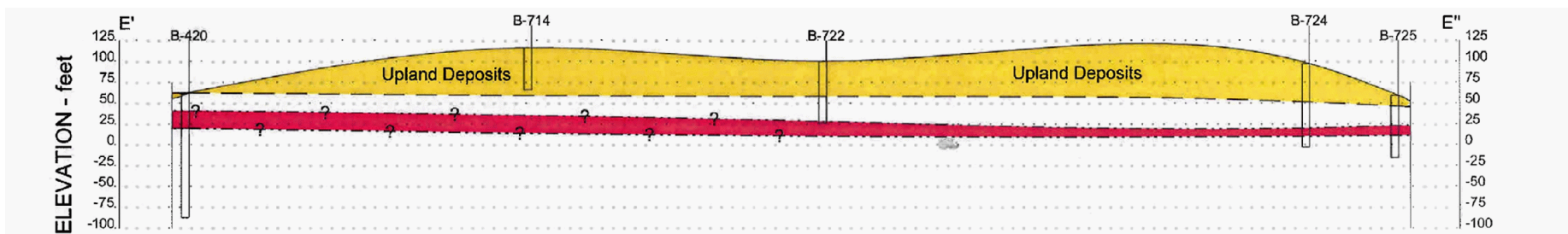
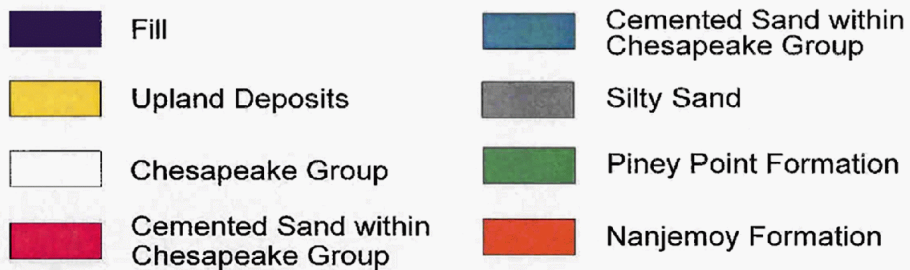


**Figure 2.5-43—{Subsurface Profile E-E'}**



**Figure 2.5.1-41**

View Toward Northeast



Vertical Exaggeration= 5X

- Notes: 1) See Figures 2.5.1-32 and -33 for location of cross-section  
 2) See FSAR Section 2.5.4-Appendix A for site boring logs

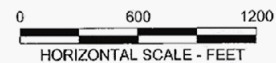
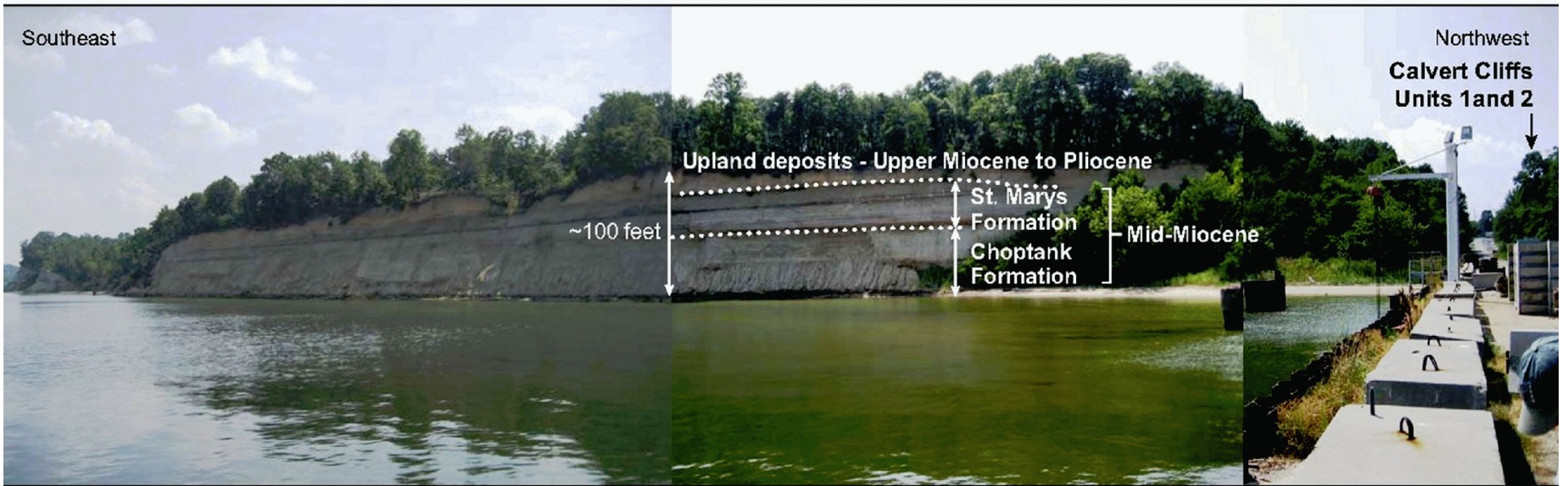


Figure 2.5-44—{View of Calvert Cliffs Toward the Southwest from the Barge}



Note: St. Marys and Choptank Formation contact from Kidwell (1977).

Figure 2.5-45—{Bechtel Group EPRI Source Zones}

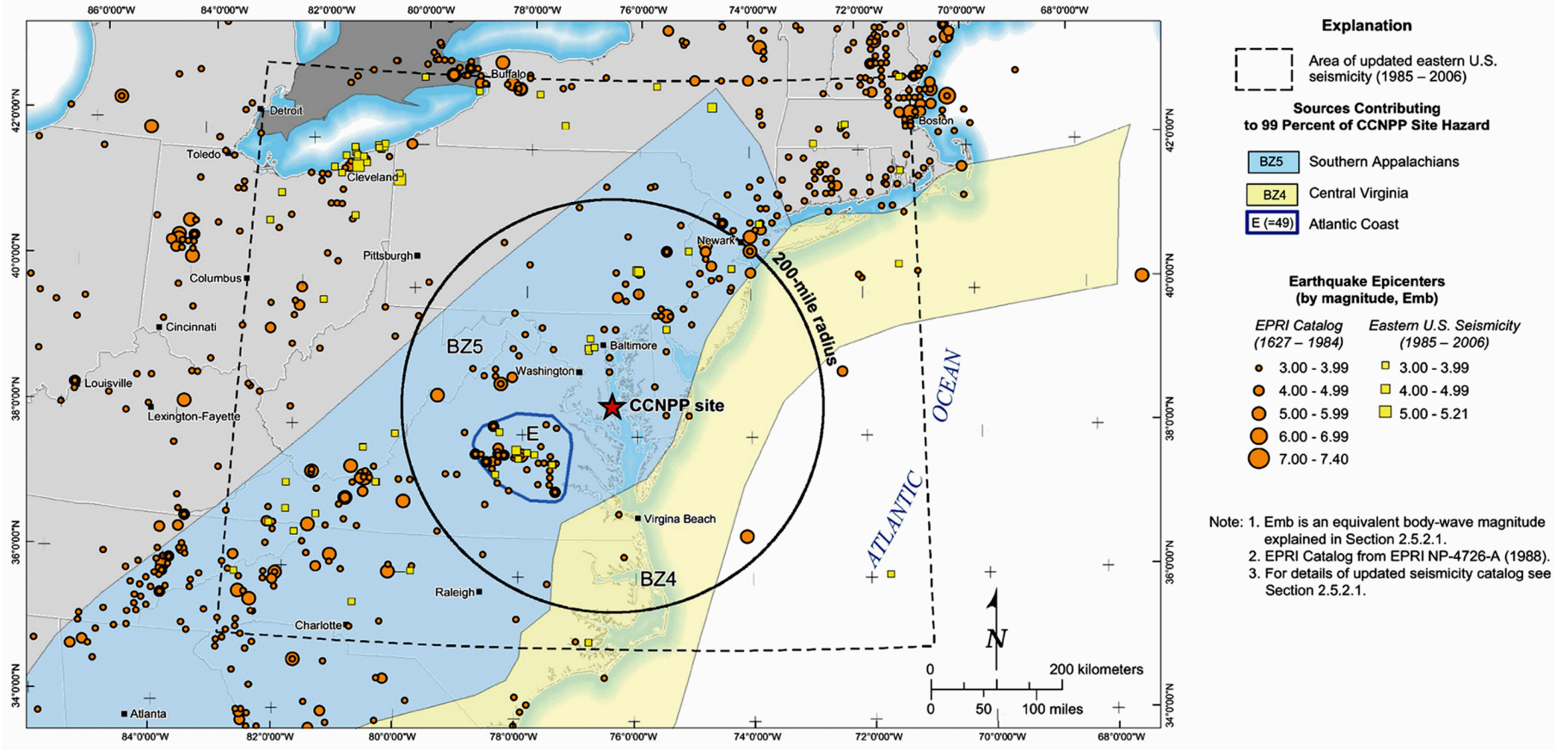


Figure 2.5-46—{Dames & Moore EPRI Source Zones}

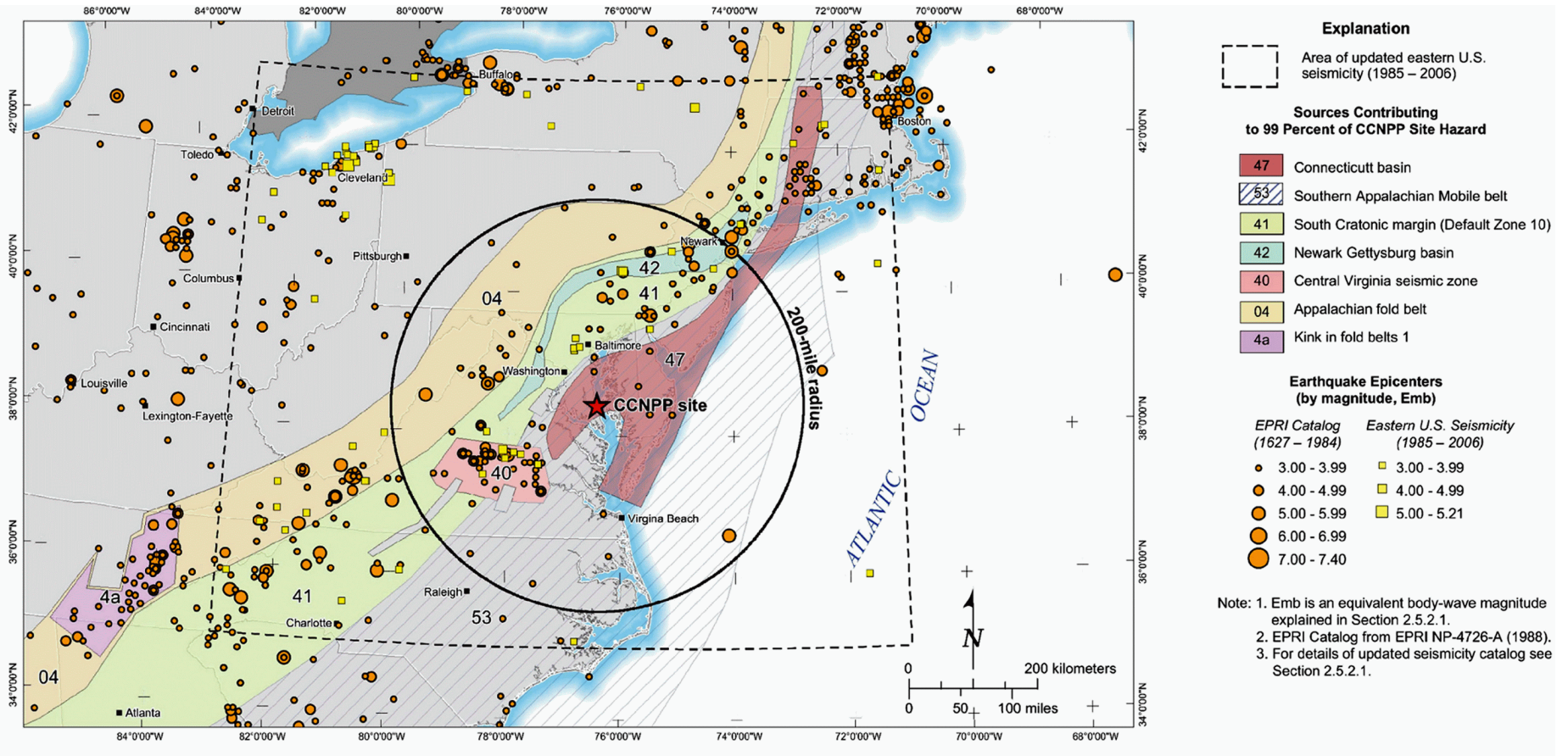
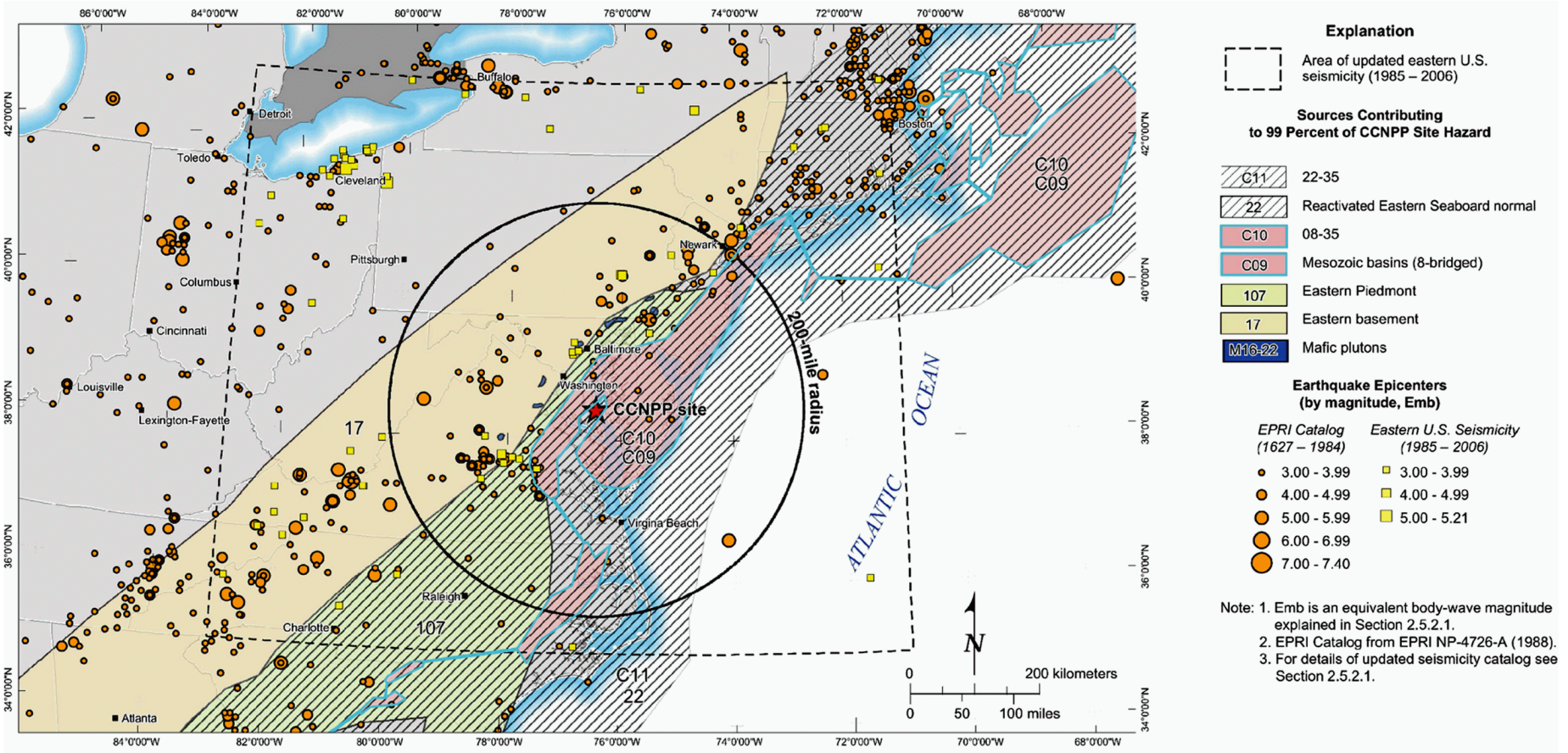


Figure 2.5-47—{Law Engineering EPRI Source Zones}



**Explanation**

Area of updated eastern U.S. seismicity (1985 – 2006)

**Sources Contributing to 99 Percent of CCNPP Site Hazard**

- C11 22-35
- 22 Reactivated Eastern Seaboard normal
- C10 08-35
- C09 Mesozoic basins (8-bridged)
- 107 Eastern Piedmont
- 17 Eastern basement
- M16-22 Mafic plutons

**Earthquake Epicenters (by magnitude, Emb)**

EPRi Catalog (1627 – 1984)	Eastern U.S. Seismicity (1985 – 2006)
3.00 - 3.99	3.00 - 3.99
4.00 - 4.99	4.00 - 4.99
5.00 - 5.99	5.00 - 5.21
6.00 - 6.99	
7.00 - 7.40	

Note: 1. Emb is an equivalent body-wave magnitude explained in Section 2.5.2.1.  
 2. EPRi Catalog from EPRi NP-4726-A (1988).  
 3. For details of updated seismicity catalog see Section 2.5.2.1.

Figure 2.5-48—{Rondout EPRI Source Zones}

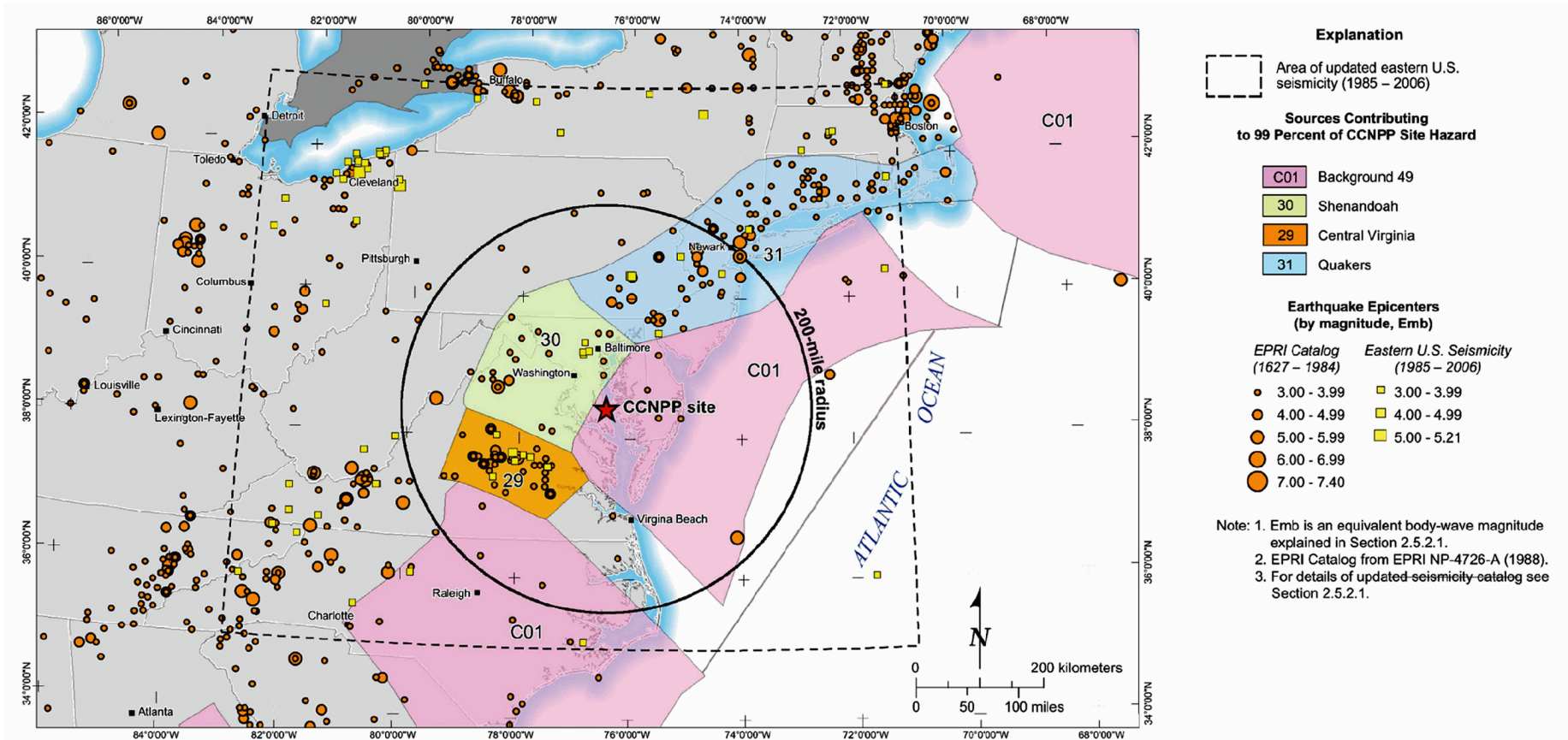


Figure 2.5-49—{Weston Geophysical EPRI Source Zones}

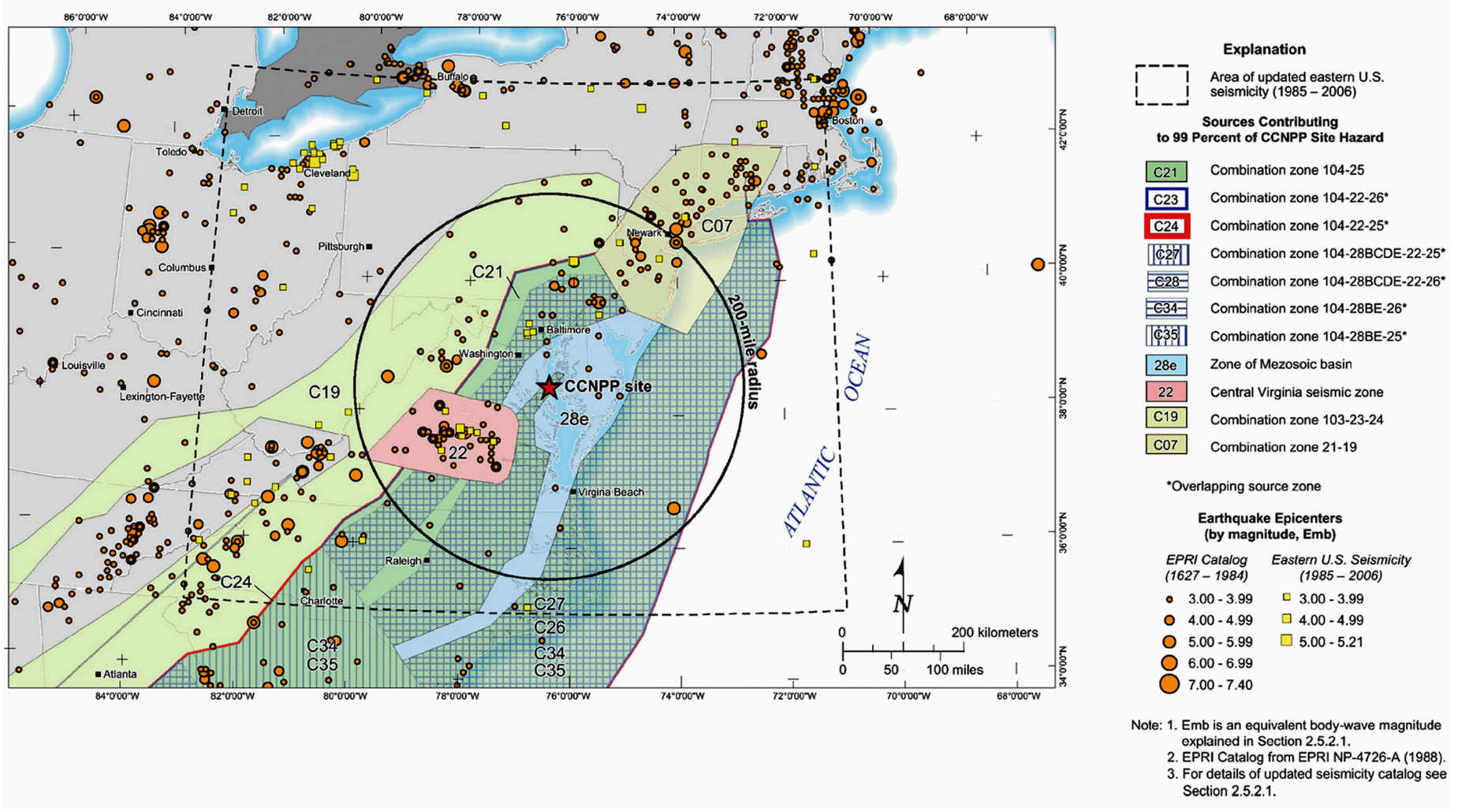


Figure 2.5-50—{Woodward-Clyde Consultants EPRI Source Zones}

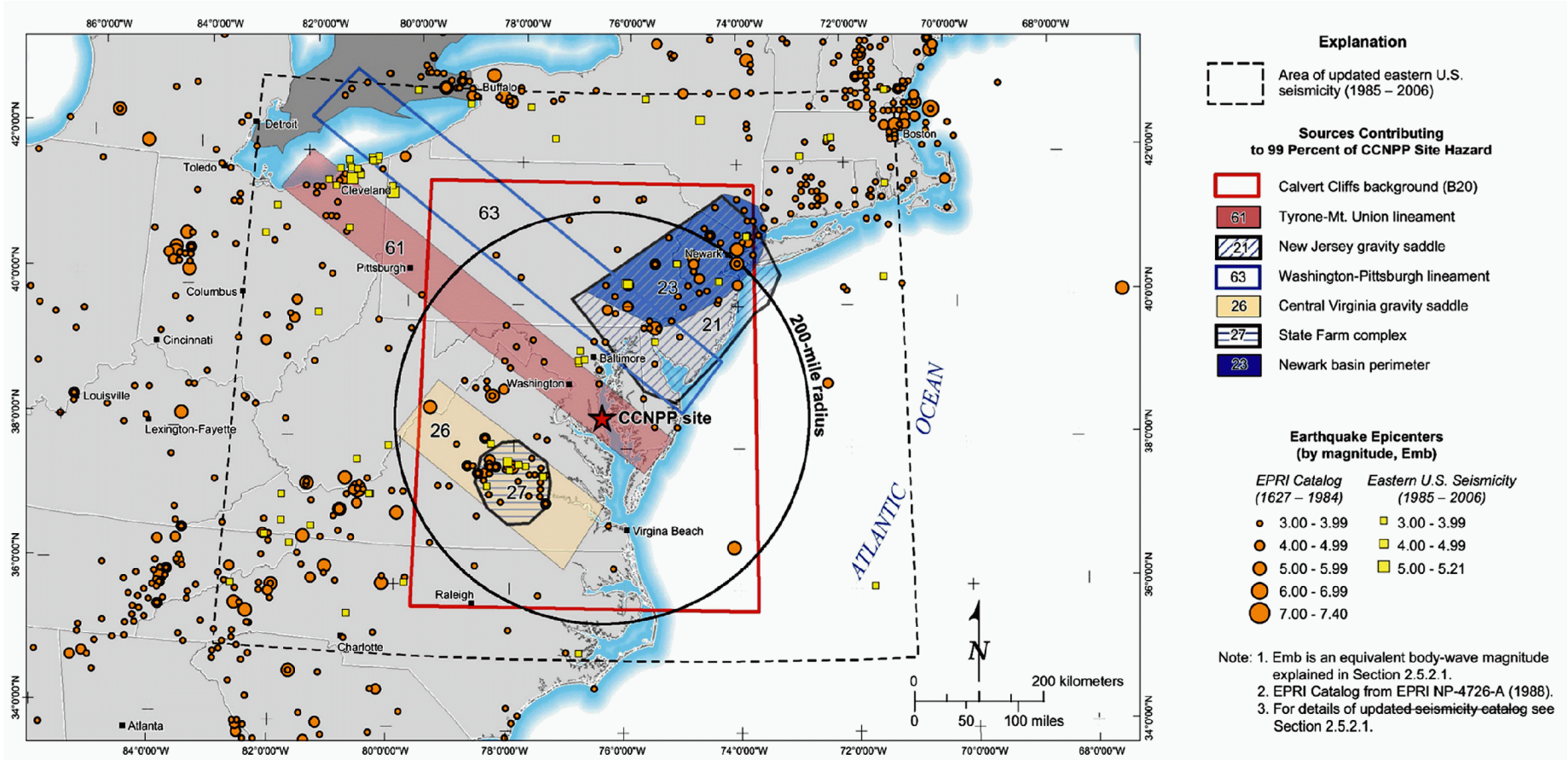
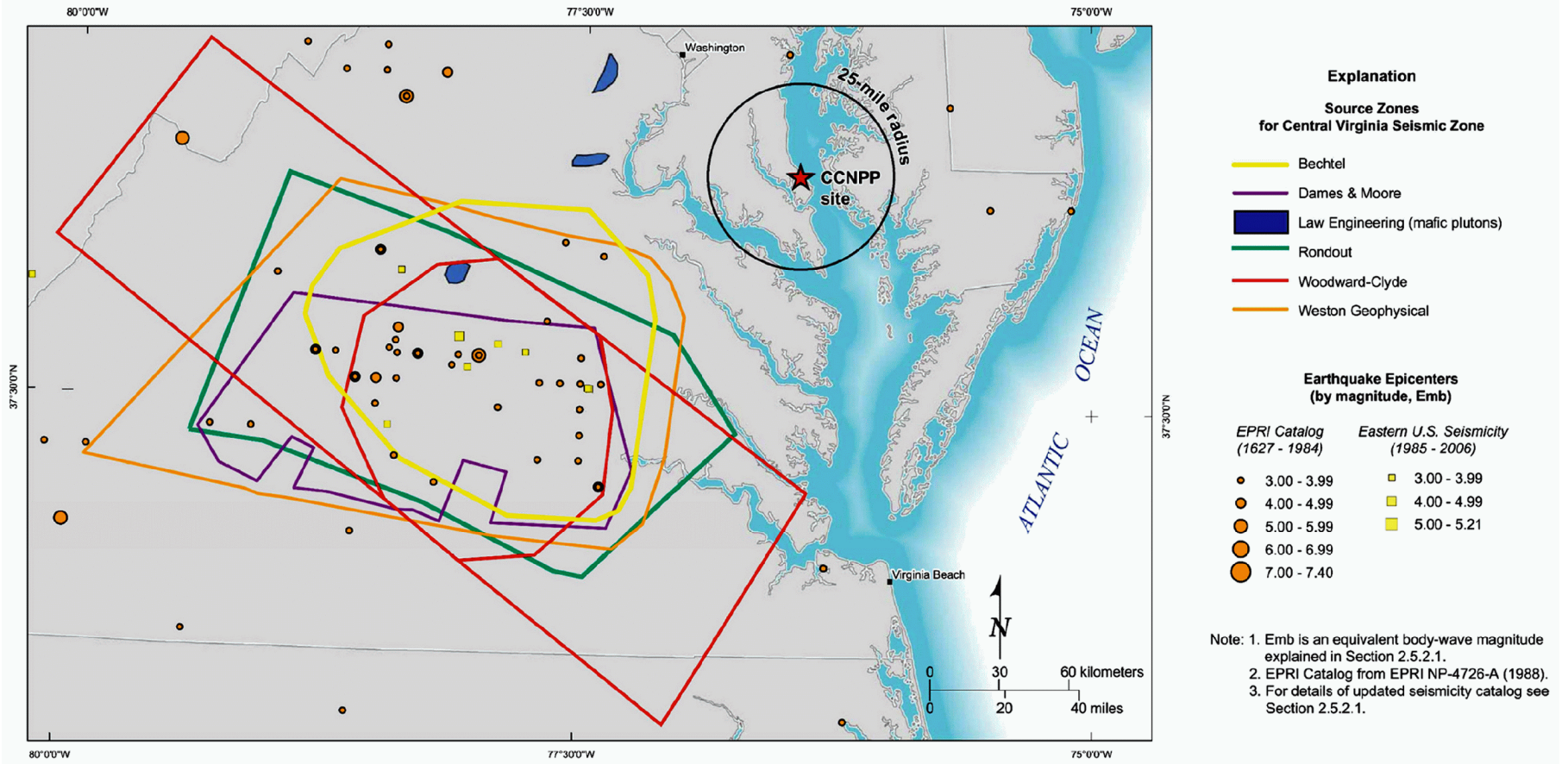
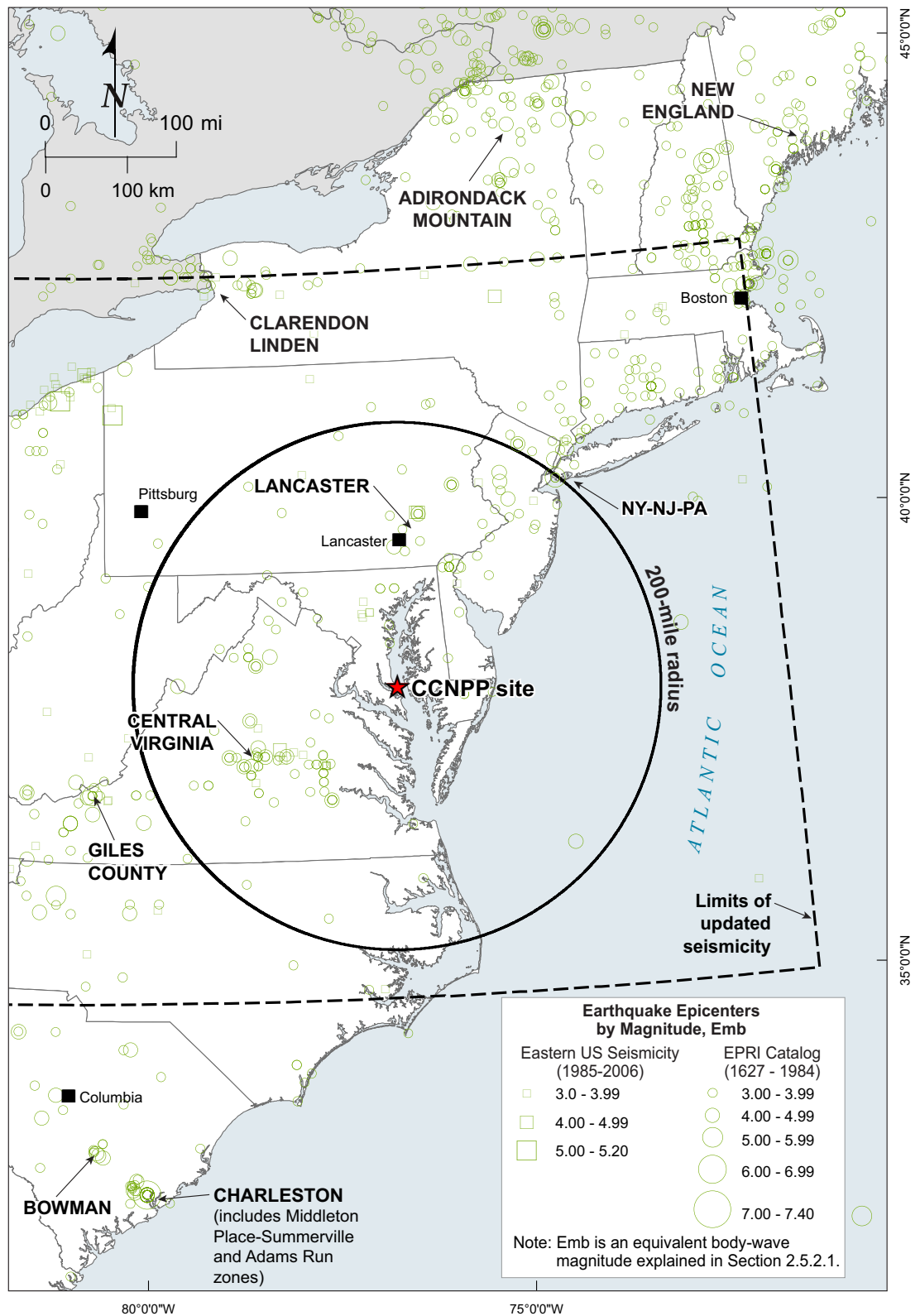




Figure 2.5-51—{Various EPRI Geometries of the Central Virginia Seismic Zone}



**Figure 2.5-52—{Seismic Zones and Seismicity in CEUS}**



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Figure 2.5-53—{USGS Model}

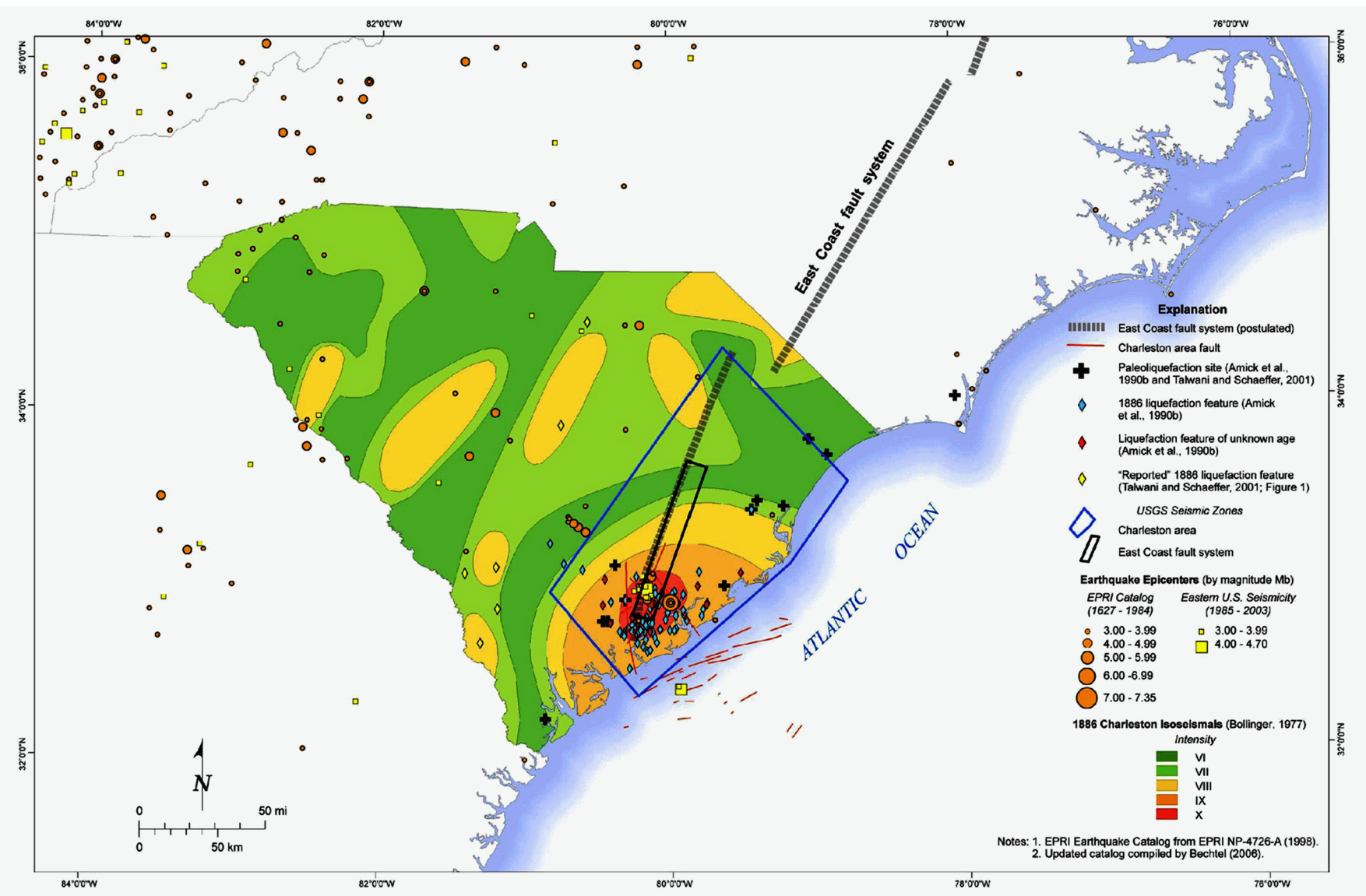


Figure 2.5-54—{SC DOT Model}

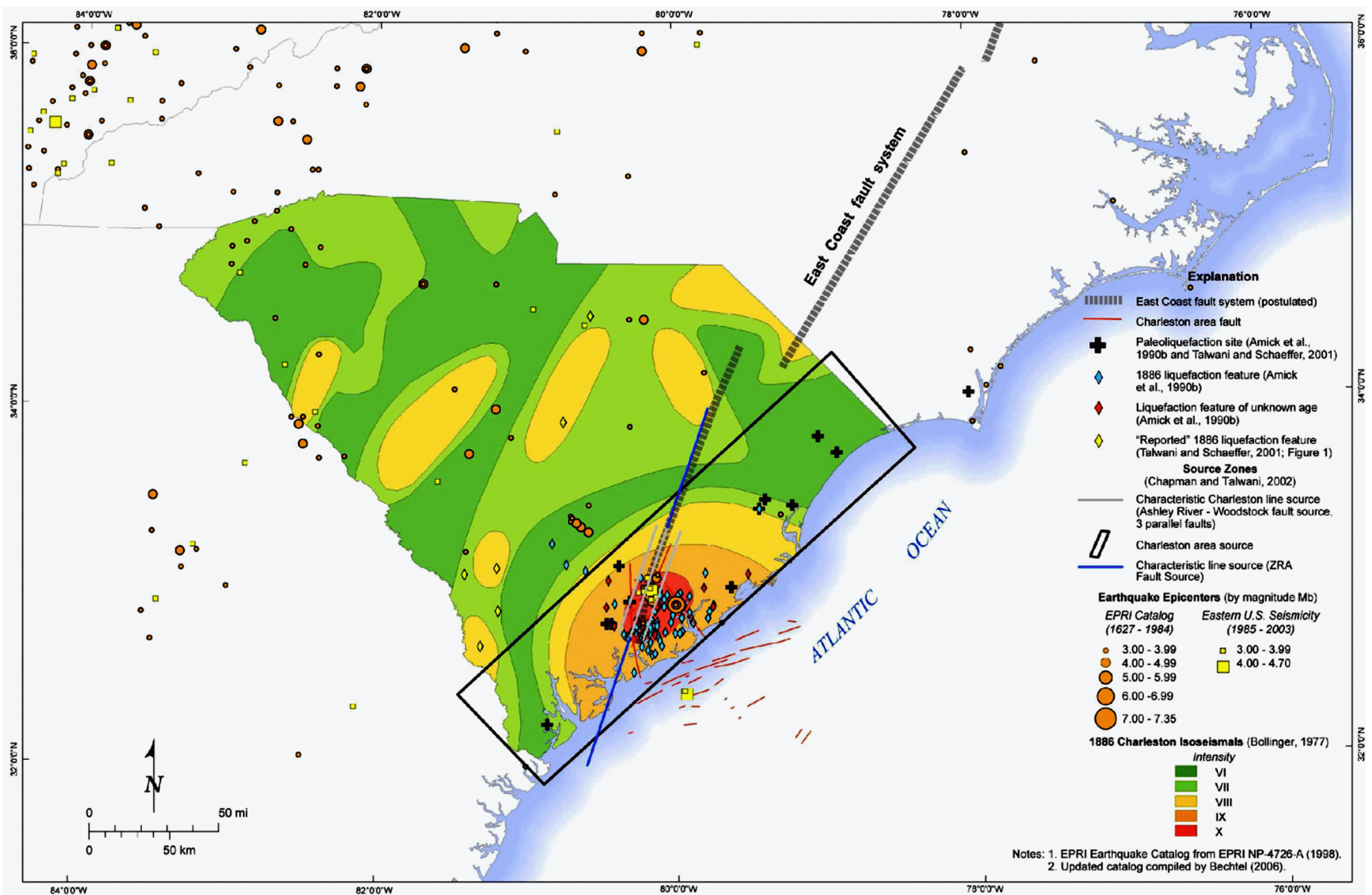


Figure 2.5-55—{EPRI (NP-6452-D 1989) EST's Charleston Map}

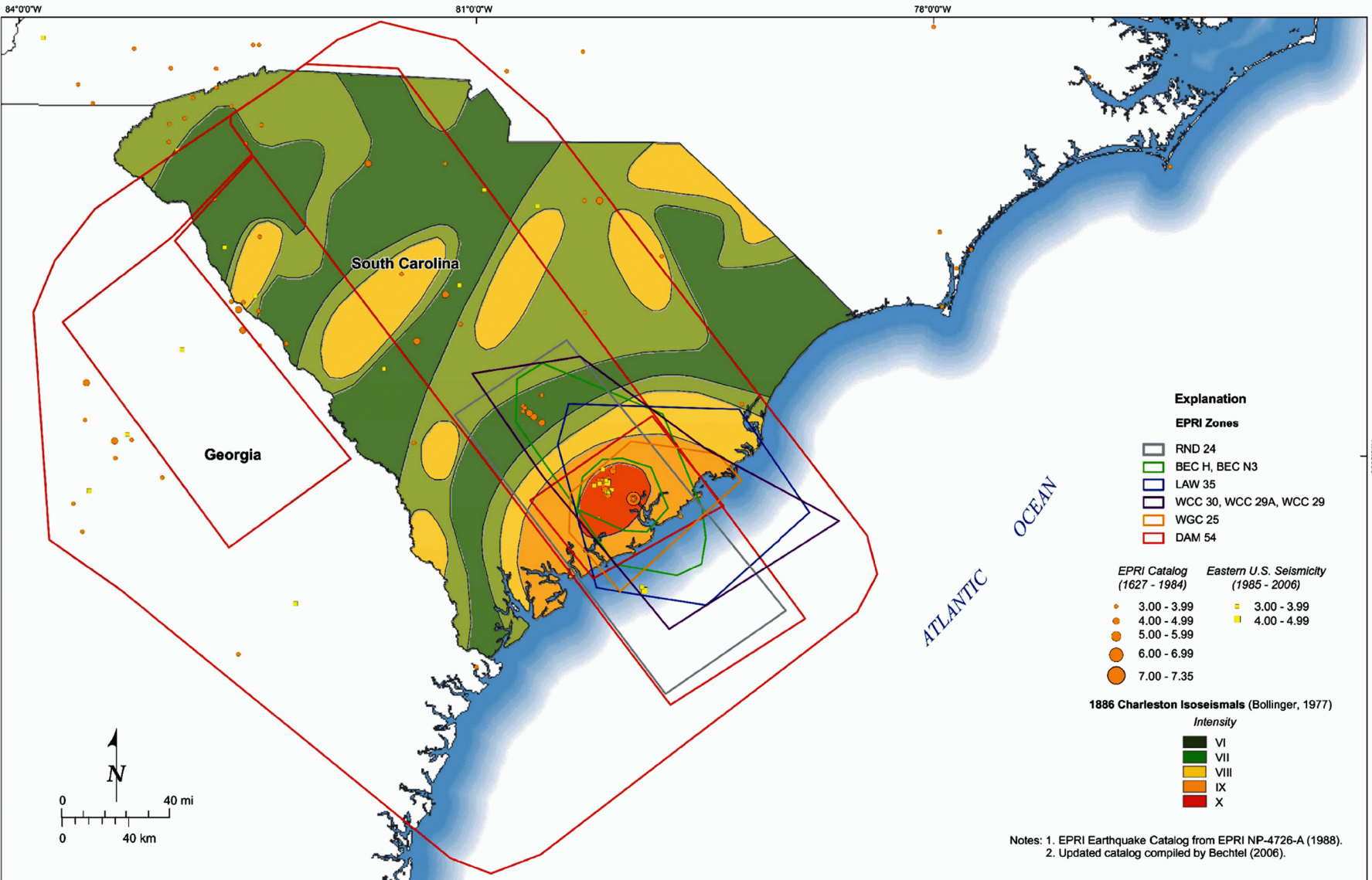


Figure 2.5-56—{UCSS Map}

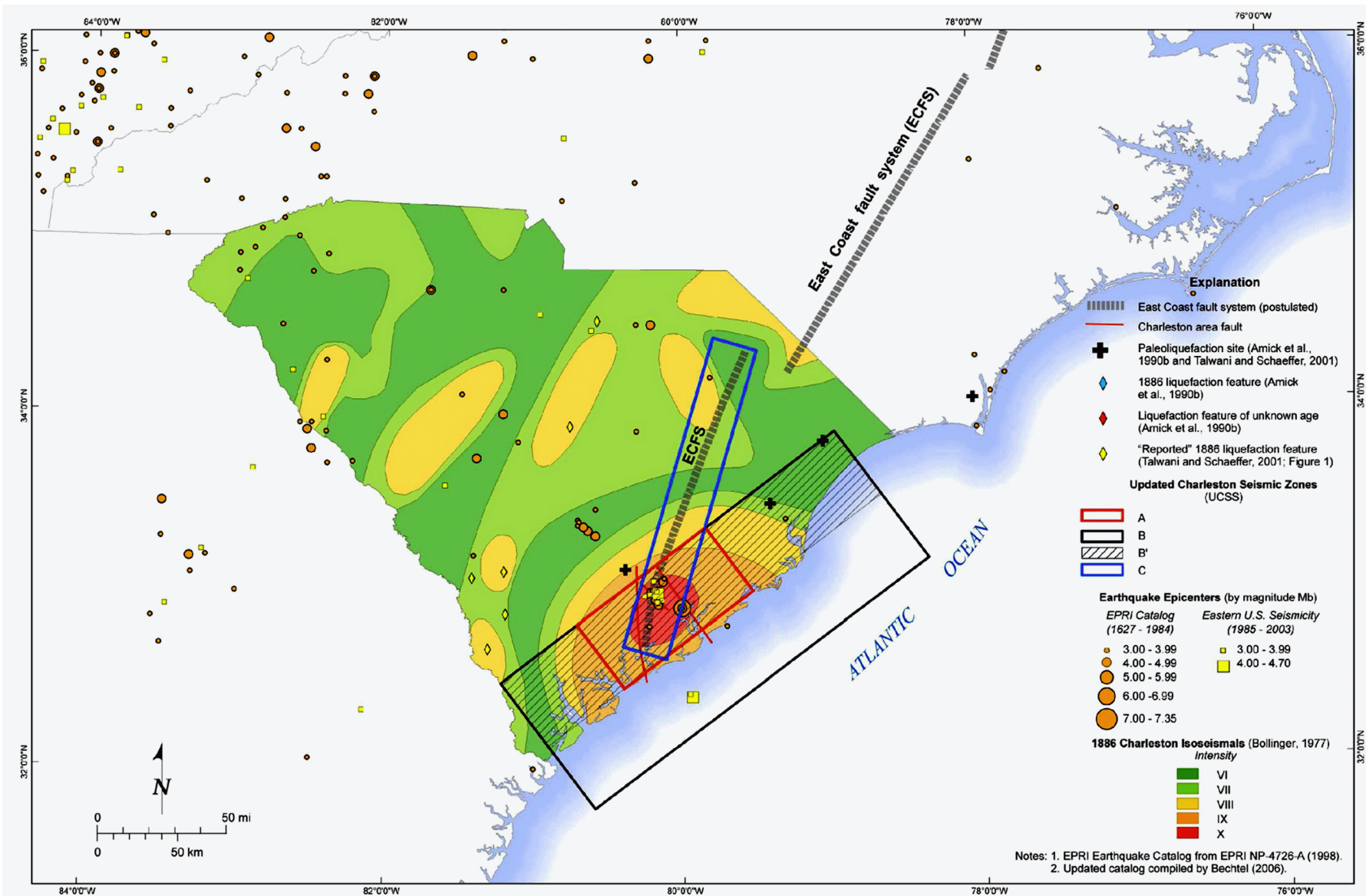


Figure 2.5-57—{Regional Charleston Tectonic Features}

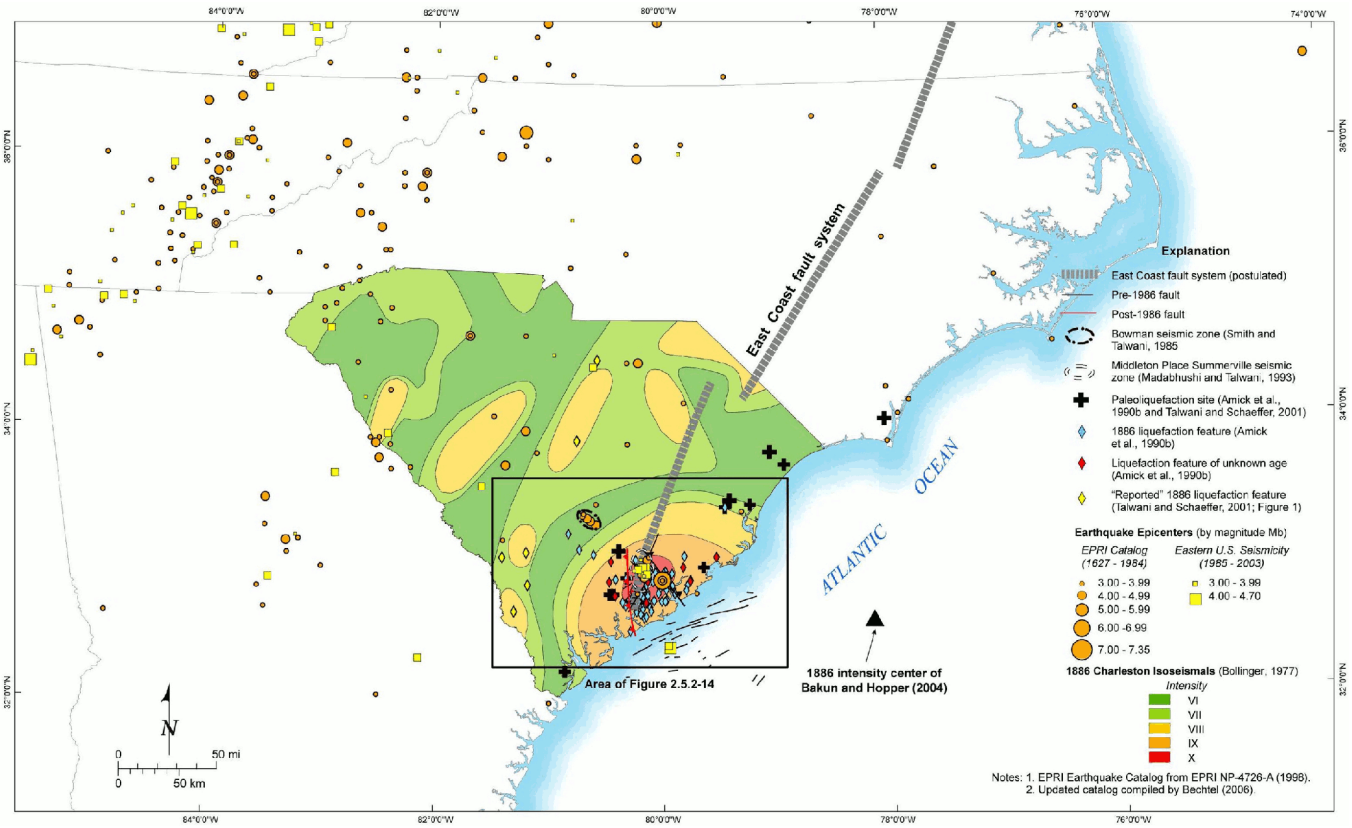
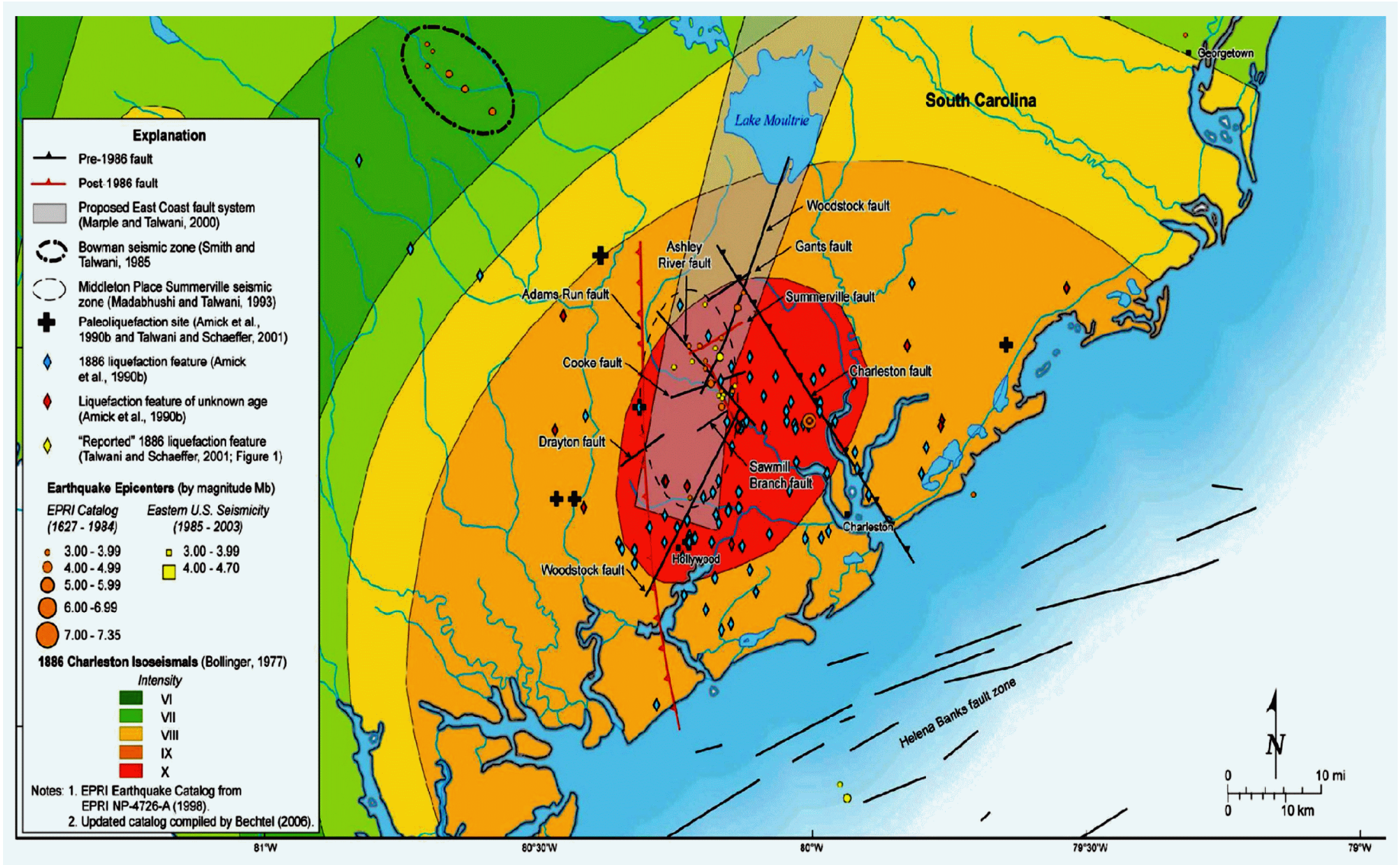


Figure 2.5-58—{Local Charleston Tectonic Features}





**Figure 2.5-59—{Updated Charleston Seismic Source (UCSS) Logic Tree with Weights for Each Branch Shown in Italics}**

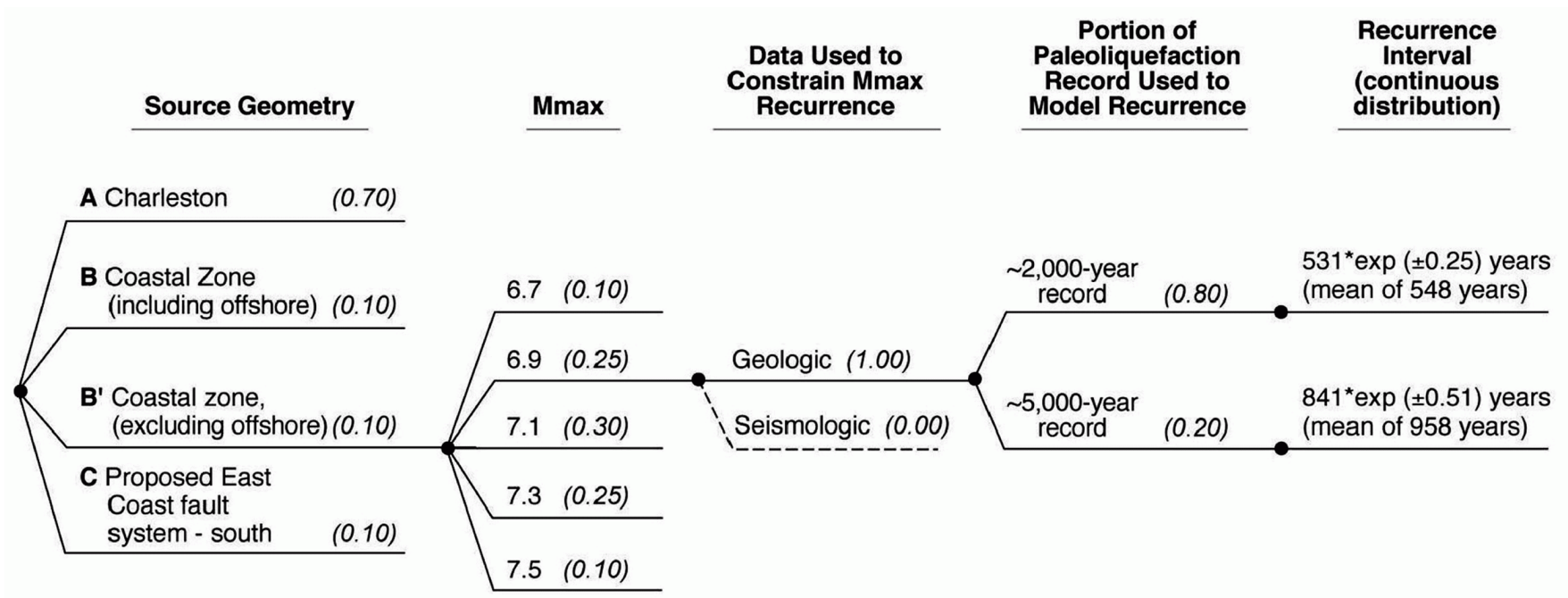
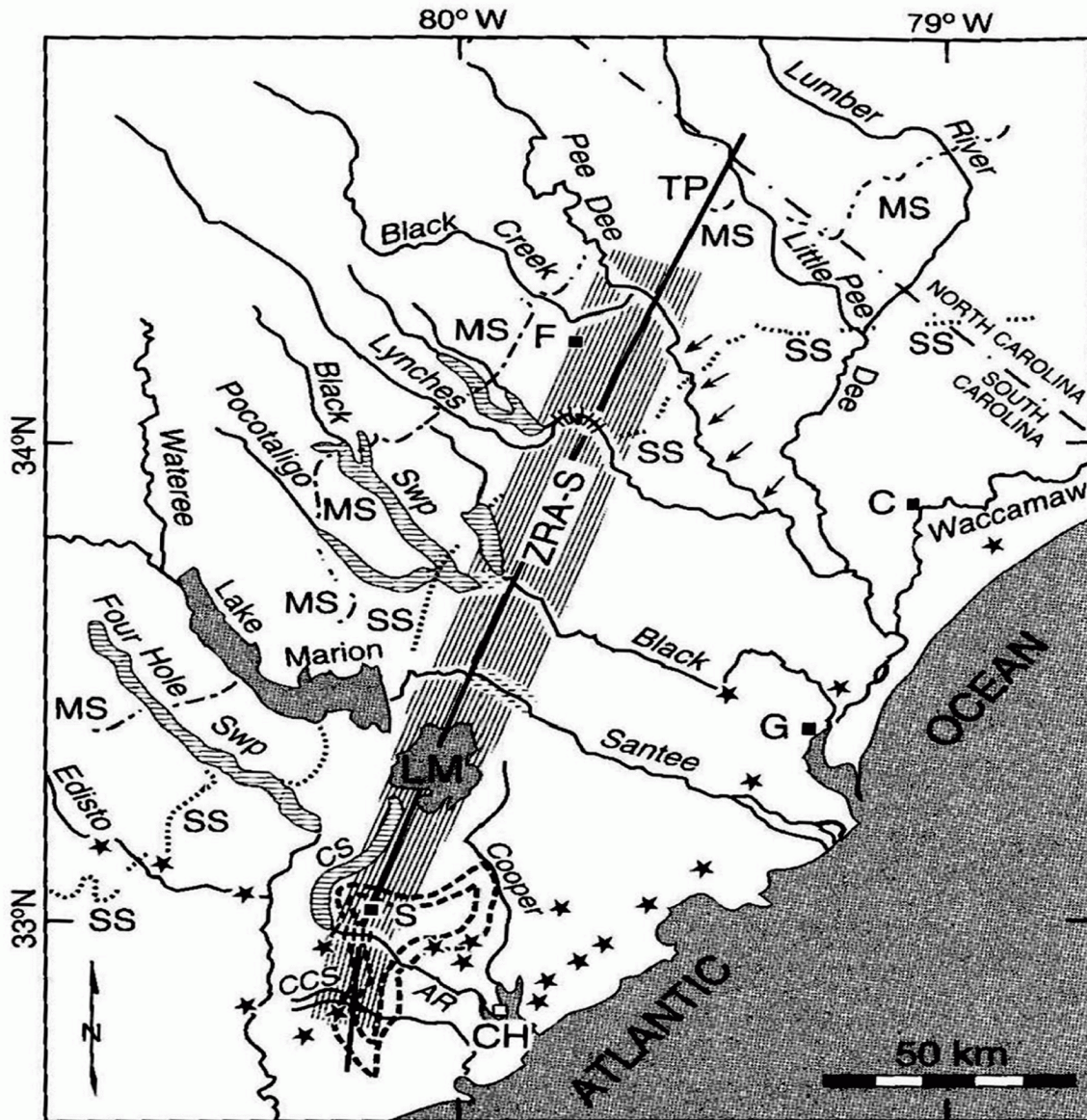


Figure 2.5-60—{Map of ZRA-S}



**LEGEND**

Incised river channel	Dissected flood plain	Anastomosing stream patterns	Mechanicsville scarp	Surry scarp

Map of ZRA-S. Figure shows southern zone of river anomalies (ZRA-S; striped area), anastomosing stream patterns, pre 1886 sand blow sites (stars), and topographic profile (TP, bold line) approximately along the ZRA-S axis. Arrows along Pee Dee River denote reach flowing against southwest valley wall. Closed dashed contours near Summerville are highest intensity isoseismals of the 1886 Charleston, South Carolina, earthquake (from Dutton, 1889). Abbreviations are as follows: AR - Ashley River, C - Conway; CCS - Caw Caw Swamp; CH - Charleston; CS - Cypress Swamp; F - Florence; G - Georgetown; LM - Lake Moultrie; MS - Mechanicsville littoral scarp; S - Summerville; SS - Surry littoral scarp.

Figure 2.5-61—{Region Surrounding CCNPP Unit 3 Site Showing Rondout Source 29, A 200 km Square Background, A 400 km Square Background, and Historical Earthquakes}

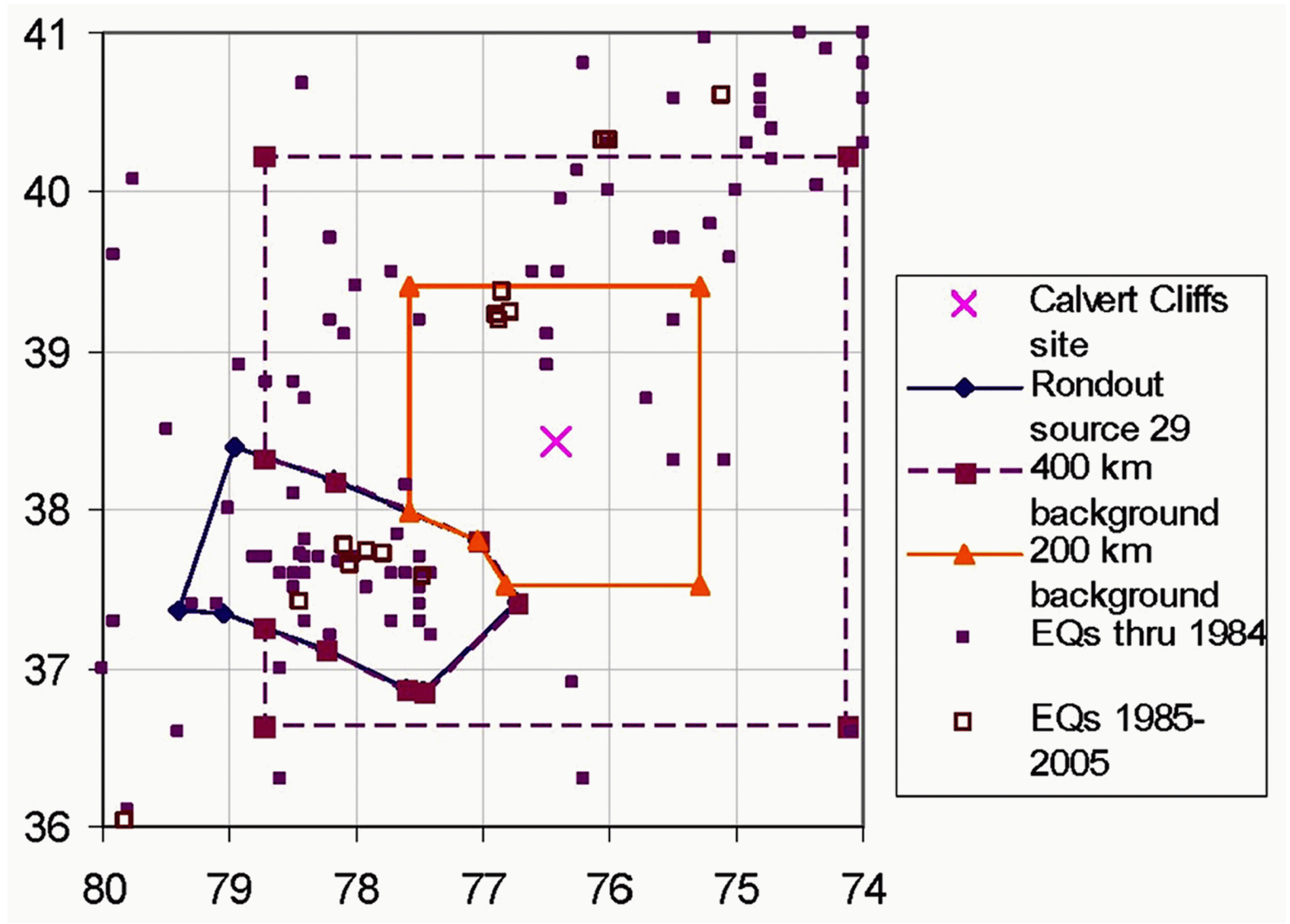


Figure 2.5-62—{Comparison of Seismicity Rate for 200 km Square Background Surrounding CCNPP Unit 3 Site, Using EPRI-SOG Earthquake Catalog and Using Earthquake Catalog Updated Through 2005}

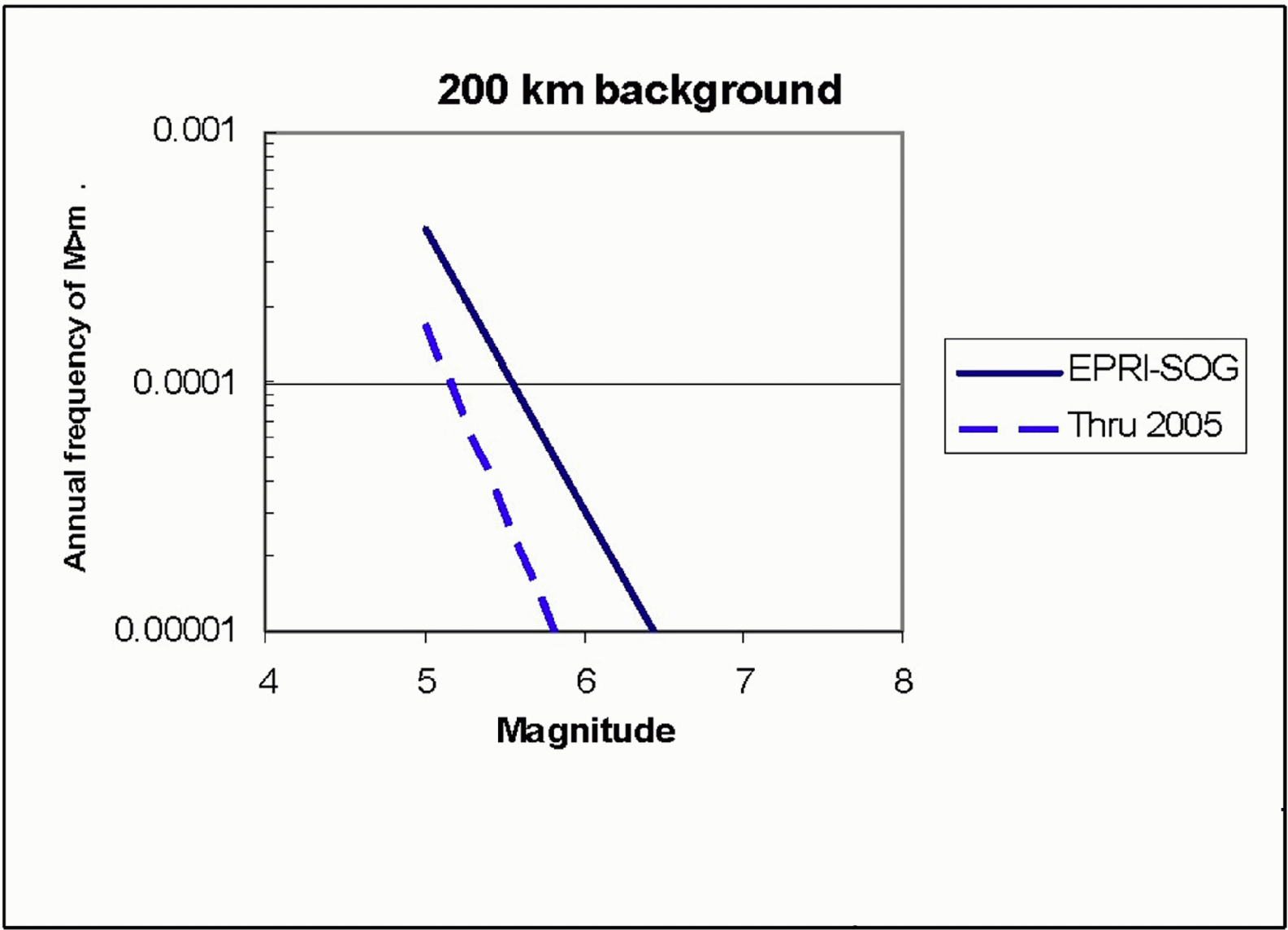


Figure 2.5-63—{Comparison of Seismicity Rate for 400 km Square Background Surrounding CCNPP Unit 3 Site, Using EPRI-SOG Earthquake Catalog and Using the Earthquake Catalog Updated Through 2005}

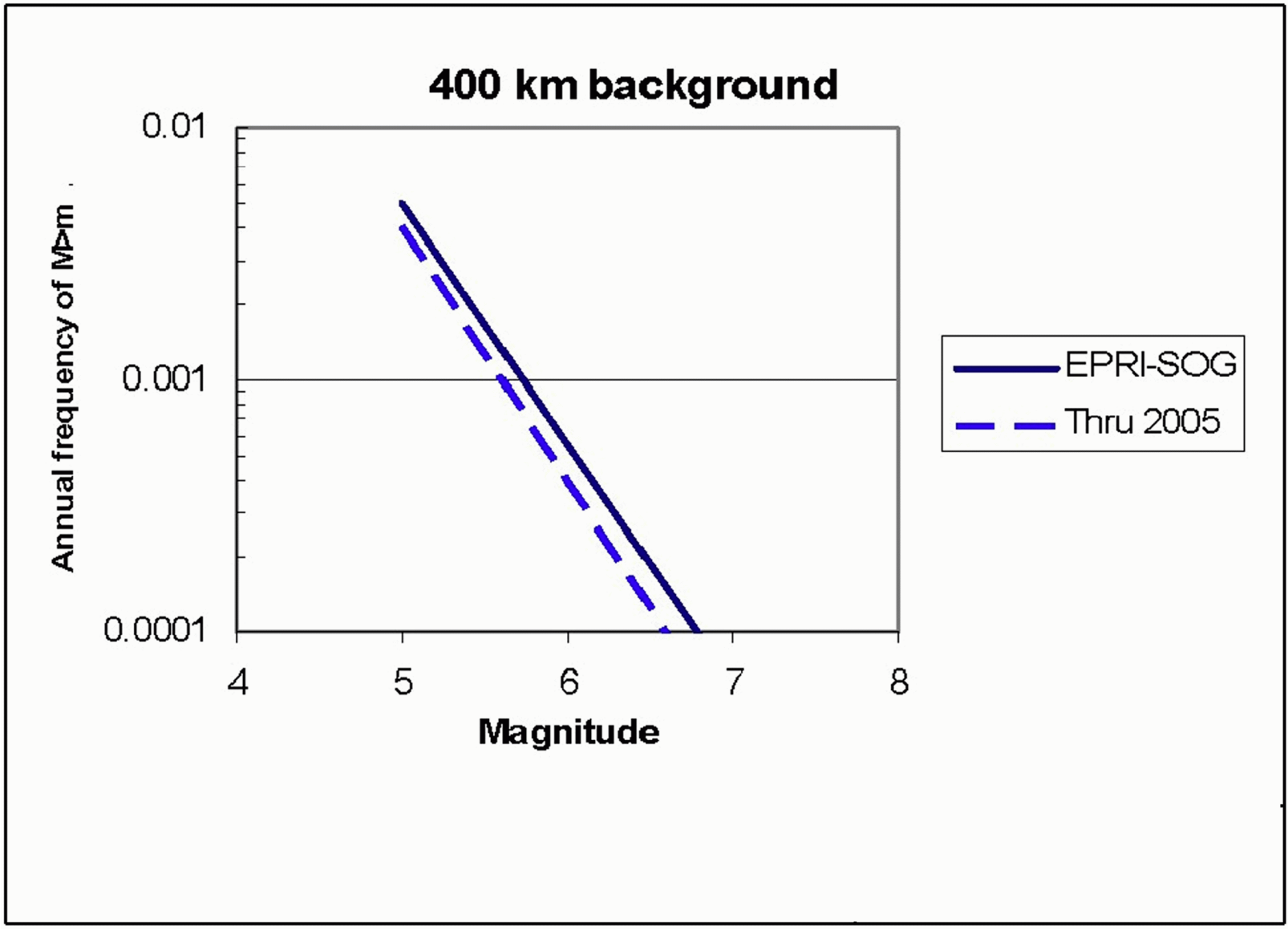


Figure 2.5-64—{Comparison of Seismicity Rate for Rondout Source 29, Using EPRI SOG Earthquake Catalog and Using Earthquake Catalog Updated Through 2005}

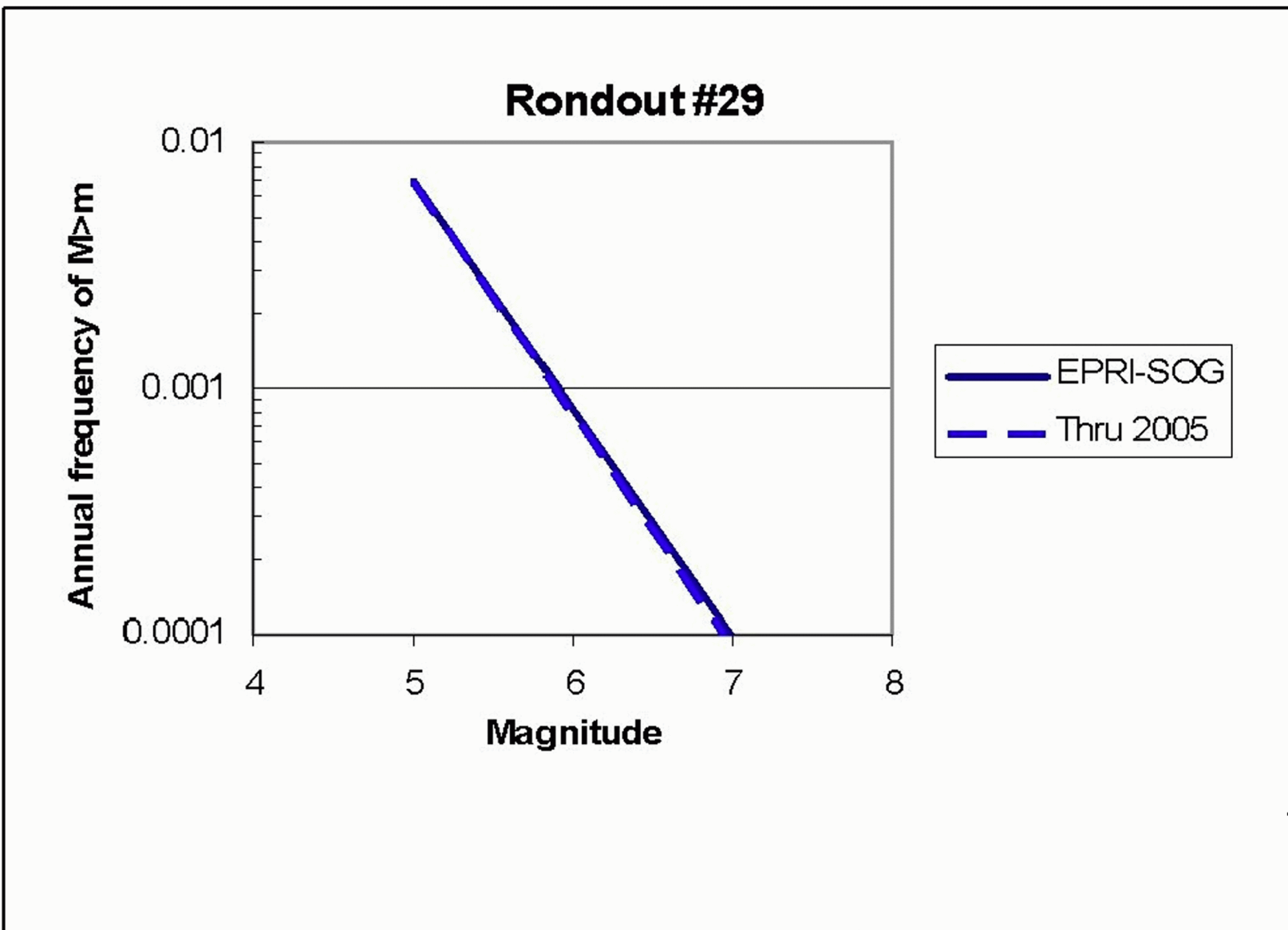


Figure 2.5-65—{Uniform Hazard Spectra for Rock Conditions at Seven Structural Frequencies for which Ground Motion Equations are Available}

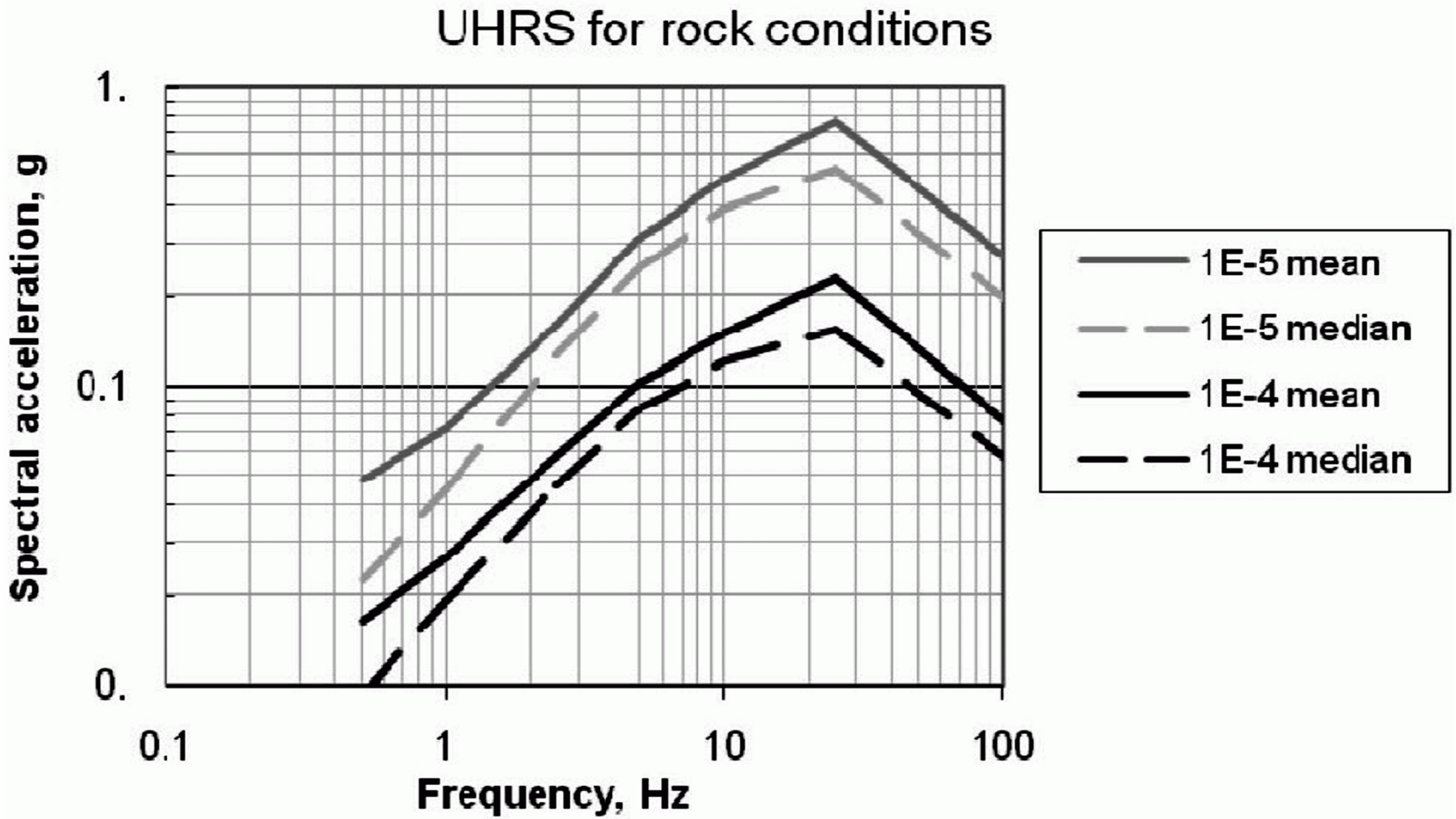


Figure 2.5-66—{Mean  $10^{-4}$  Rock Deaggregation for 1 and 2.5Hz}

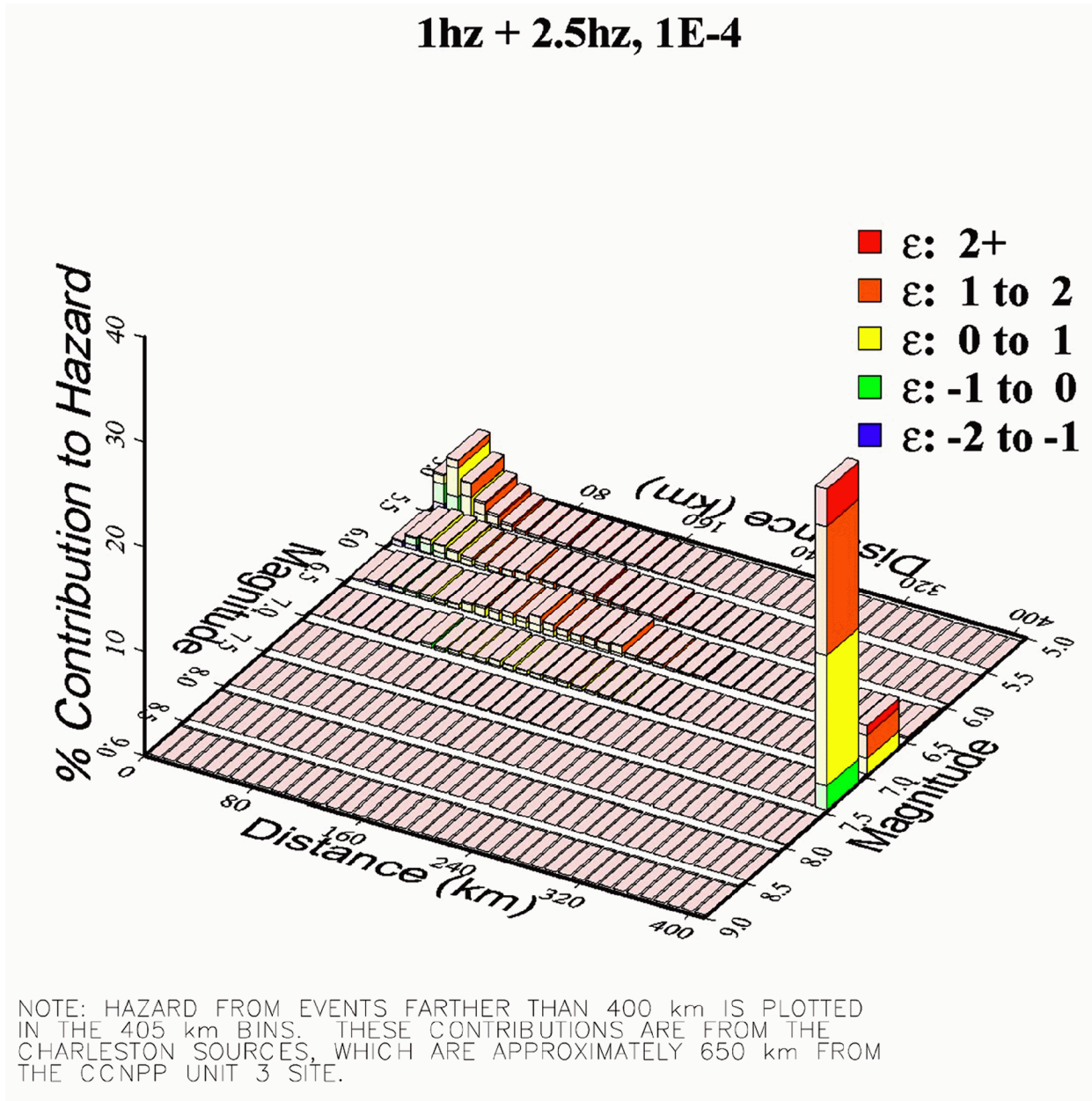




Figure 2.5-67—{Mean  $10^{-4}$  Rock Deaggregation for 5 and 10 Hz}

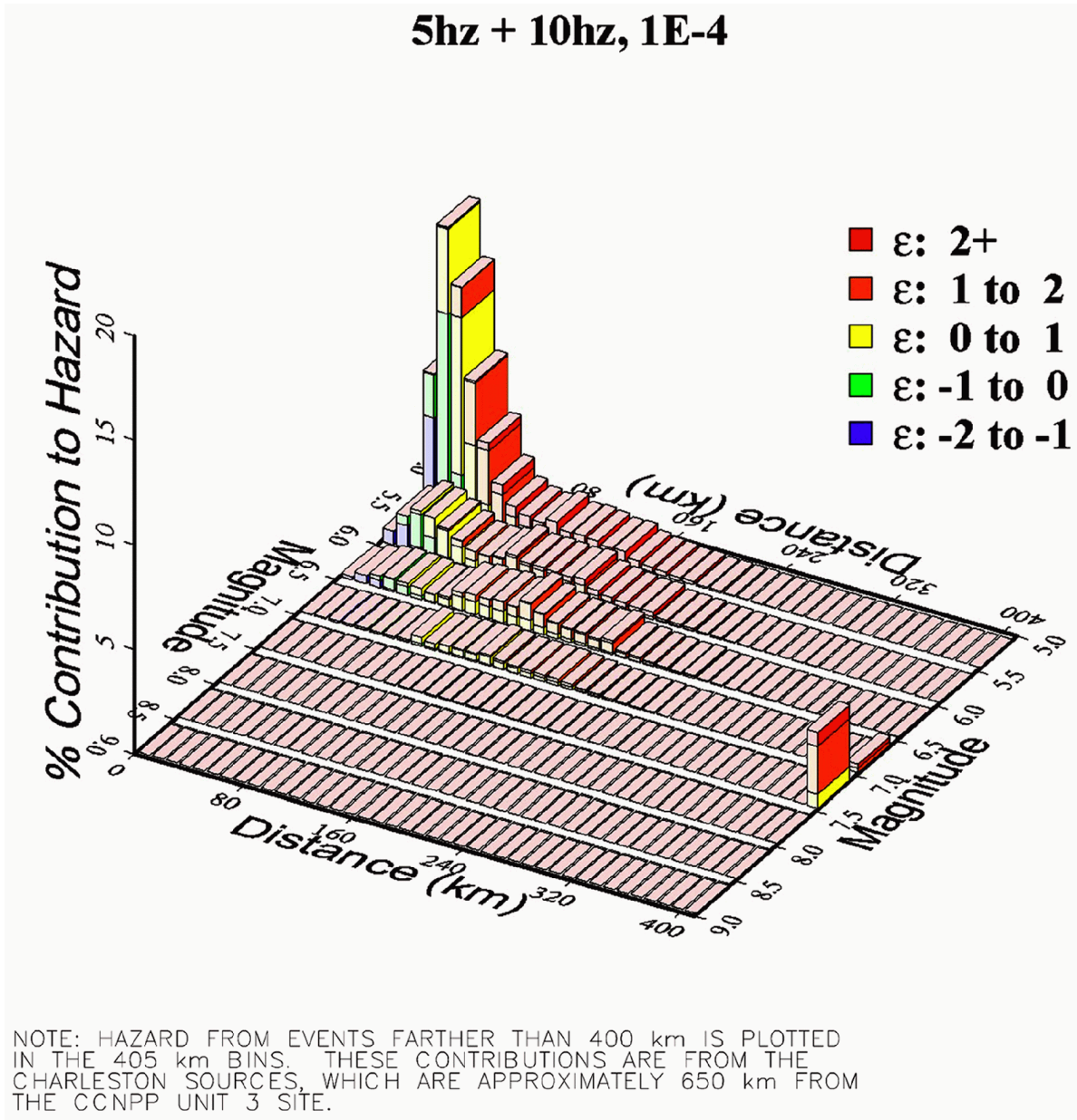


Figure 2.5-68—{Mean  $10^{-5}$  Rock Deaggregation for 1 and 2.5 Hz}

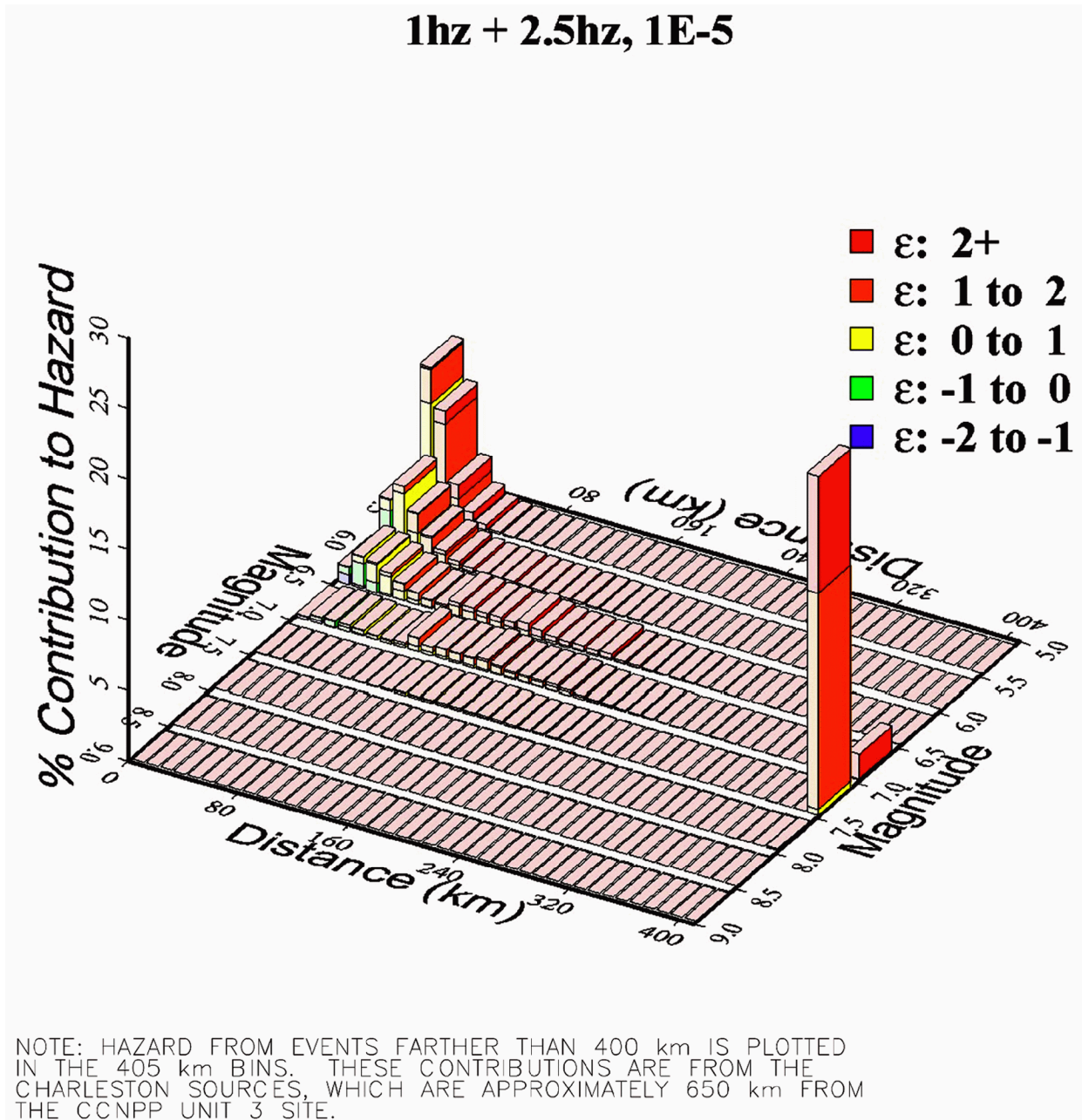


Figure 2.5-69—{Mean  $10^{-5}$  Rock Deaggregation for 5 and 10 Hz}

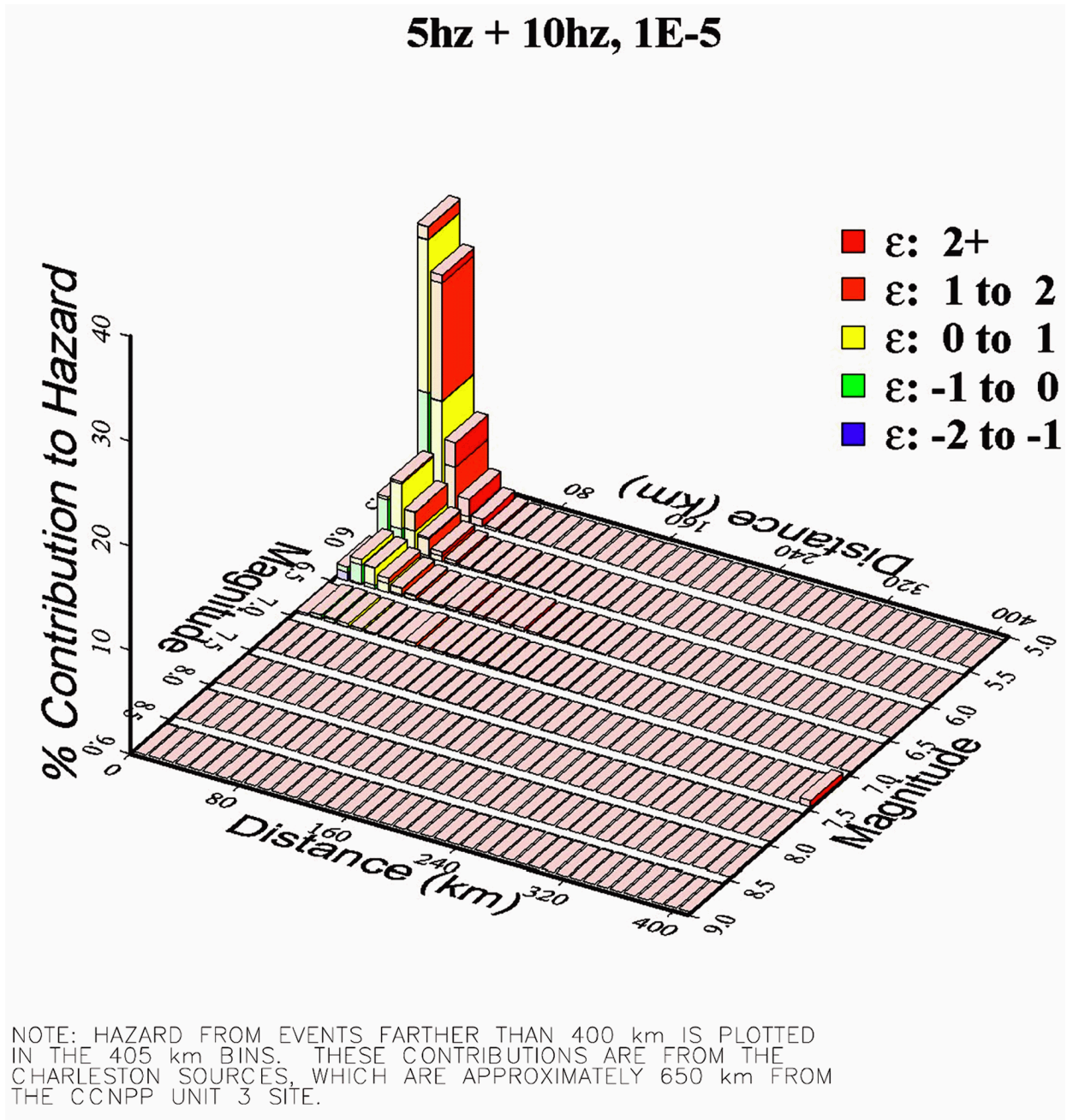


Figure 2.5-70—{ $10^{-4}$  Rock UHS Valus and Smooth Spectra Fit to HF and LF Spectral Shapes}

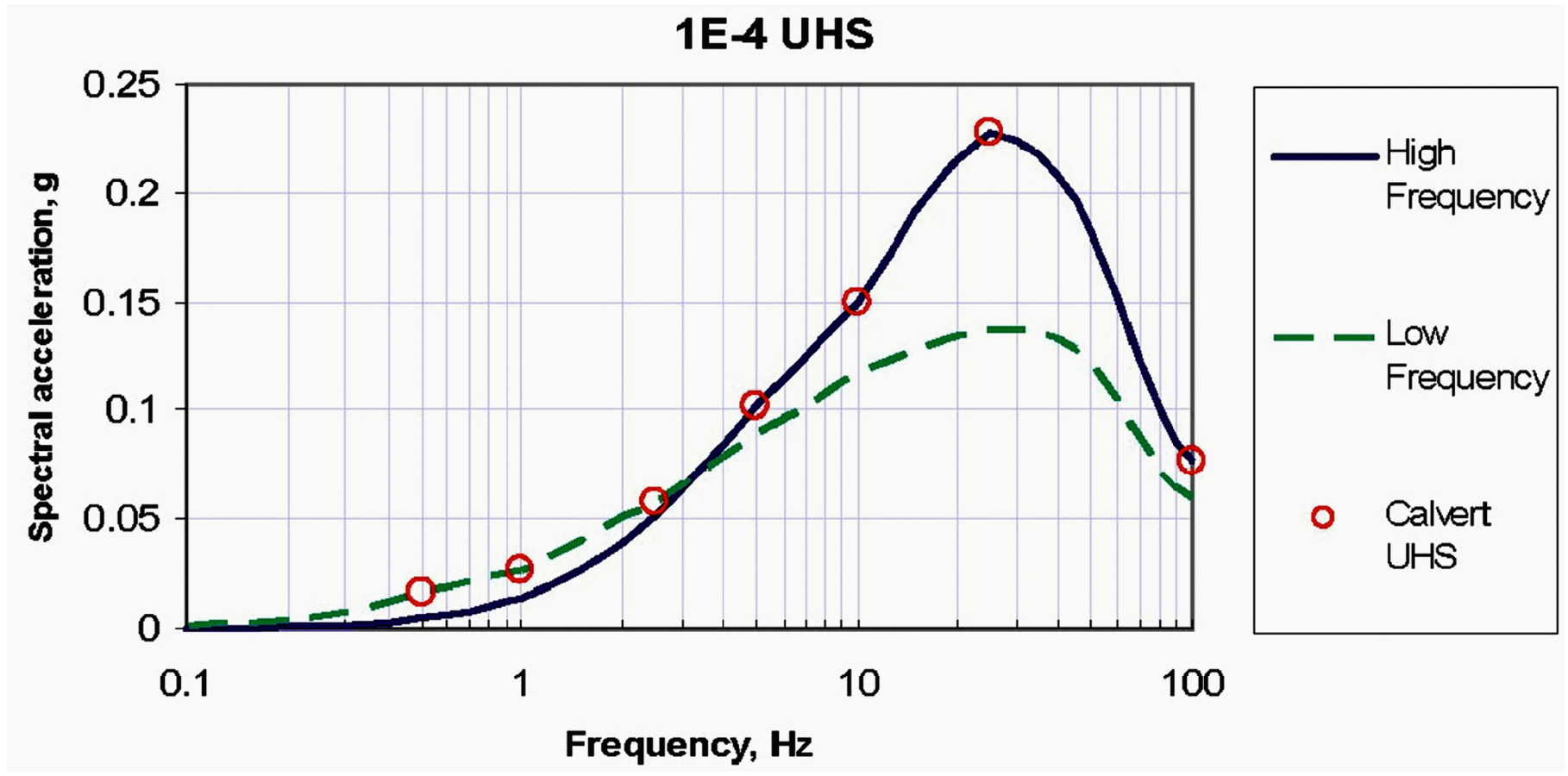


Figure 2.5-71—{ $10^{-5}$  Rock UHS Values and Smooth Spectra Fit to HF and LF Spectral Shapes}

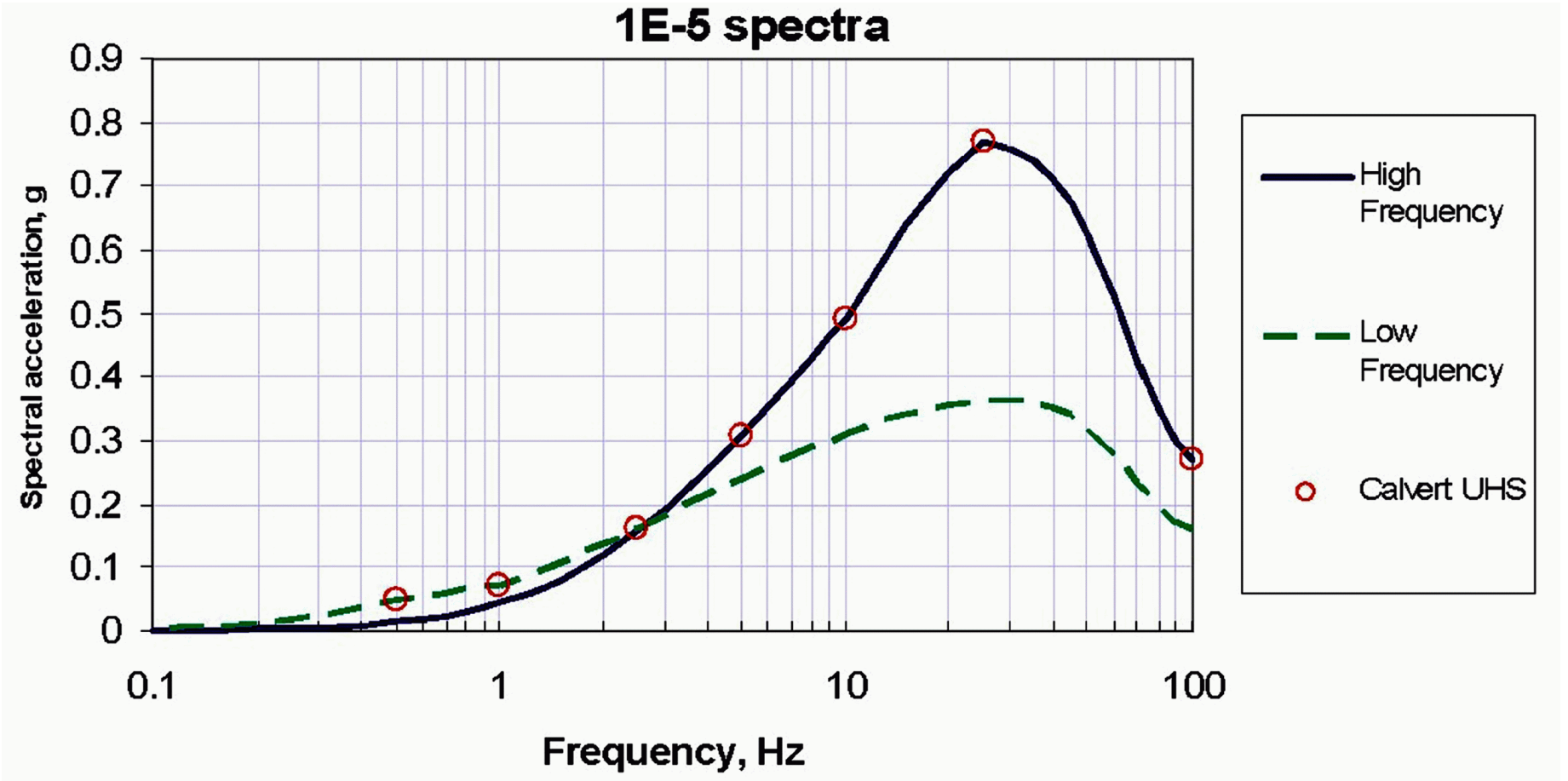
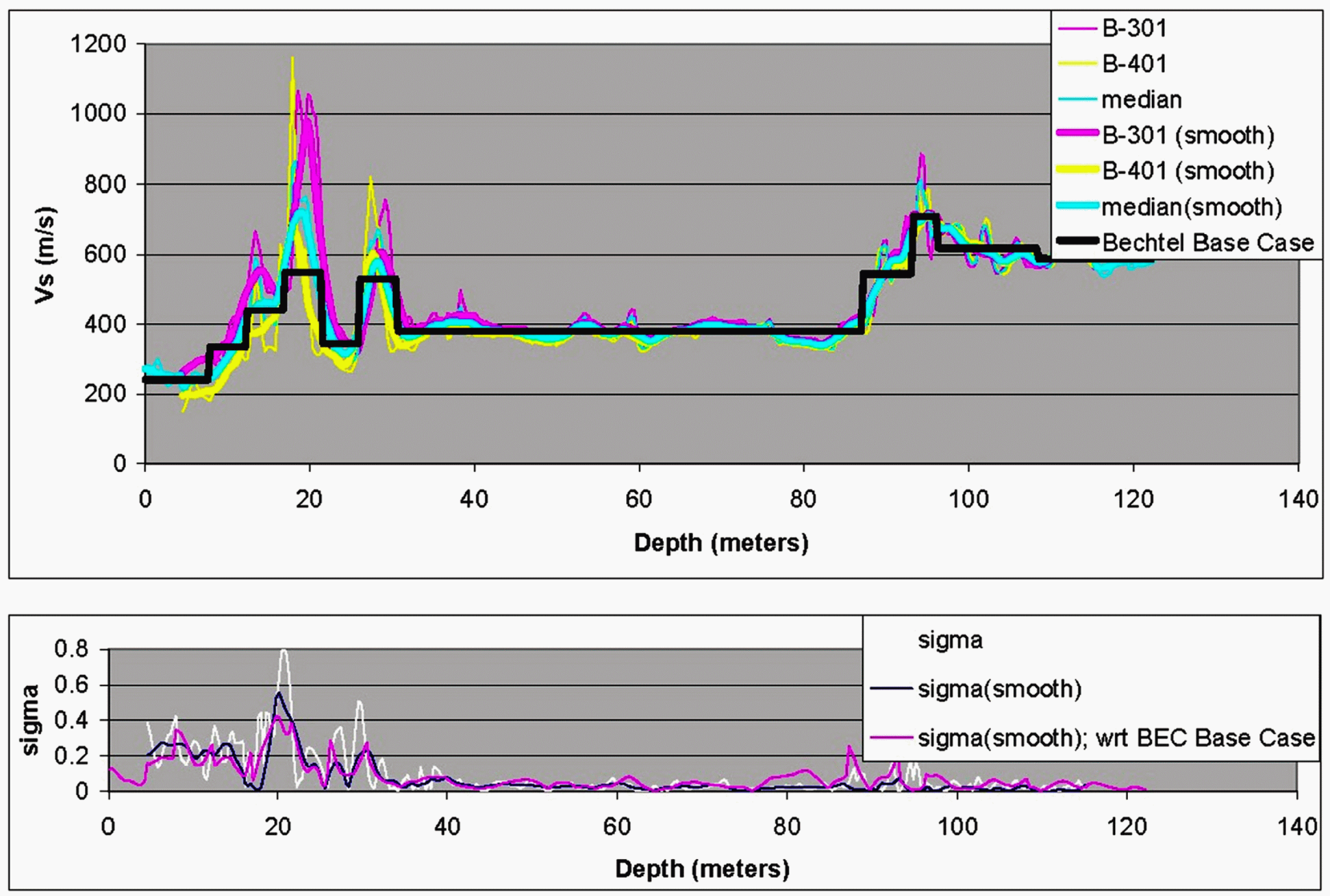
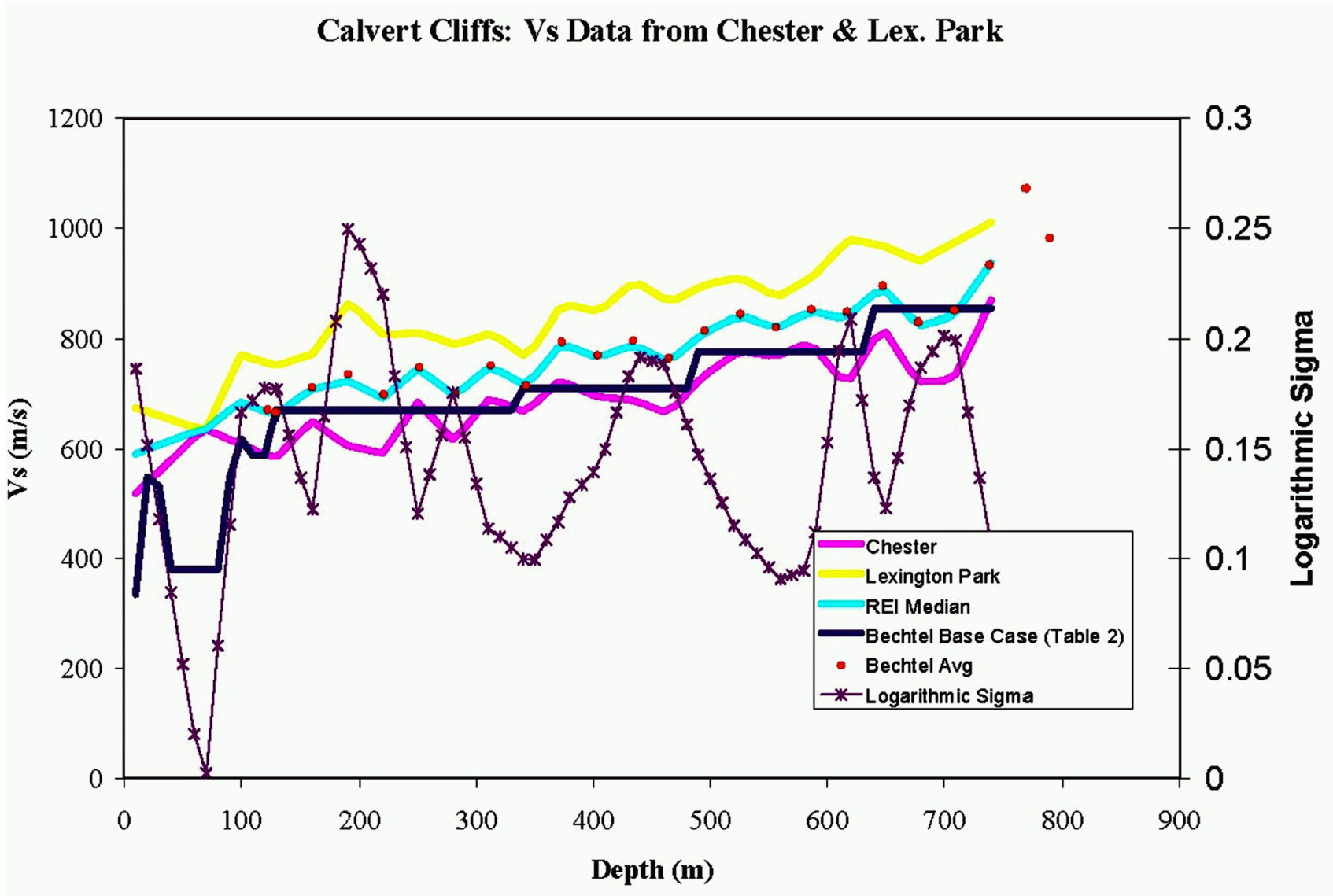


Figure 2.5-72—{Shear Wave Velocity ( $V_s$ ) and Its Logarithmic Standard Deviation for the Top 140 m}

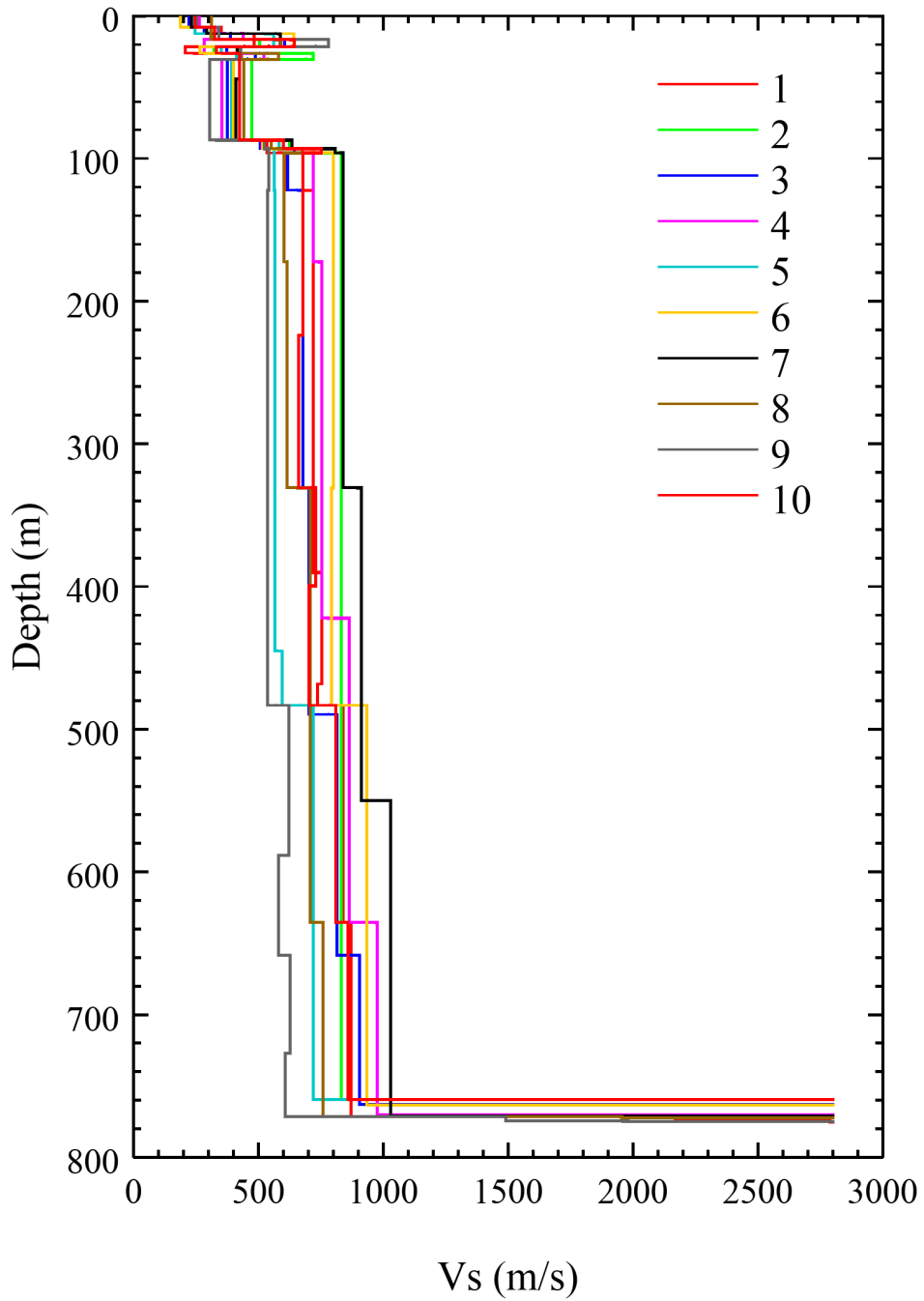


**Figure 2.5-73—{Shear-Wave Velocity ( $V_s$ ) and It's Logarithmic Standard Deviation, Used for depths from 140 m to 800 m Using Data From Chester and Lexington Park Wells}**



**Figure 2.5-74—{Shear-Wave Velocity (Vs) vs Depth or Profiles 1 through 10}**

Calvert Cliffs - Simulated Profiles: Velocity Profiles





**Figure 2.5-75—{Median (Mean of Logarithmic Values) ±Standard Deviation (σ of Log Values) of Shear Wave Velocity (Vs) vs Depth for All 60 Profiles (Thin Solid and Dashed Lines, Compared to Median VS Profile (red))}**

Calvert Cliffs - Simulated Profiles: Mean +/- Sigma

