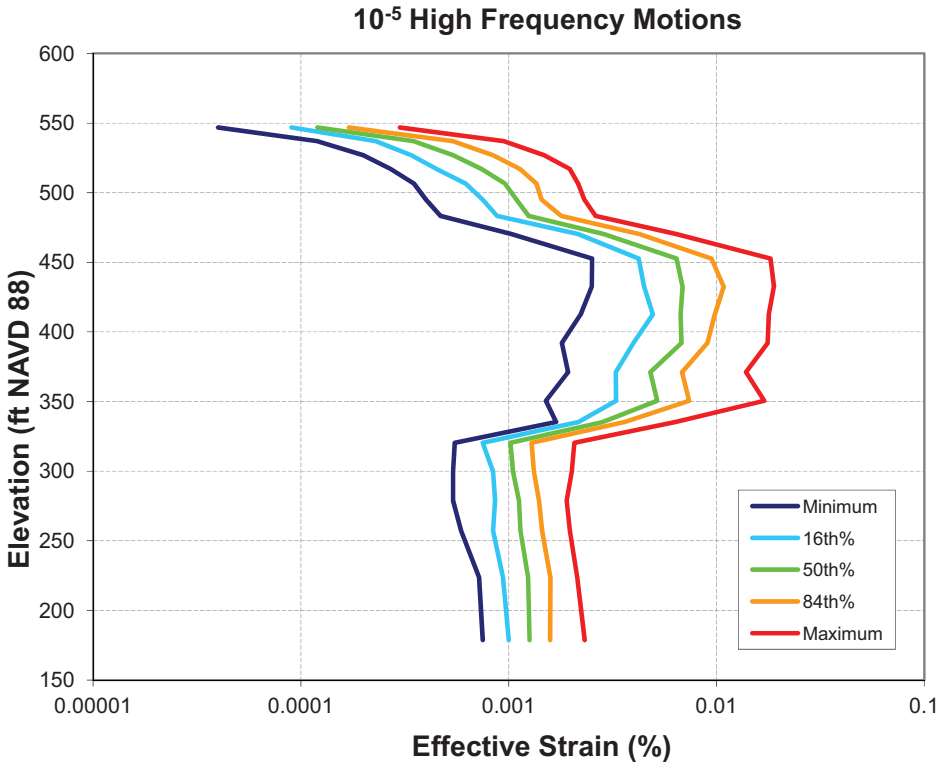


Figure 2.5.2-281 Statistics of the Effective Strain for the GMRS Profile and 10^{-5} motions
[EF3 COL 2.0-27-A]



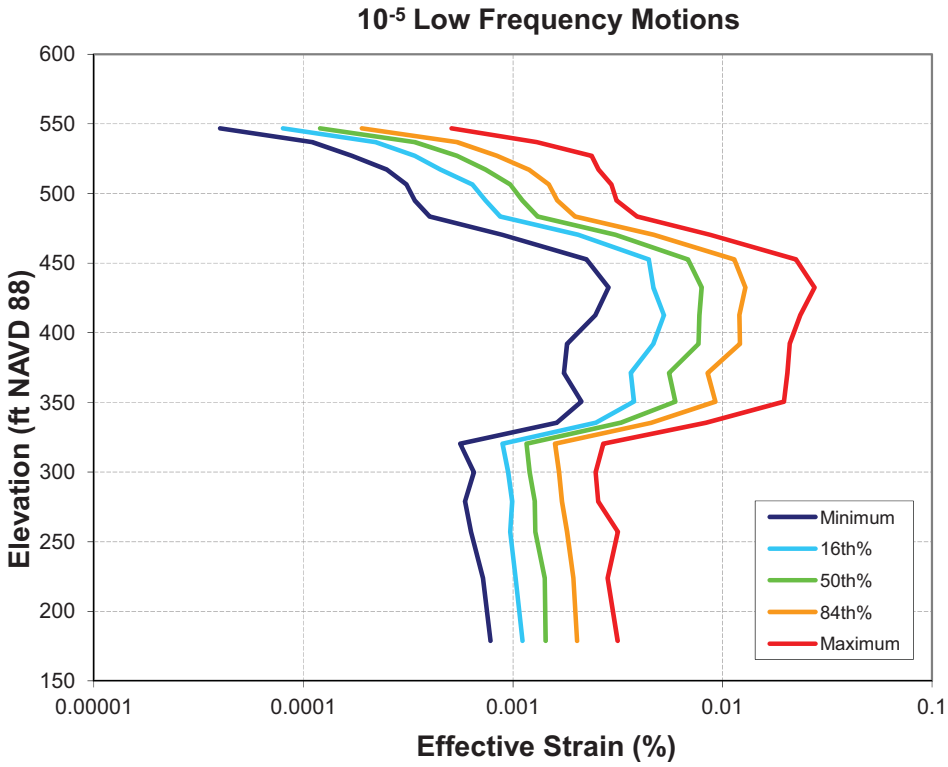


Figure 2.5.2-282 Development of the 10^{-4} Surface UHRS for the GMRS Profile

[EF3 COL 2.0-27-A]

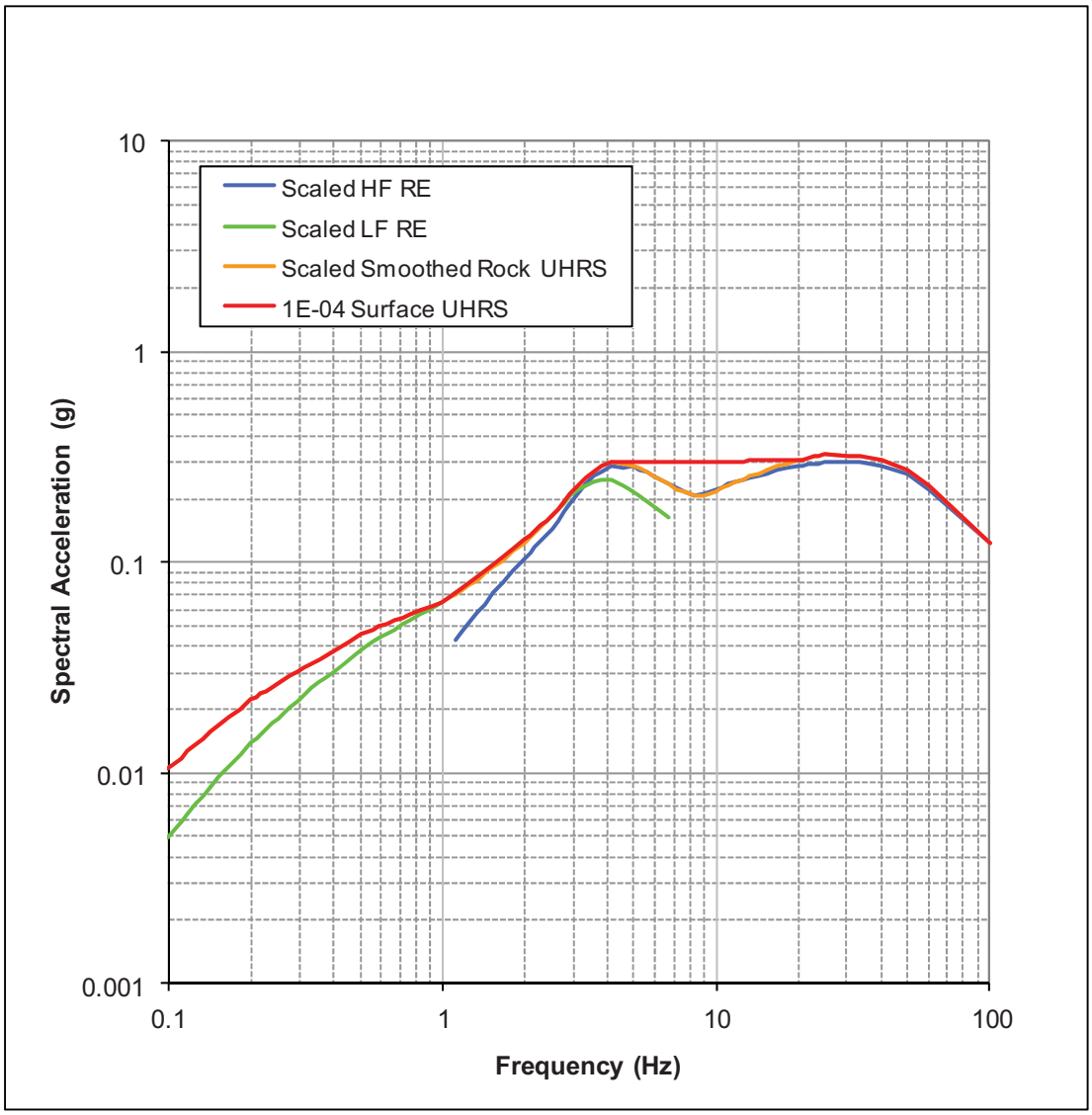


Figure 2.5.2-283 UHRS for the GMRS Elevation

[EF3 COL 2.0-27-A]

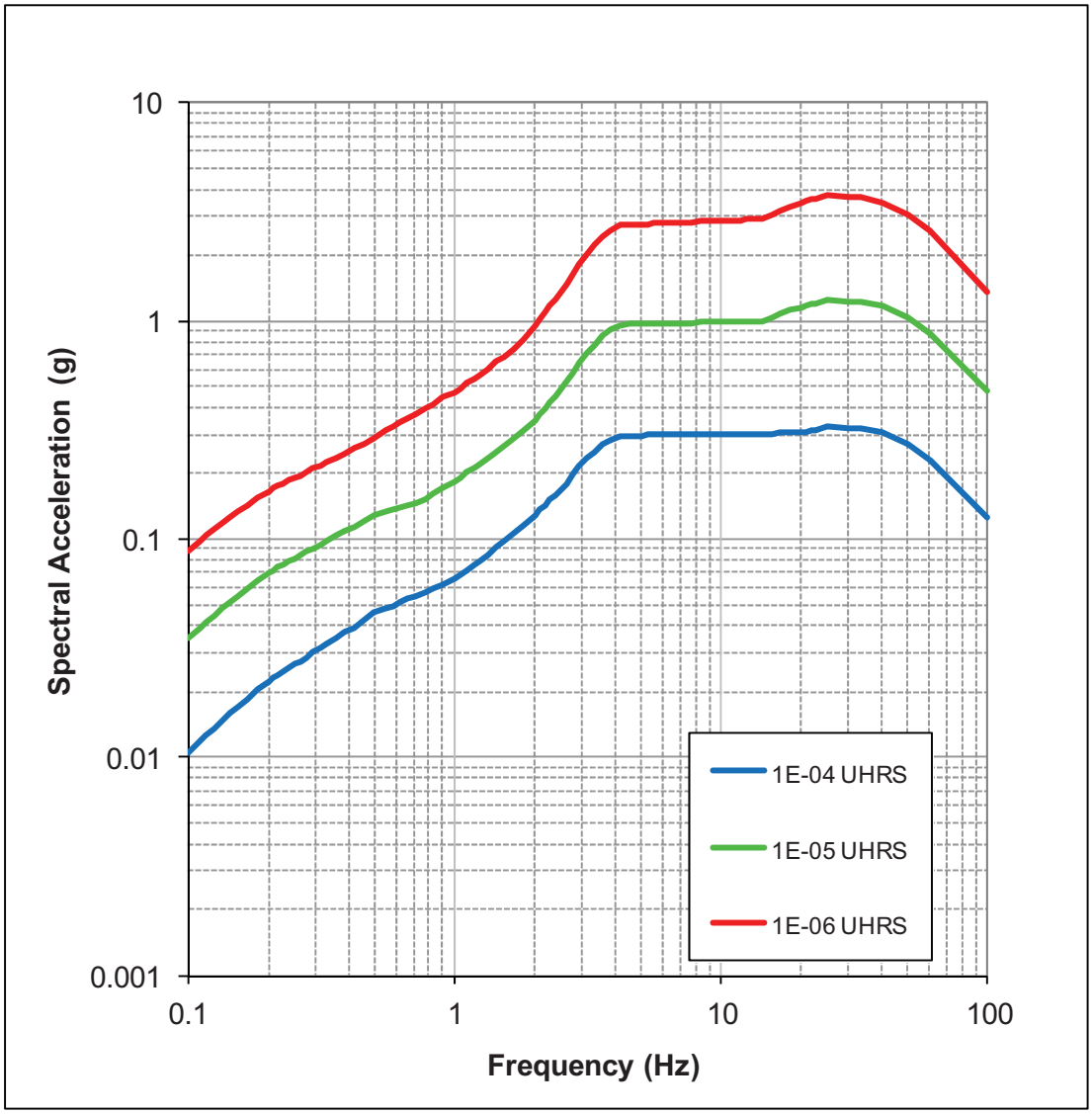


Figure 2.5.2-284 Development of Horizontal GMRS for the Fermi 3 Site

[EF3 COL 2.0-27-A]

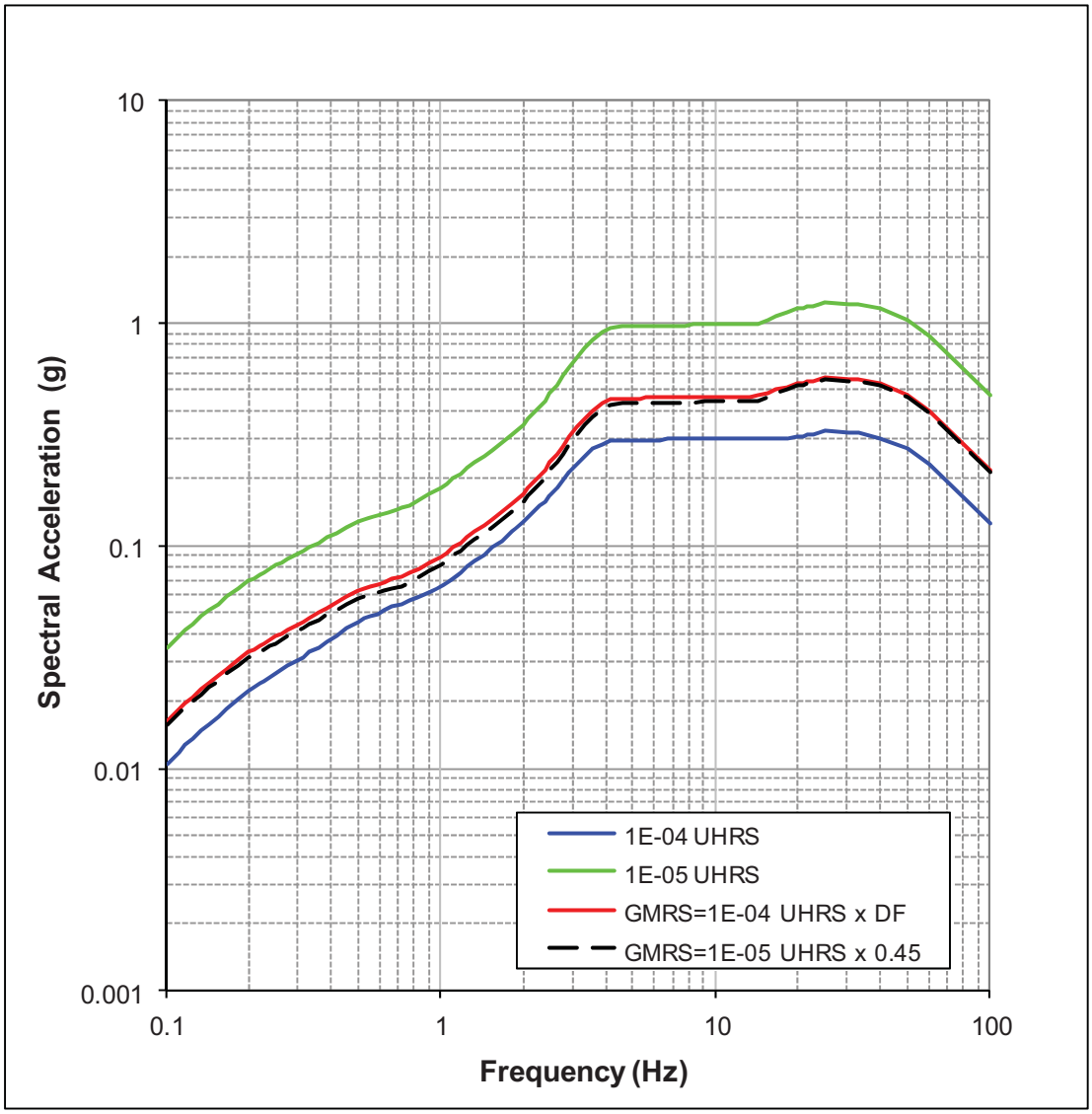


Figure 2.5.2-285 Vertical-to-Horizontal Spectral Ratios for Generic CEUS Hard Rock

[EF3 COL 2.0-27-A]

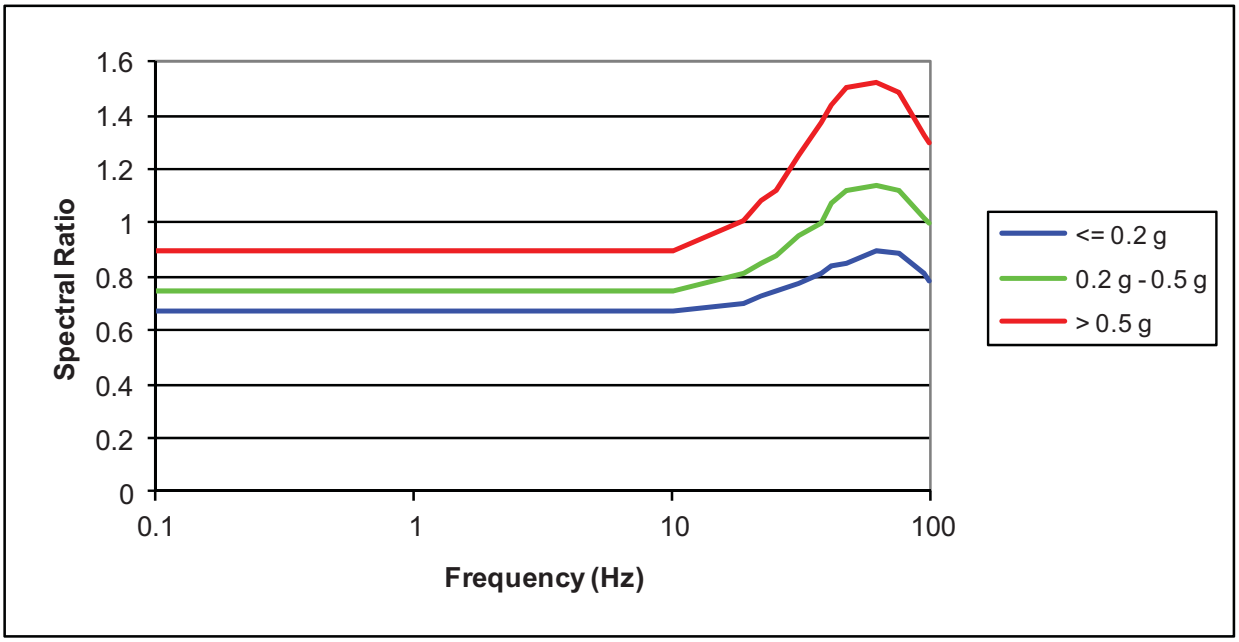


Figure 2.5.2-286 Fermi 3 GMRS (5 Percent Damping) with Comparison to CSDRS

[EF3 COL 2.0-27-A]