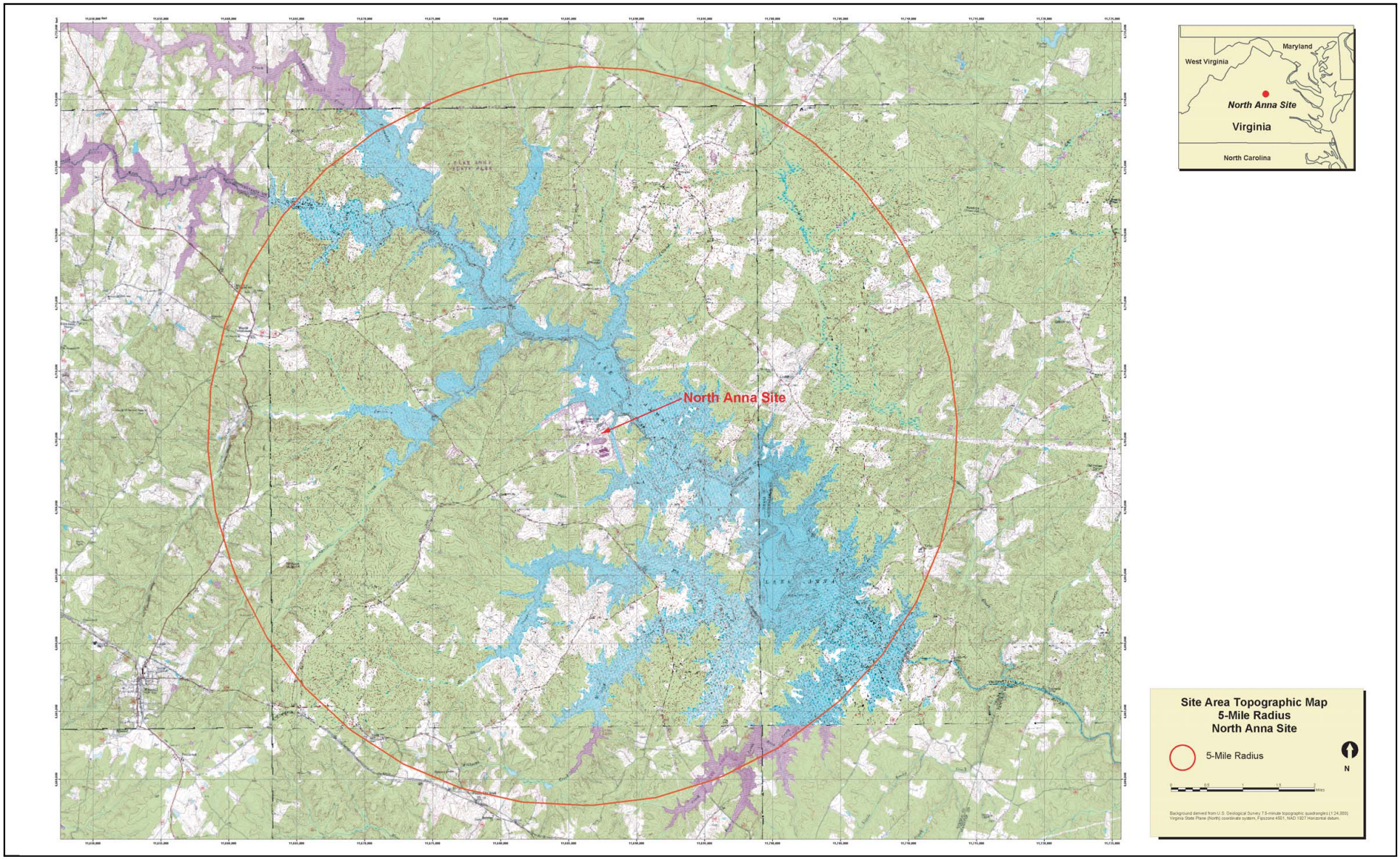


Figure 2.5-15 Site Area Topographic Map (5-Mile Radius)

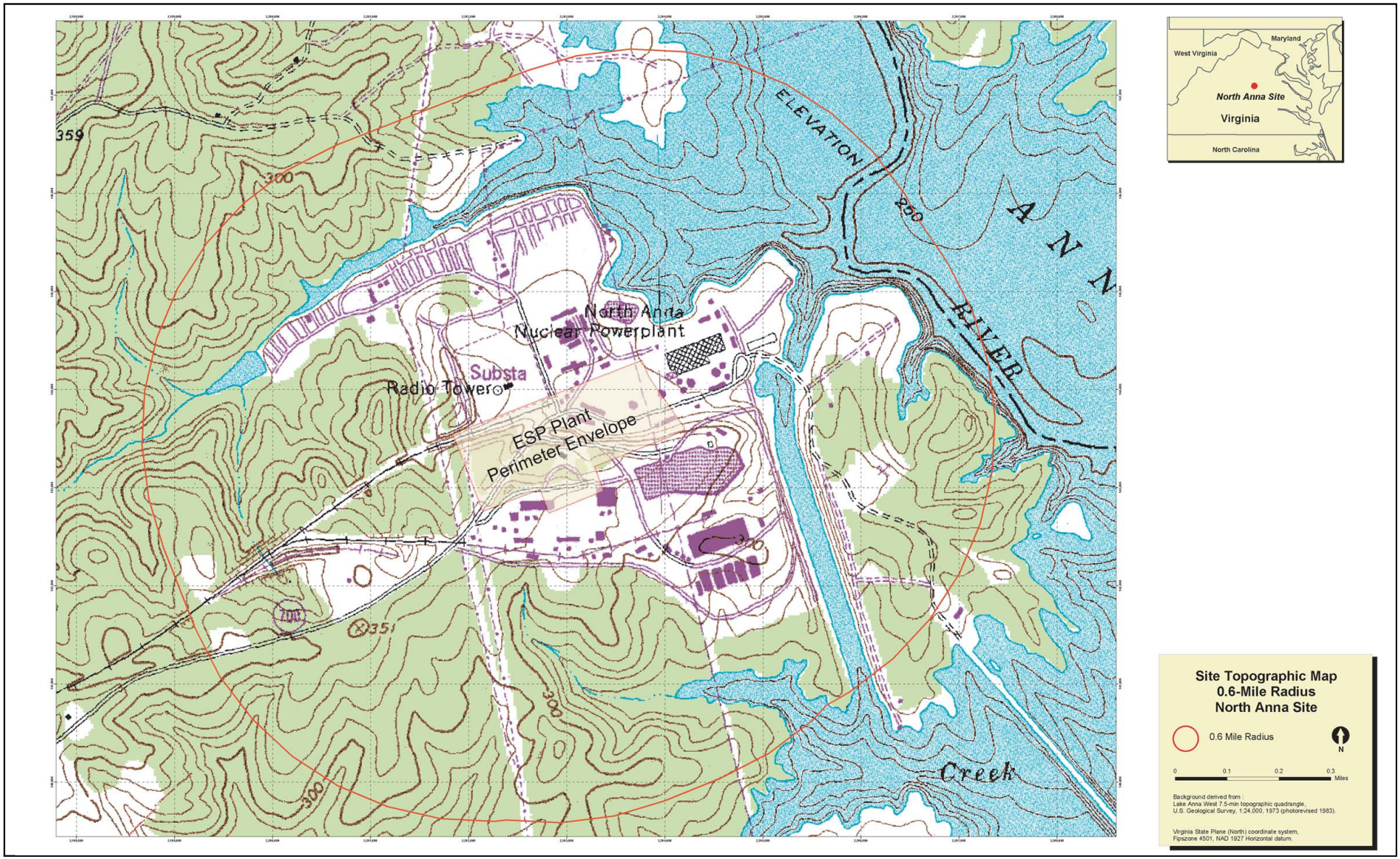
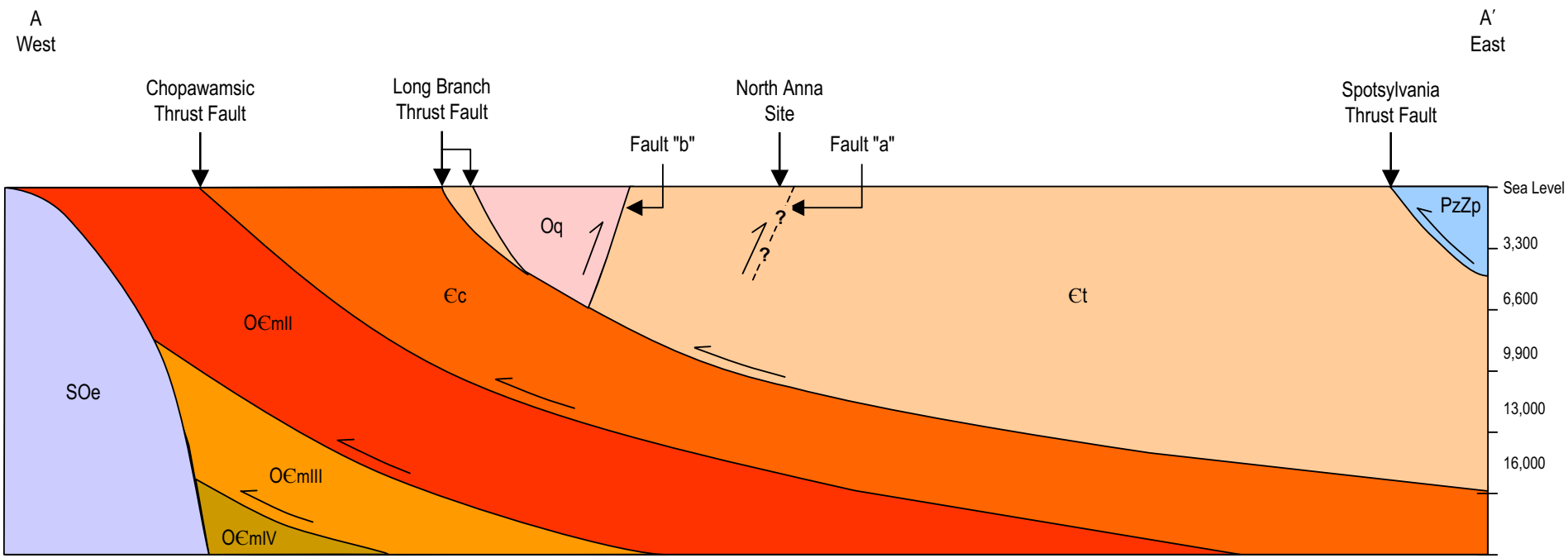


Figure 2.5-16 Site Topographic Map (0.6-Mile Radius)



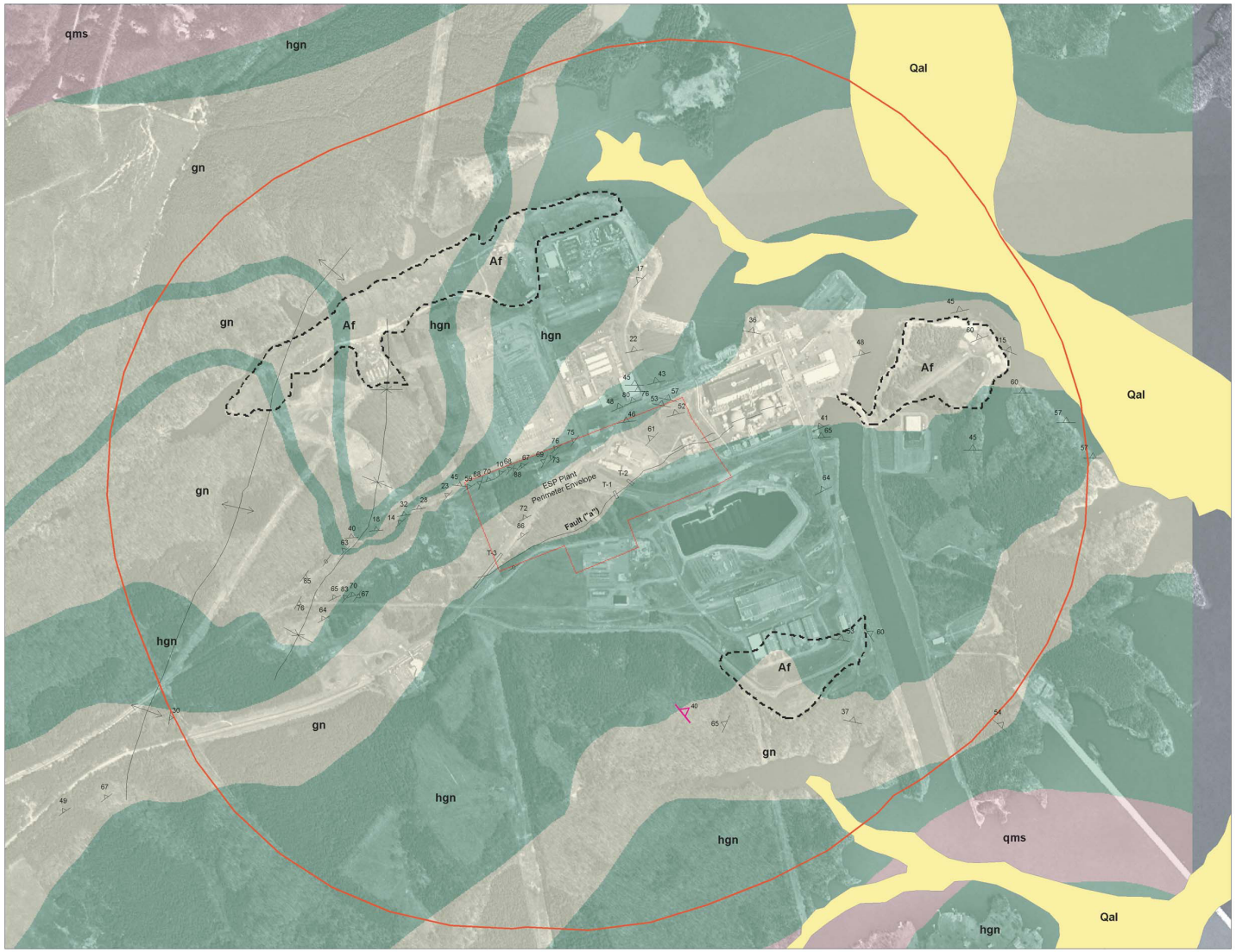
0 0.4 0.8 1.2 1.6 2.0 Miles

Scale 1:24,000

Source: Mixon and Others, 2000

PzZp	Po River Metamorphic Suite (Late Pre-cambrian to early Paleozoic)
Єt	Ta River Metamorphic Suite (Cambrian and/or Ordovician)
Єc	Chopawamsic Formation (Cambrian and/or Ordovician)
OЄmII	Melange Zone II (Cambrian and/or Ordovician)
OЄmIII	Melange Zone III (Cambrian and/or Ordovician)
OЄmIV	Melange Zone IV (Cambrian and/or Ordovician)
Oq	Quantico Formation (Ordovician)
SOe	Ellisville Pluton (Silurian)

Figure 2.5-17 Site Area Geologic Cross Section A-A' (5-Mile Radius)



Geologic Units

Af	Artificial fill (major areas of fill shown)
Qal	Quaternary alluvium
gn	Granite gneiss, massive with some biotite granite gneiss
hgn	Interbedded hornblende gneiss, biotite granite gniess, and granite gneiss
qms	Quartz mica schist

Synclinal axis
Anticlinal axis
Strike and dip of foliation
Strike and dip of foliation (vertical)
T-1 Trench

Adapted from Dames & Moore, 1973 and field work by William Lettis and Associates, March 2003.

Site Geologic Map
0.6-Mile Radius
North Anna Site

0.6 Mile Radius

N

0 0.1 0.2 0.3 Miles

Background derived from :
U.S. Geological Survey Digital Orthophotoquads

Virginia State Plane (North) coordinate system, Fipszone 4501, NAD 1927 Horizontal datum.

Figure 2.5-18 Site Geologic Map (0.6-Mile Radius)

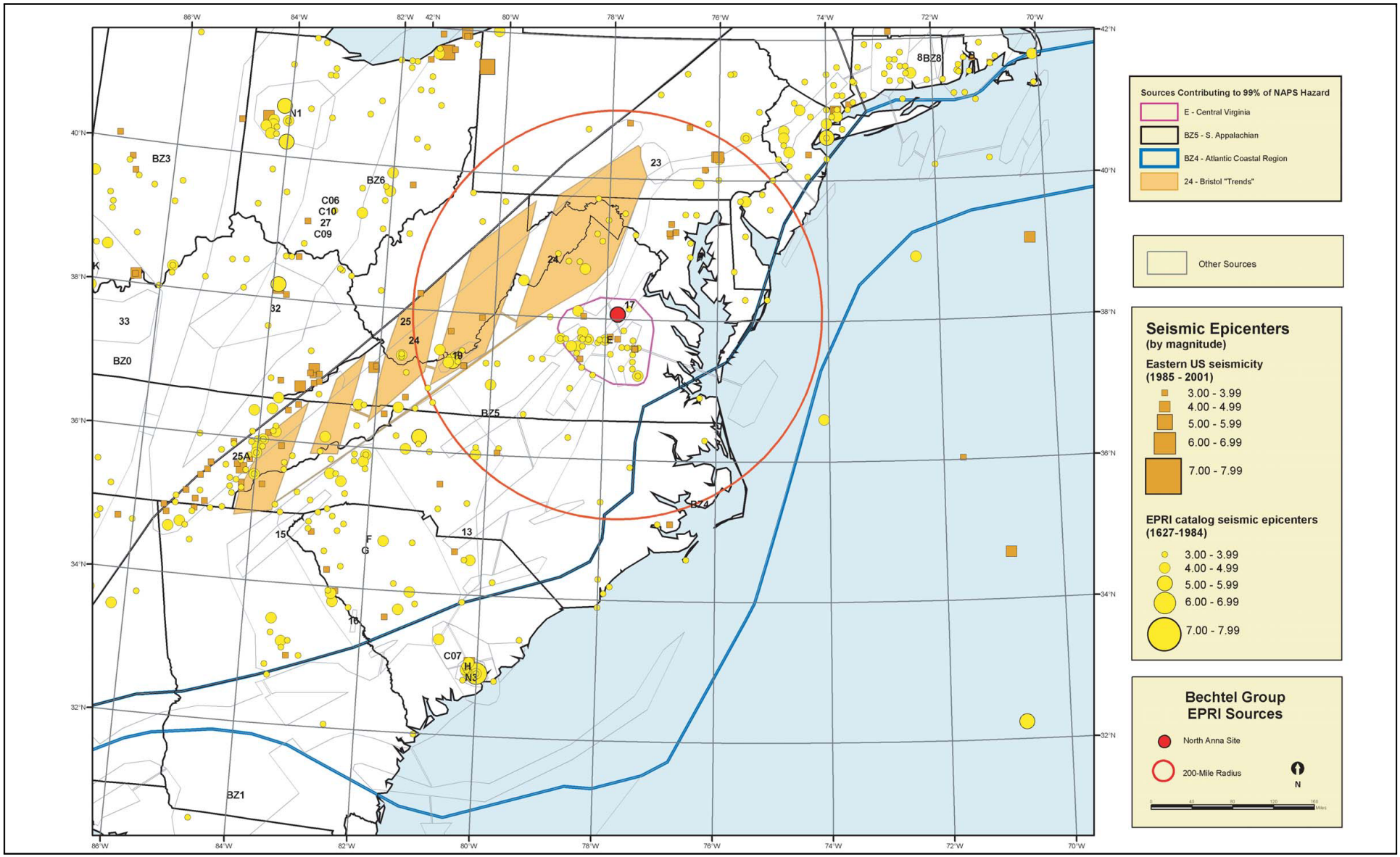


Figure 2.5-19 Bechtel Group EPRI Sources

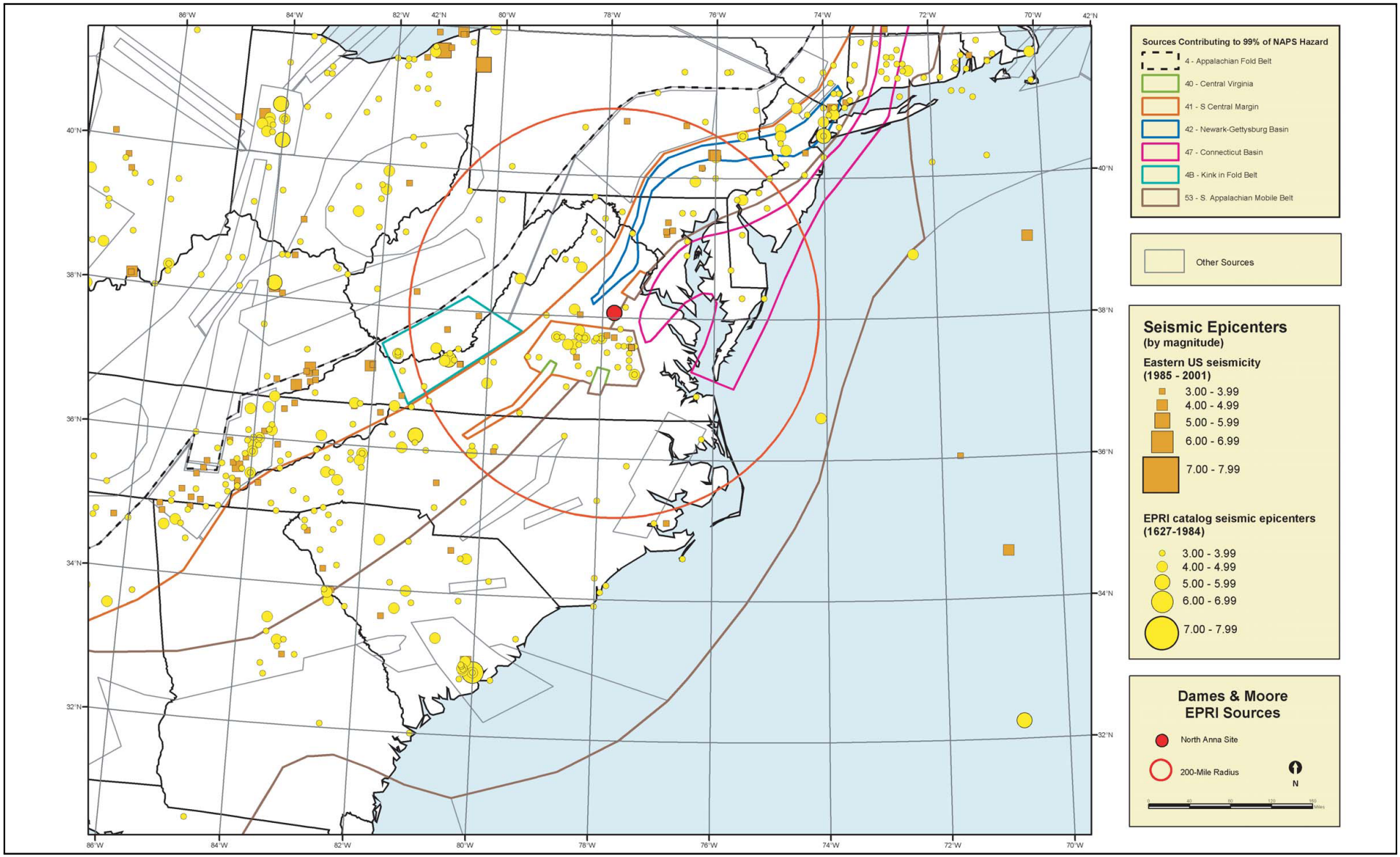


Figure 2.5-20 Dames & Moore EPRI Sources

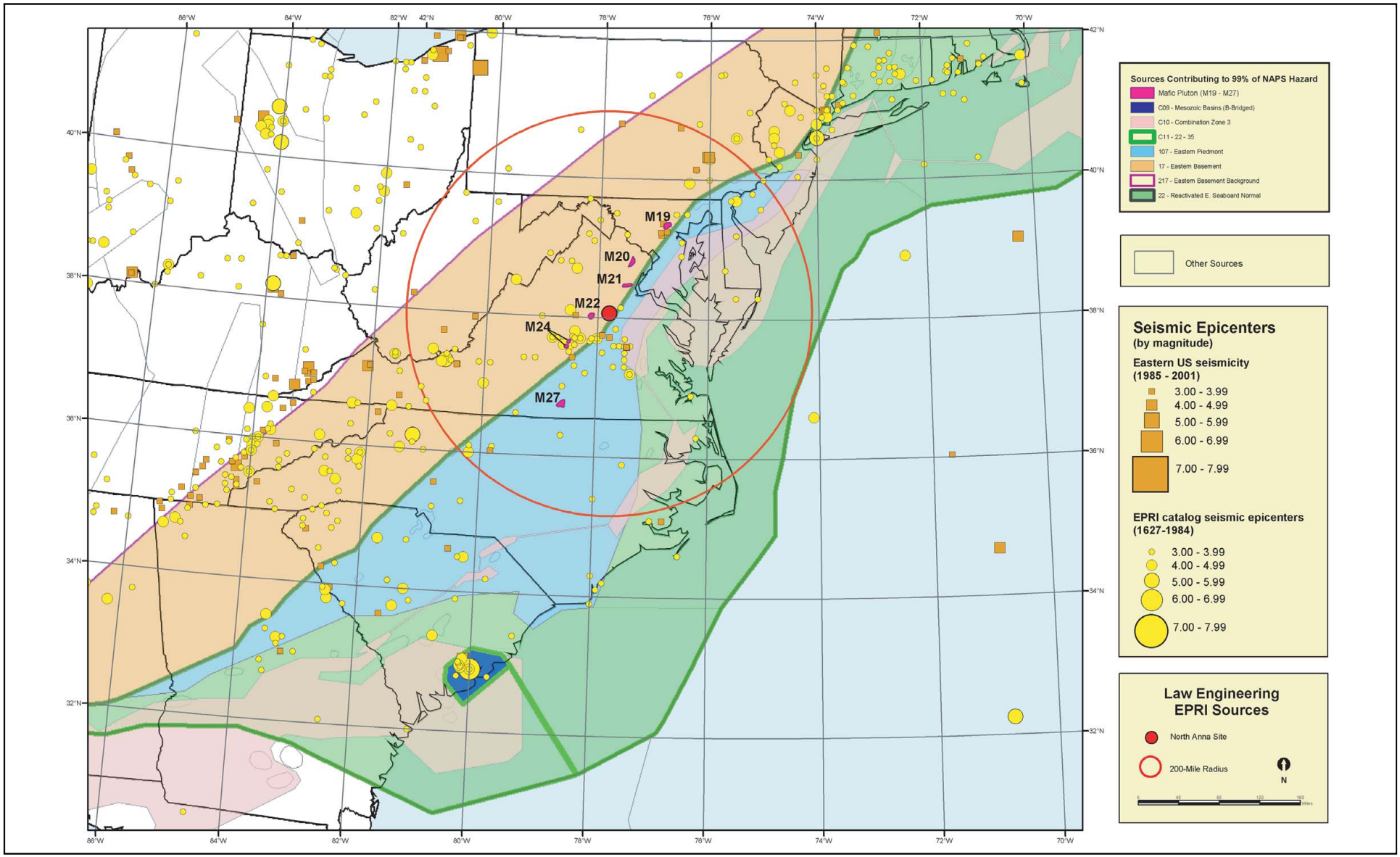


Figure 2.5-21 Law Engineering EPRI Sources

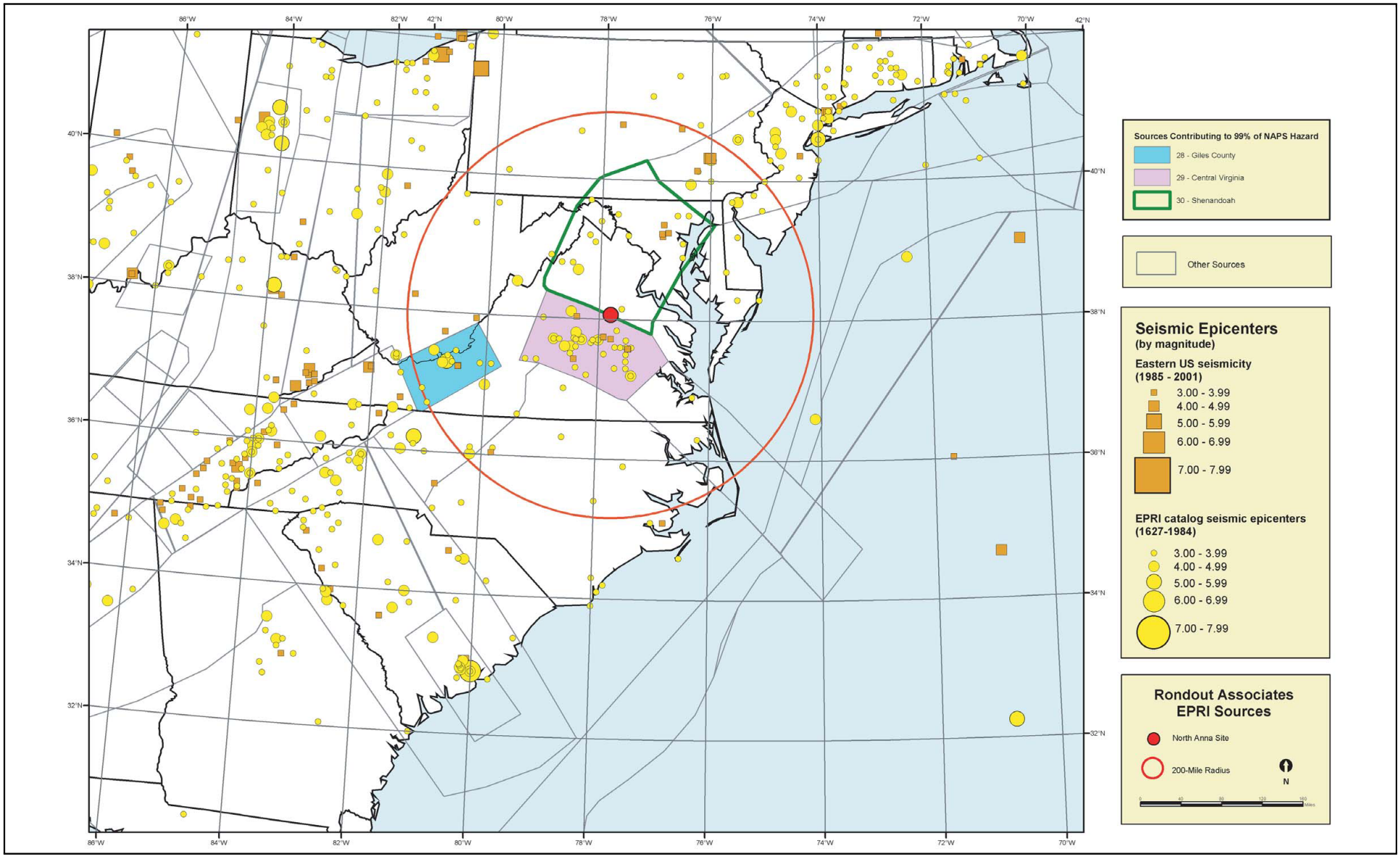


Figure 2.5-22 Rondout Associates EPRI Sources

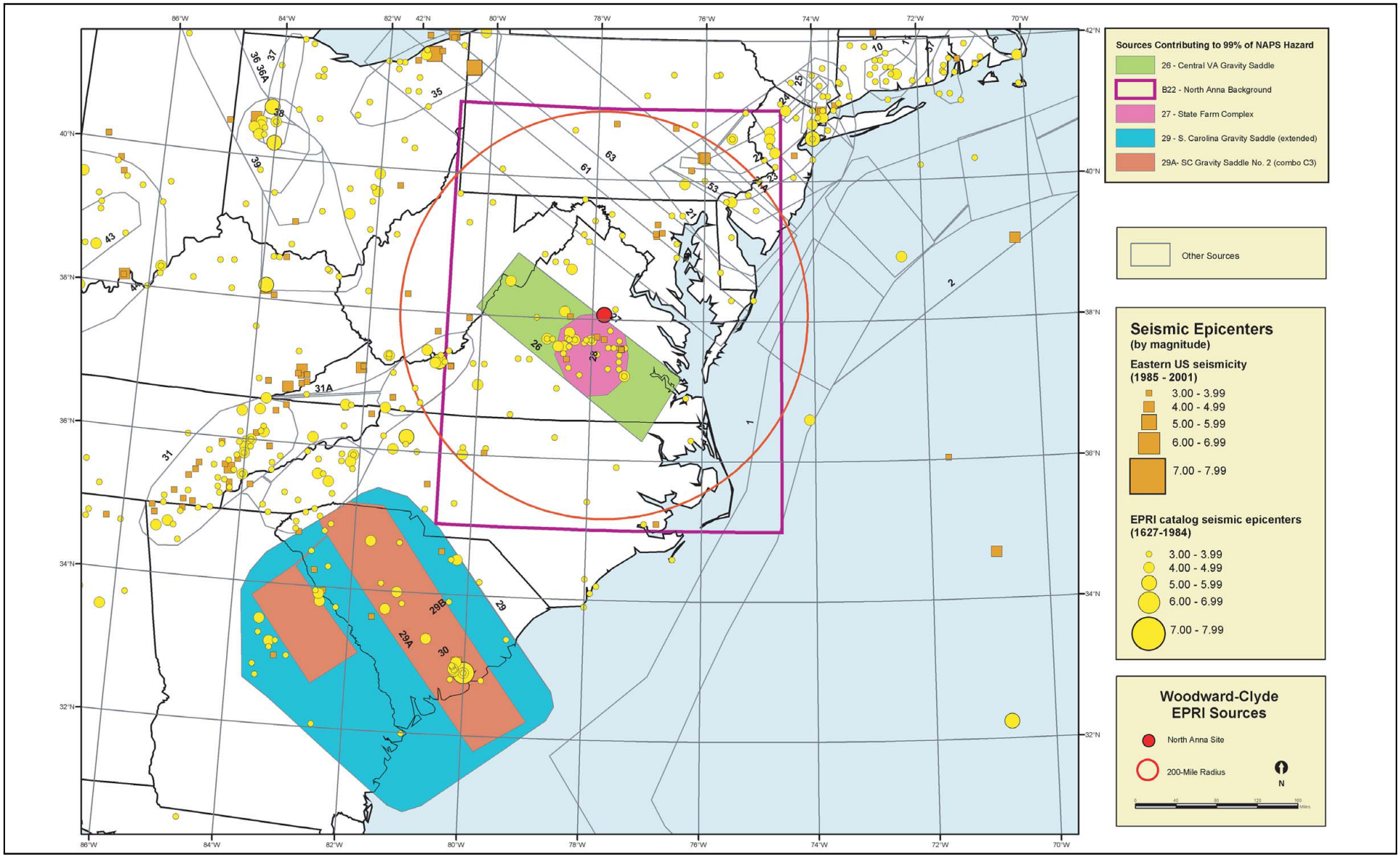


Figure 2.5-23 Woodward-Clyde EPRI Sources

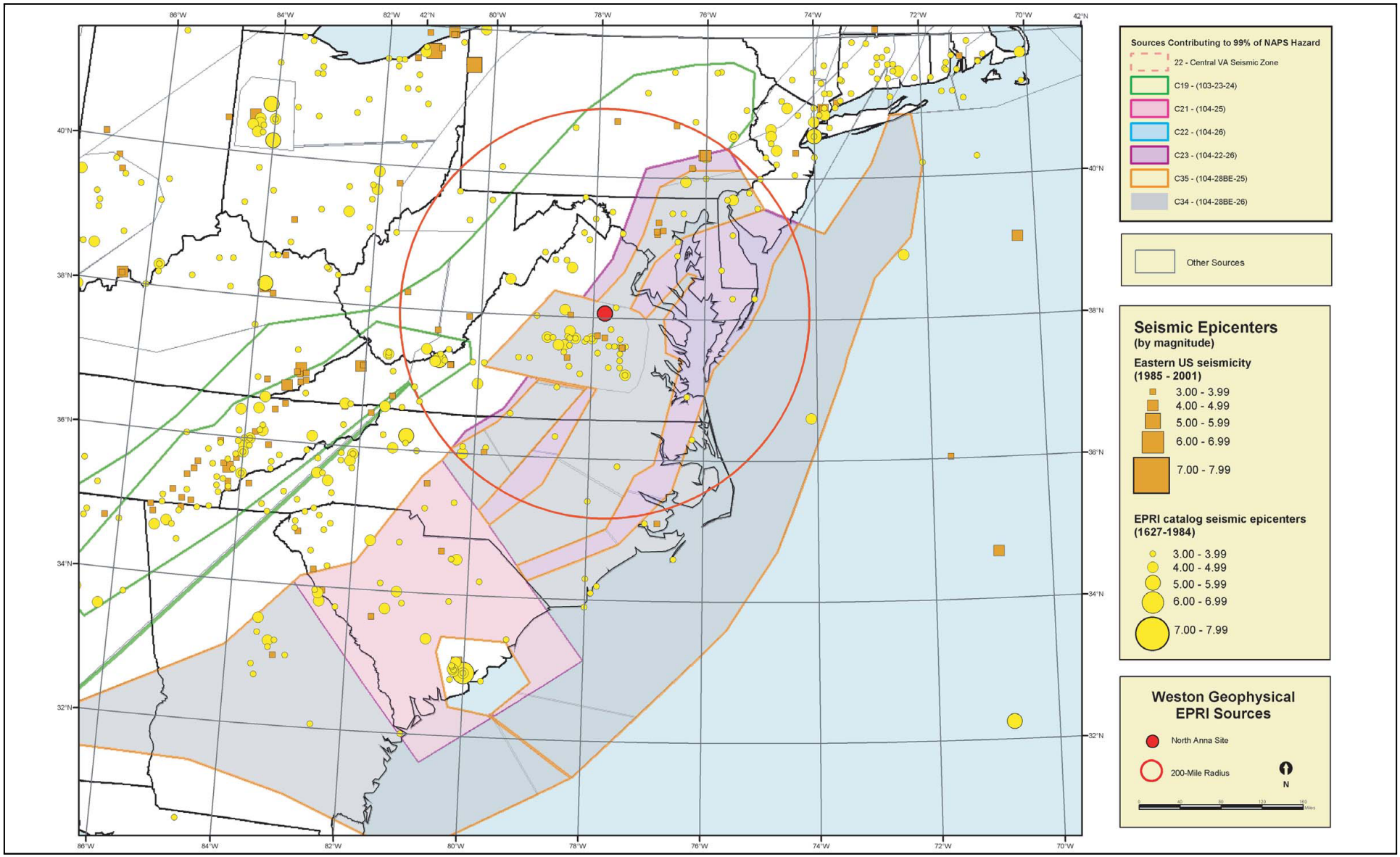


Figure 2.5-24 Weston EPRI Sources

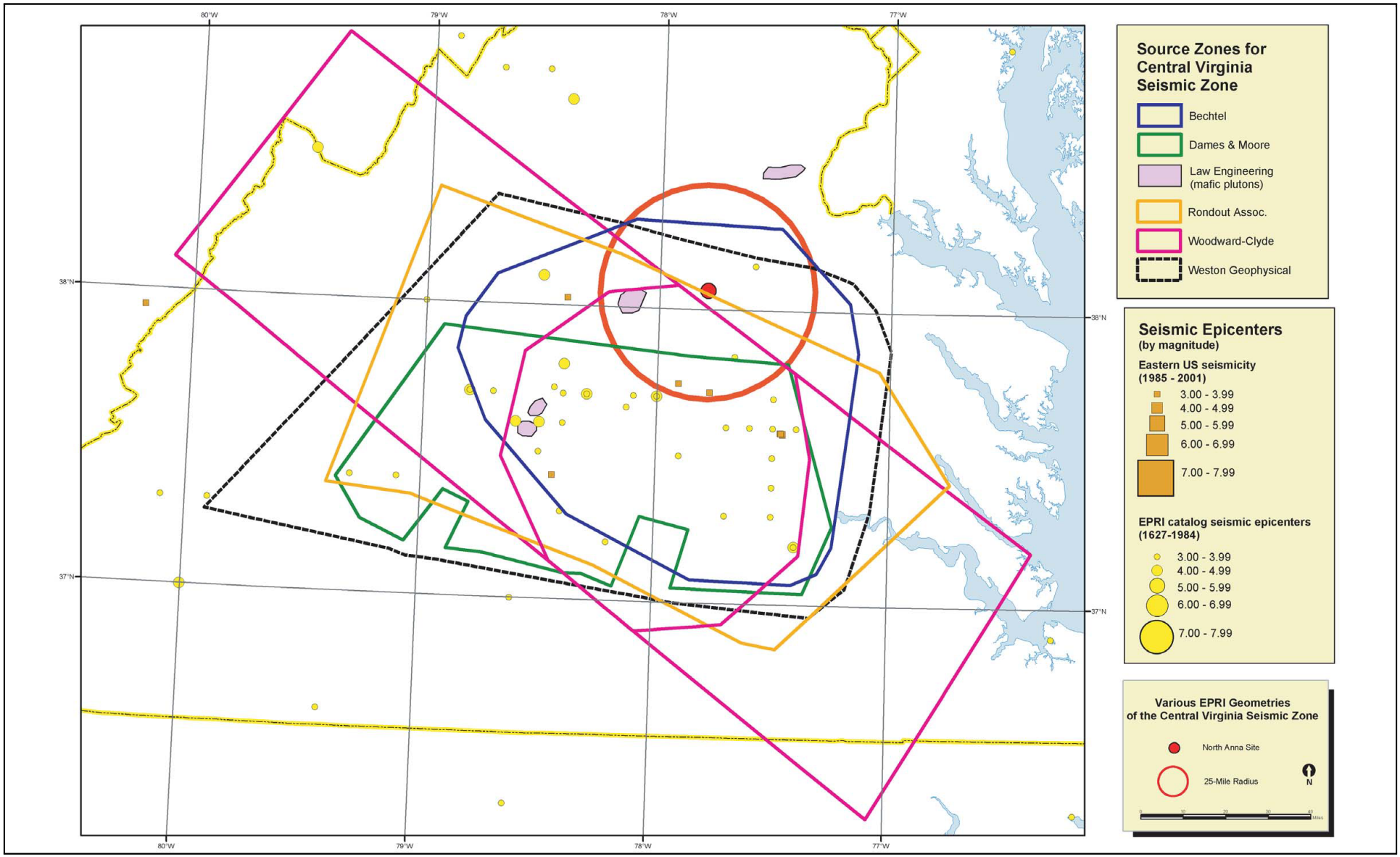


Figure 2.5-25 Various EPRI Geometries of the Central Virginia Seismic Zone

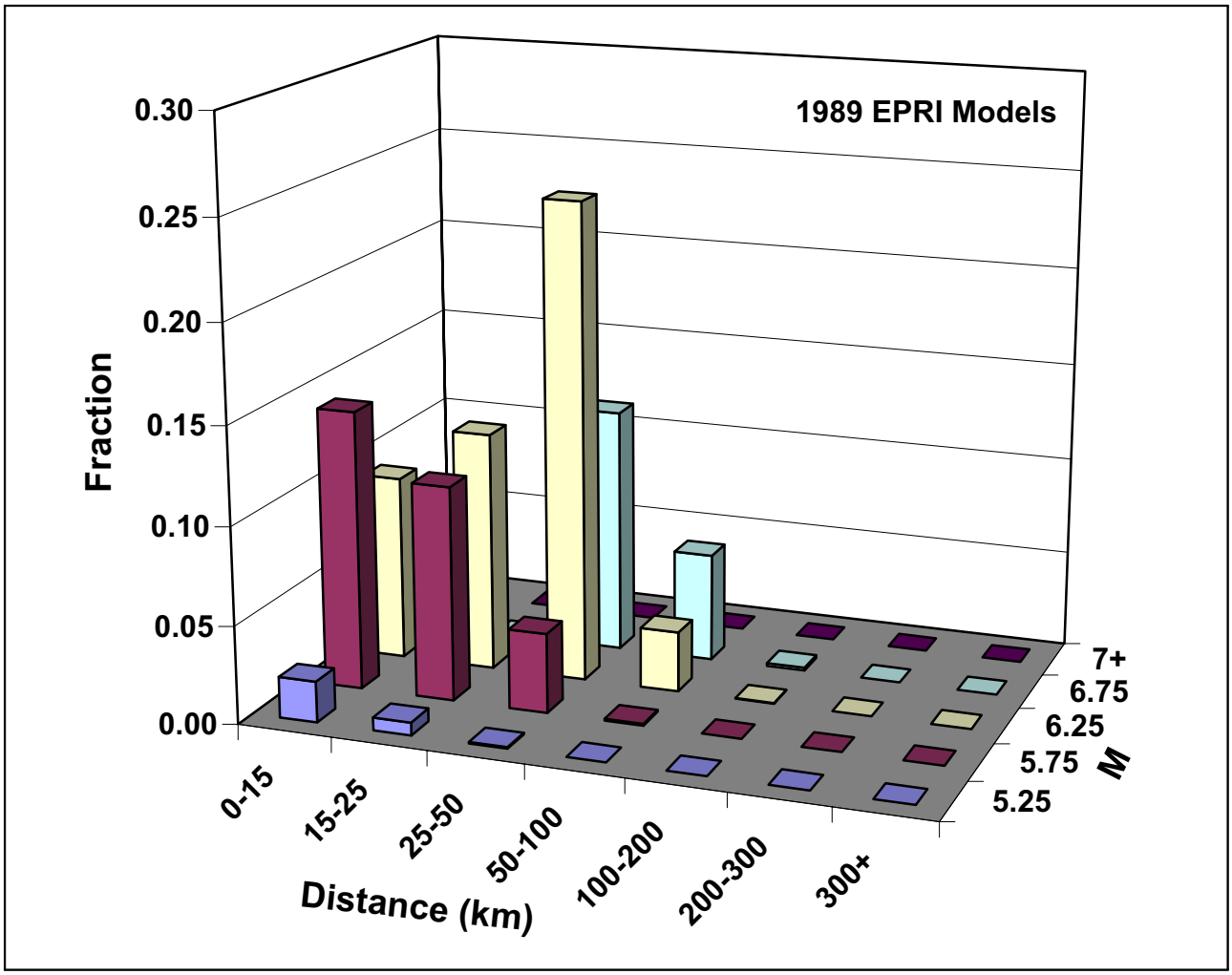


Figure 2.5-26 Low-Frequency, 10^{-5} Median, Magnitude-Distance Deaggregation Using 1989 EPRI Sources and Ground Motion

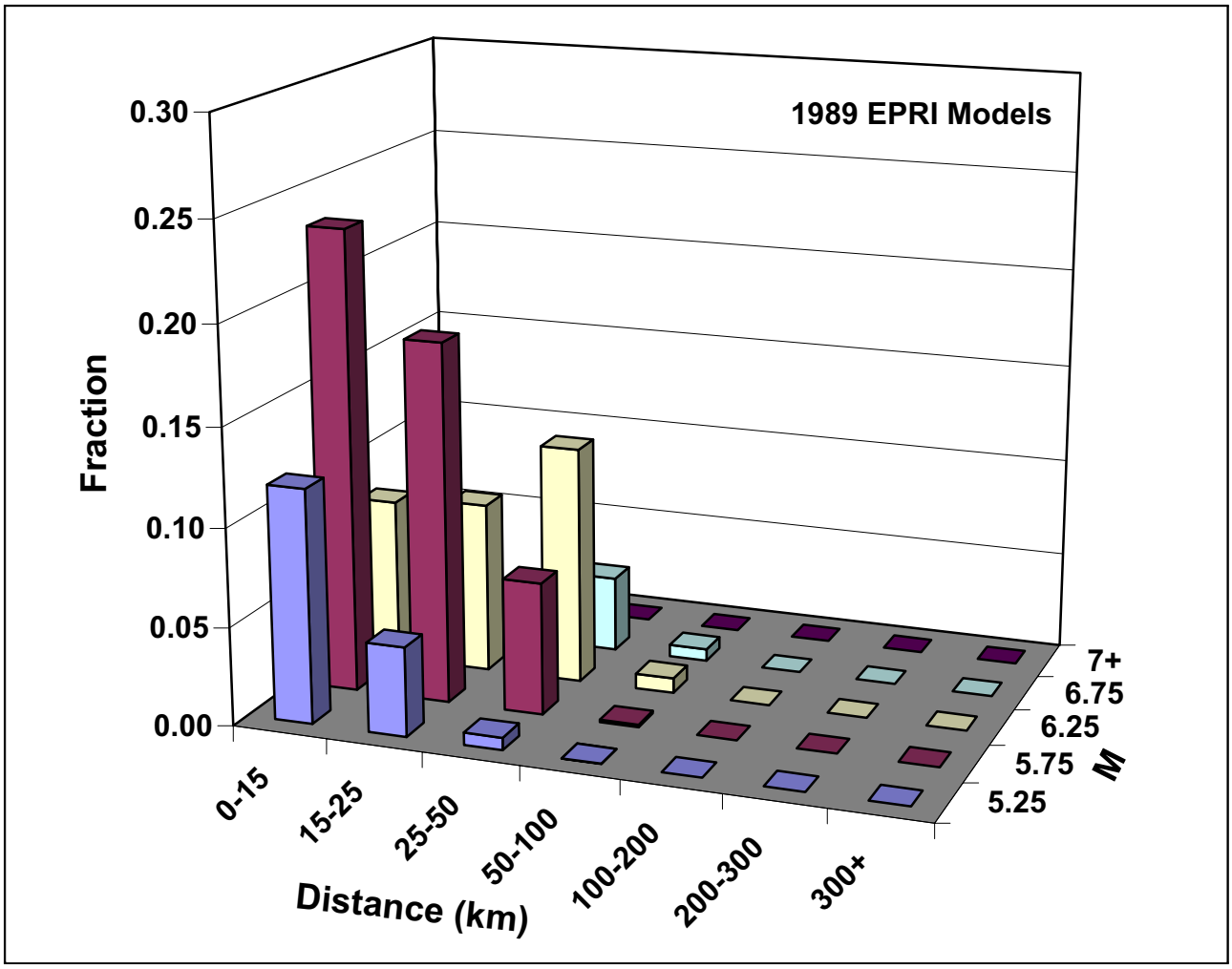


Figure 2.5-27 High-Frequency, 10^{-5} Median, Magnitude-Distance Deaggregation Using 1989 EPRI Sources and Ground Motion

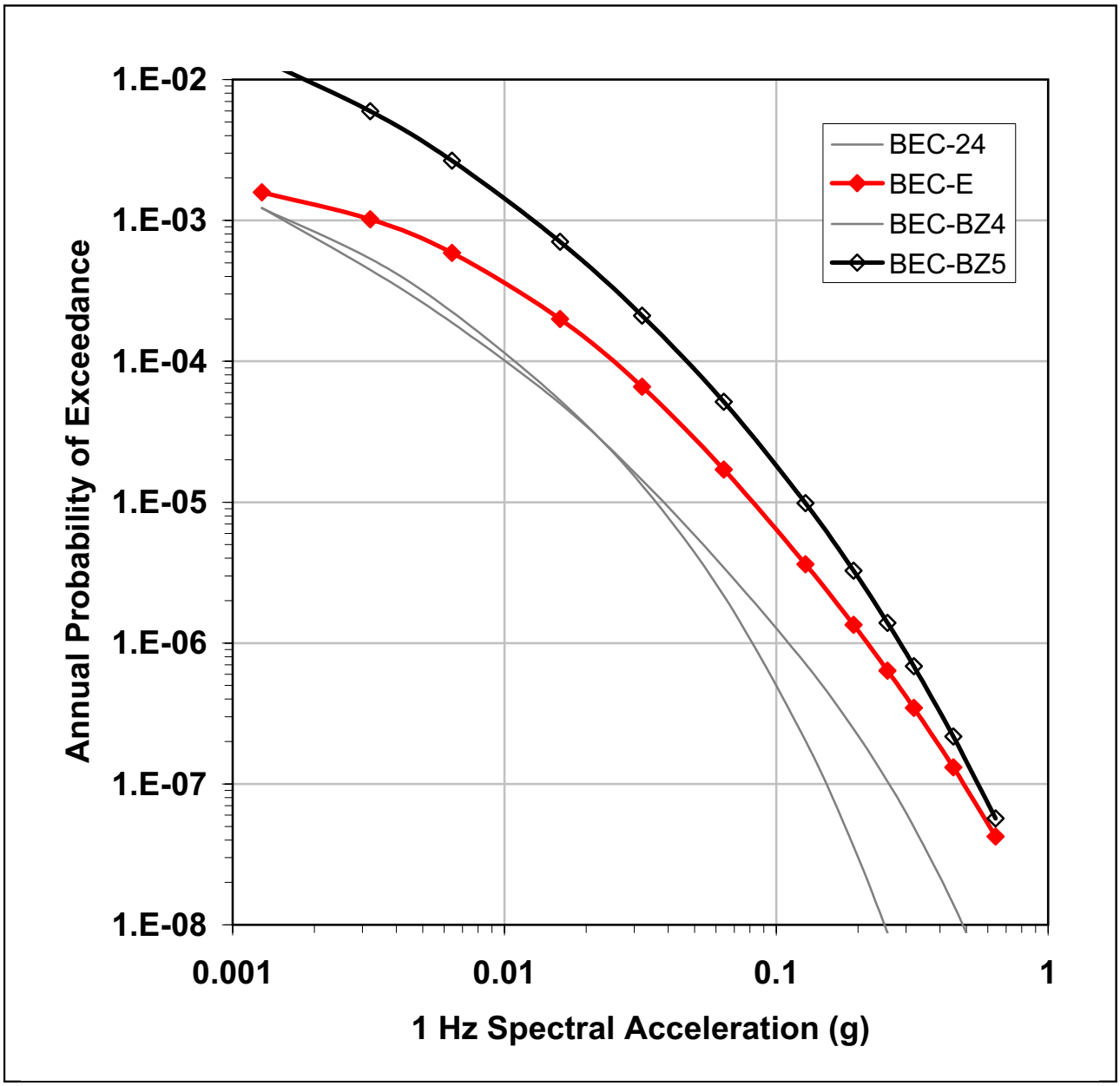


Figure 2.5-28 1989 EPRI 1 Hz Mean Hazard Contribution by Source (Bechtel); Sources Contributing Most to ESP Site Hazard Are Emphasized

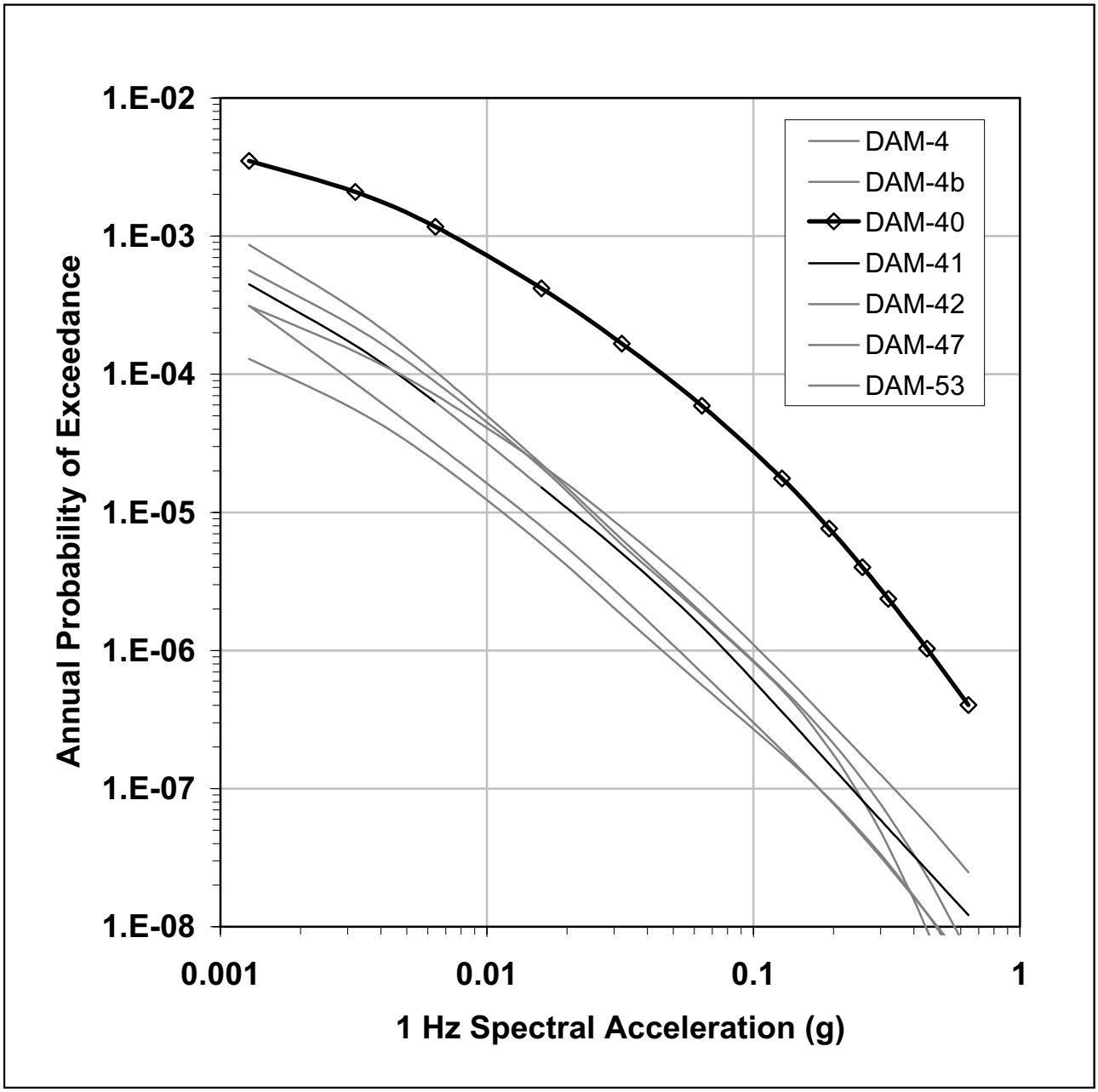


Figure 2.5-29 1989 EPRI Hazard 1 Hz Mean Contribution by Source (Dames & Moore); Sources Contributing Most to ESP Site Hazard Are Emphasized

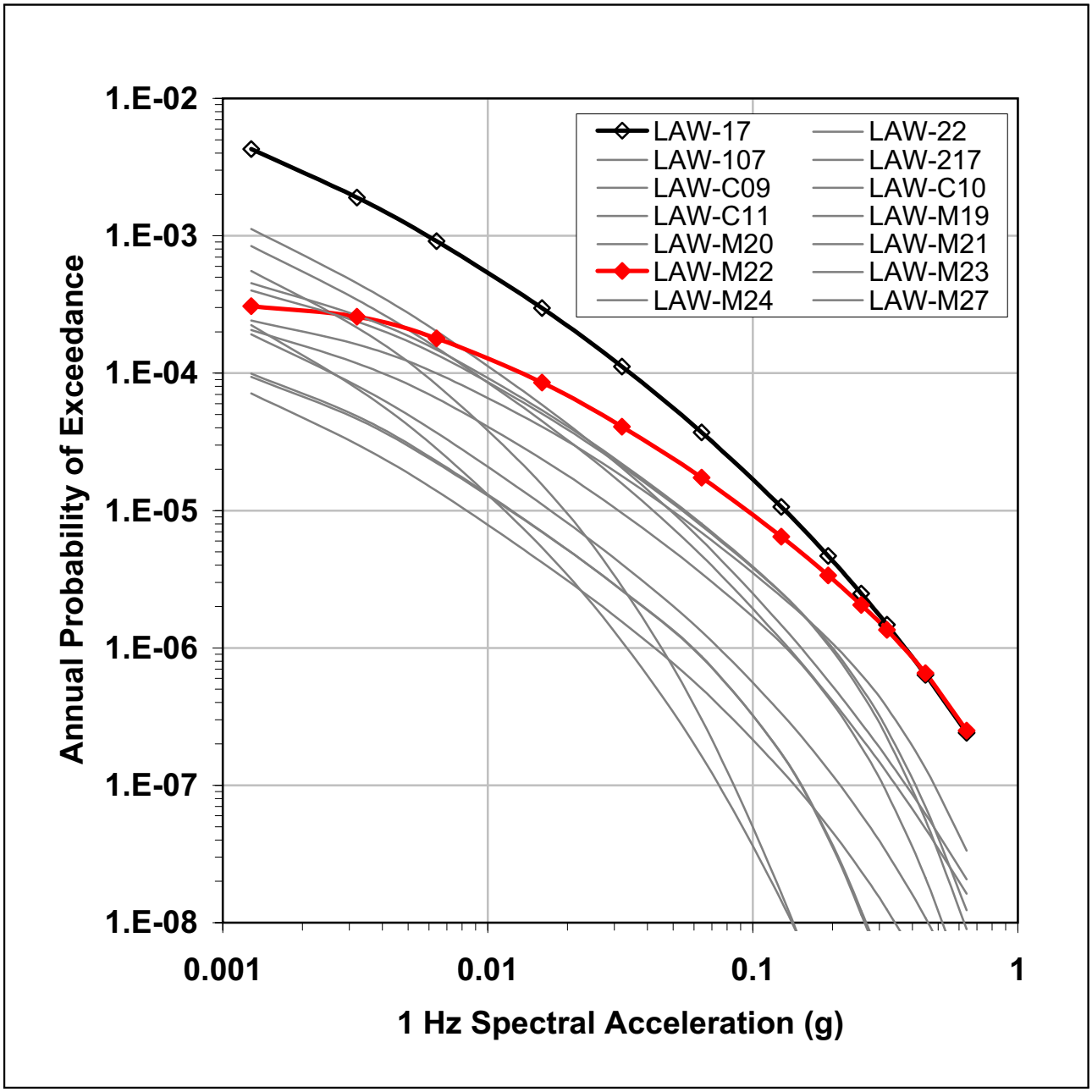


Figure 2.5-30 1989 EPRI 1 Hz Mean Hazard Contribution by Source (Law Engineering); Sources Contributing Most to ESP Site Hazard Are Emphasized

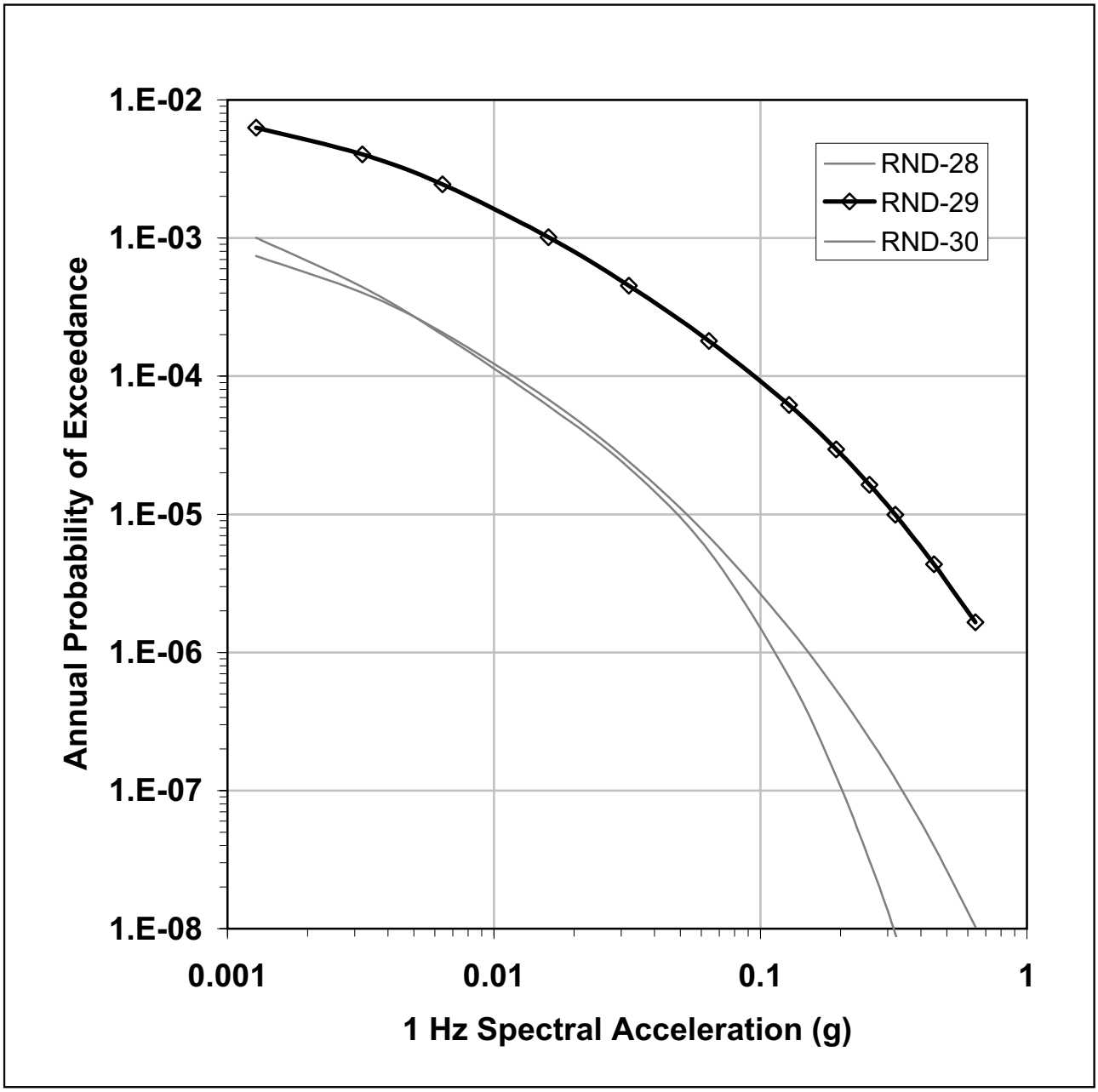


Figure 2.5-31 1989 EPRI 1 Hz Hazard Contribution by Source (Rondout Team); Sources Contributing Most to ESP Site Hazard Are Emphasized

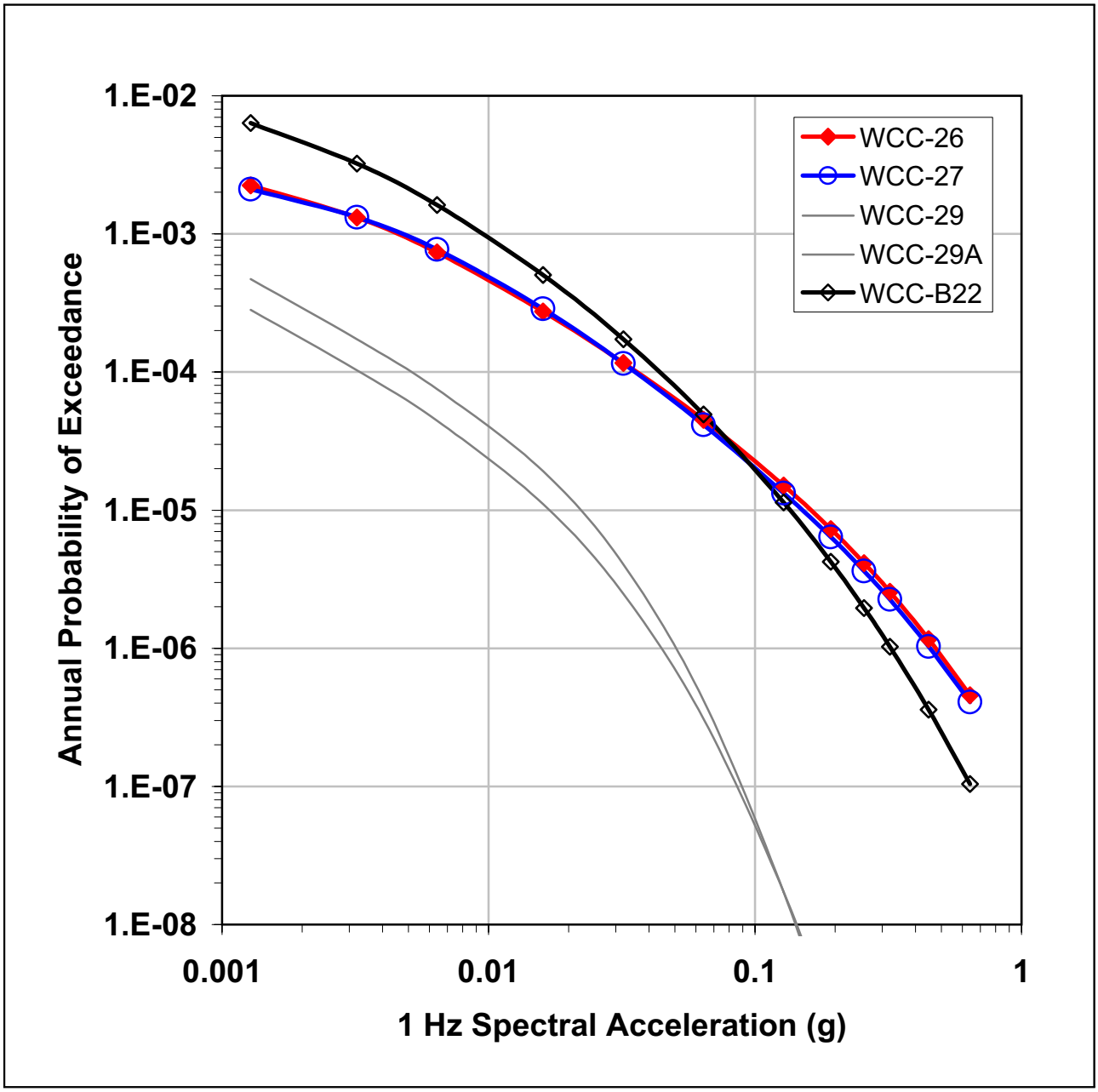


Figure 2.5-32 1989 EPRI 1 Hz Hazard Contribution by Source (Woodward-Clyde); Sources Contributing Most to ESP Site Hazard Are Emphasized

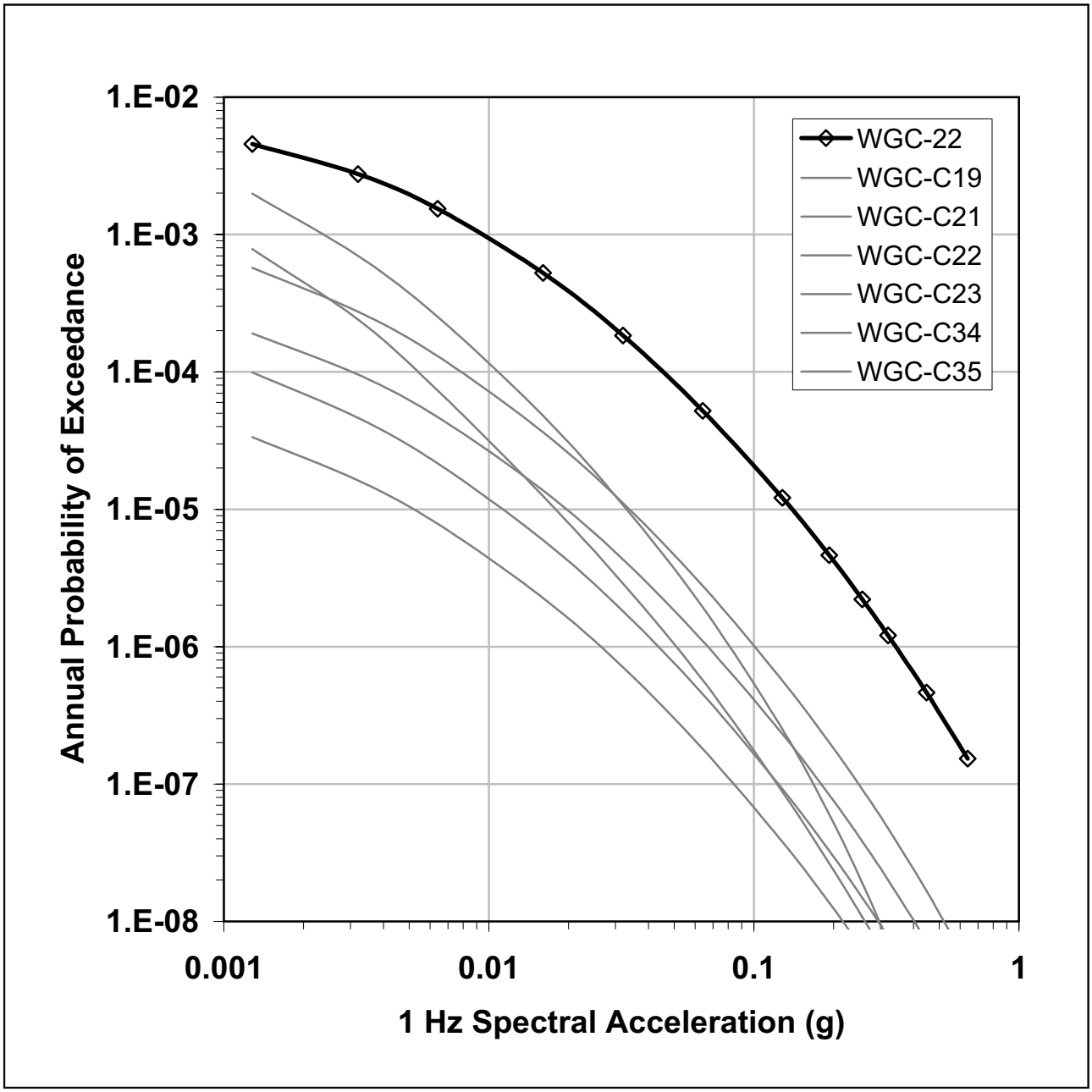


Figure 2.5-33 1989 EPRI 1 Hz Hazard Contribution by Source (Weston Geophysical); Sources Contributing Most to ESP Site Hazard Are Emphasized

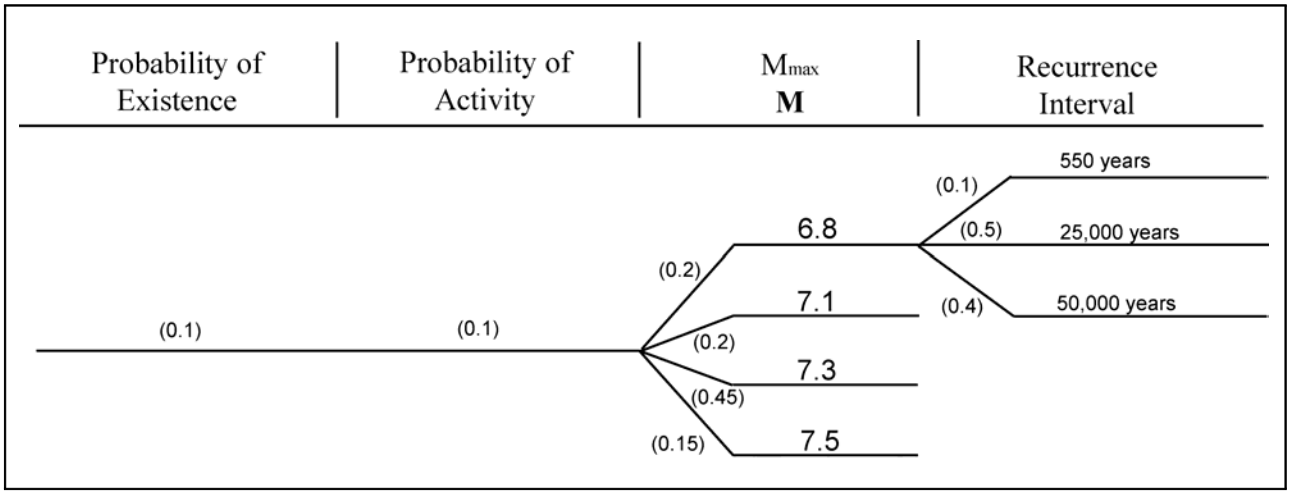


Figure 2.5-34 Logic Tree for ECFS Northern Segment

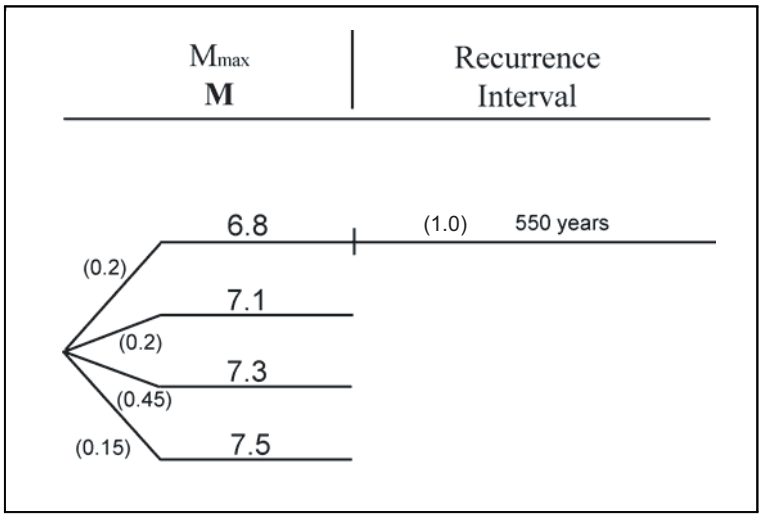


Figure 2.5-35 Logic Tree for the Updated Charleston Source (ECFS Southern Segment)

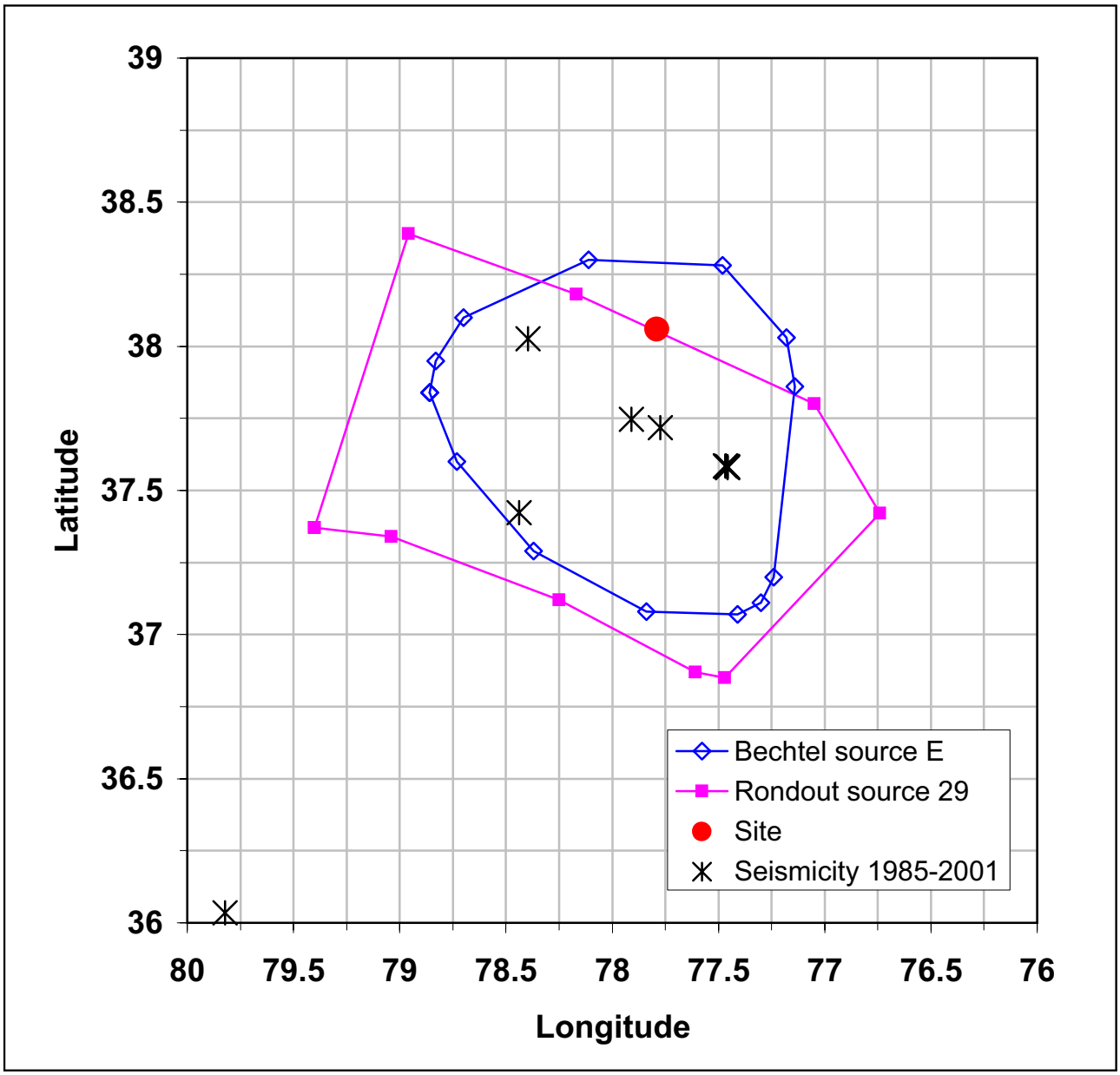


Figure 2.5-36 Bechtel and Rondout Team Representations of Central Virginia Seismic Zone, and Seismicity in the Region Recorded from 1985 to 2001

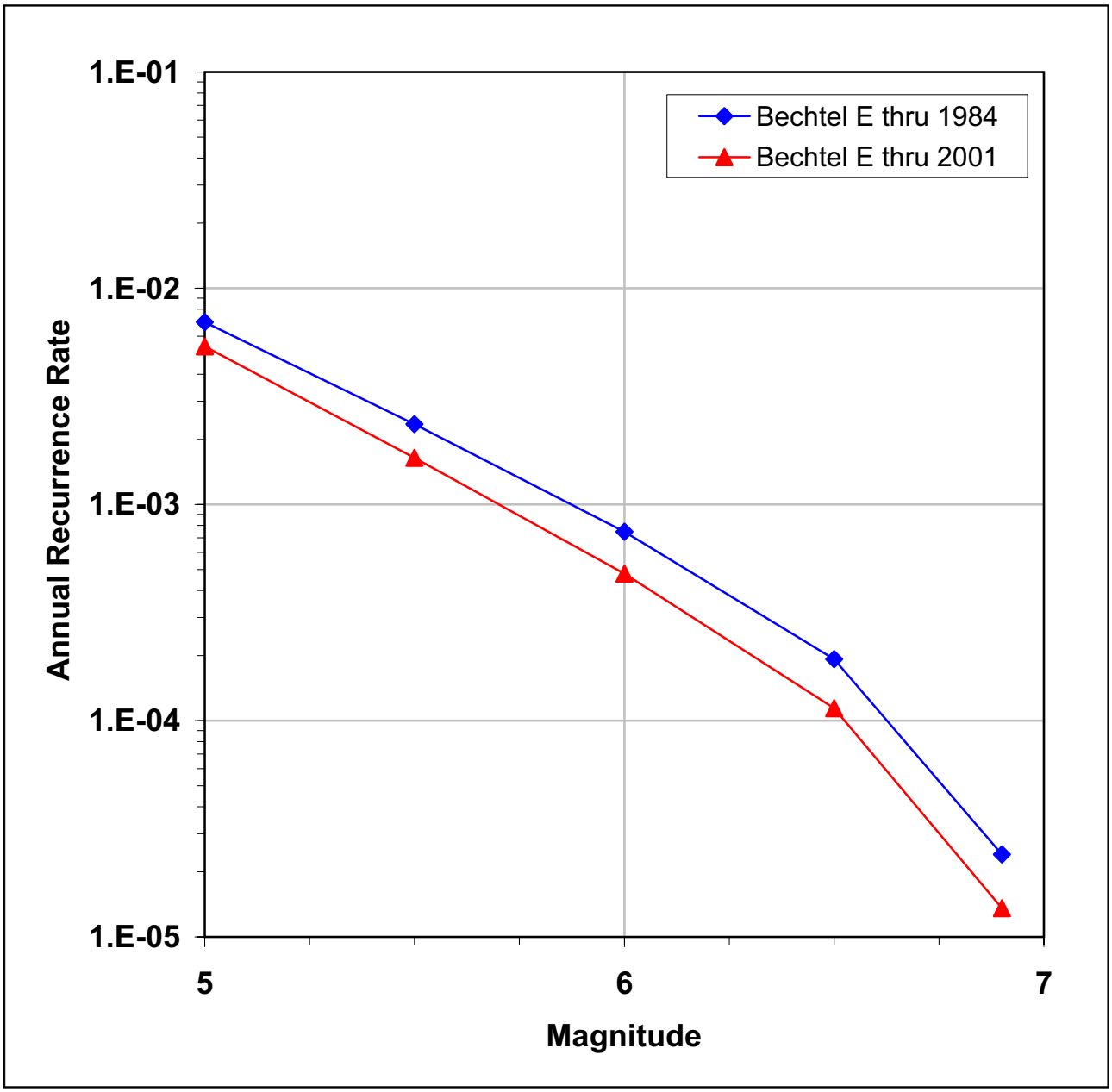


Figure 2.5-37 Comparison of Seismic Activity Rates for Bechtel Source E Considering Original EPRI (through 1984) and Updated (through 2001) Earthquake Catalogs

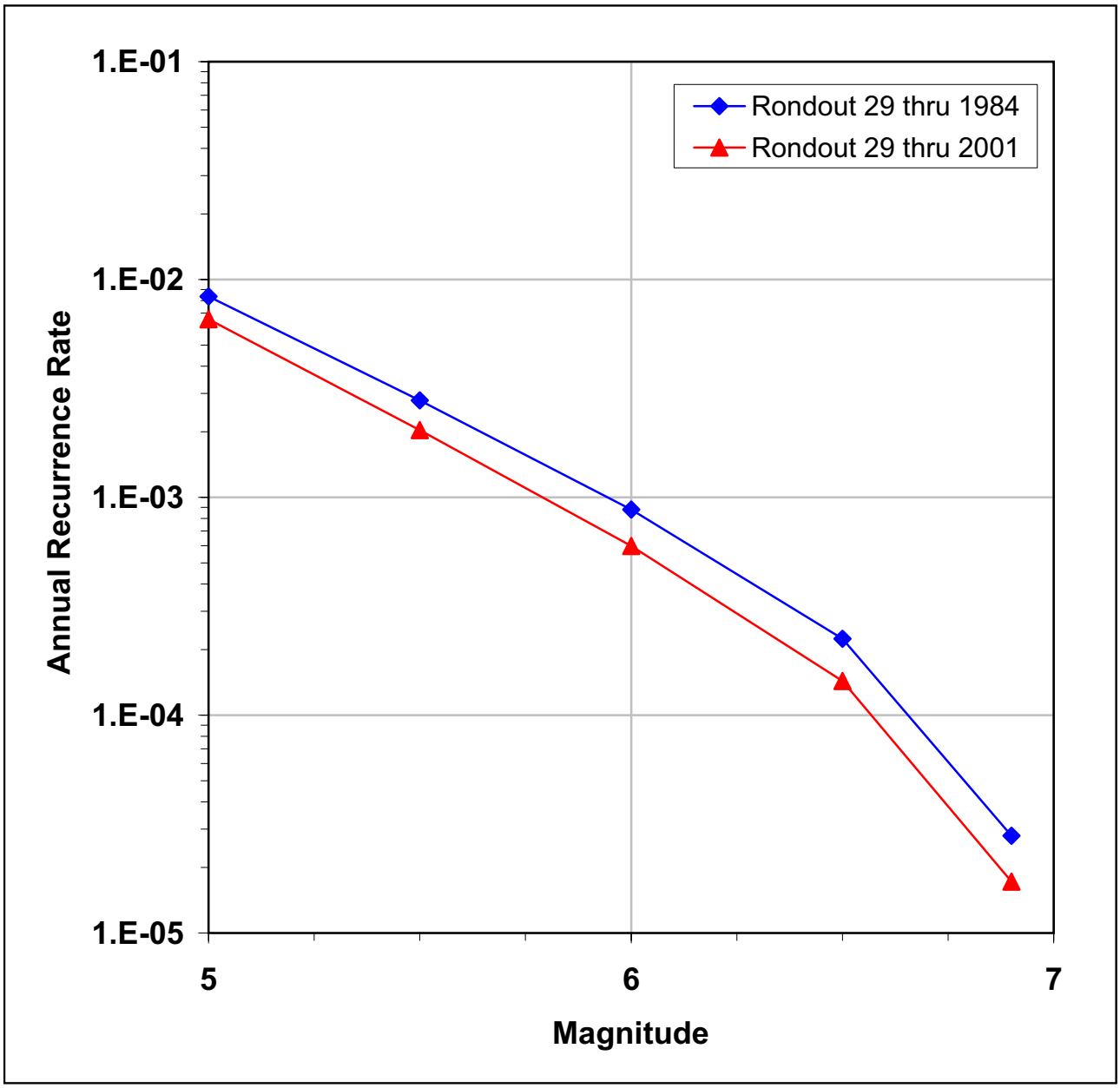


Figure 2.5-38 Comparison of Seismic Activity for Rondout Source 29 Considering Original EPRI (through 1984) and Updated (through 2001) Earthquake Catalogs

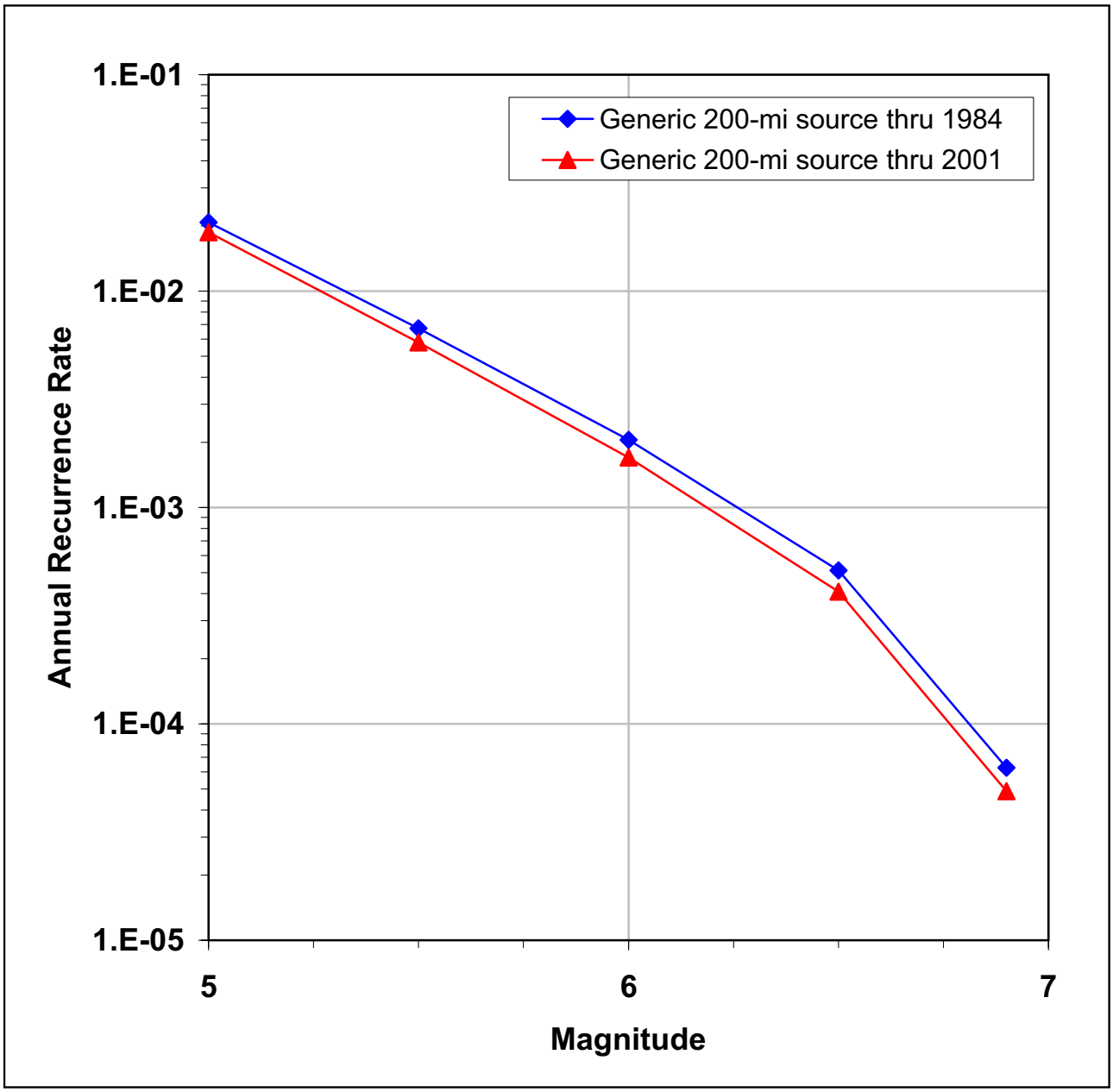


Figure 2.5-39 Comparison of Seismic Activity for 200-Mile Radius Source Around North Anna Considering Original EPRI (through 1984) and Updated (through 2001) Earthquake Catalogs

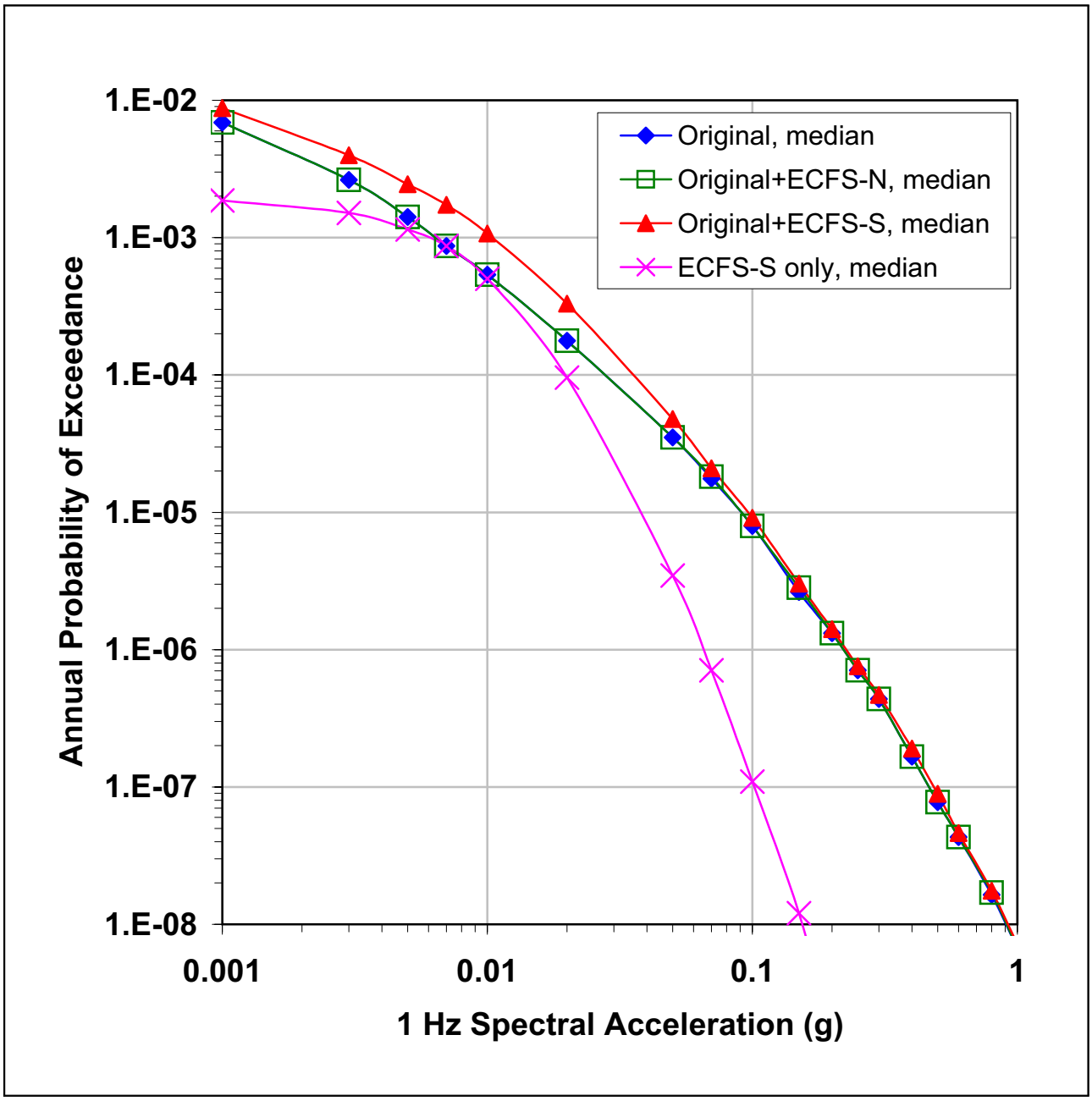


Figure 2.5-40 Effect of ECFS Faults on Median, 1 Hz Seismic Hazard

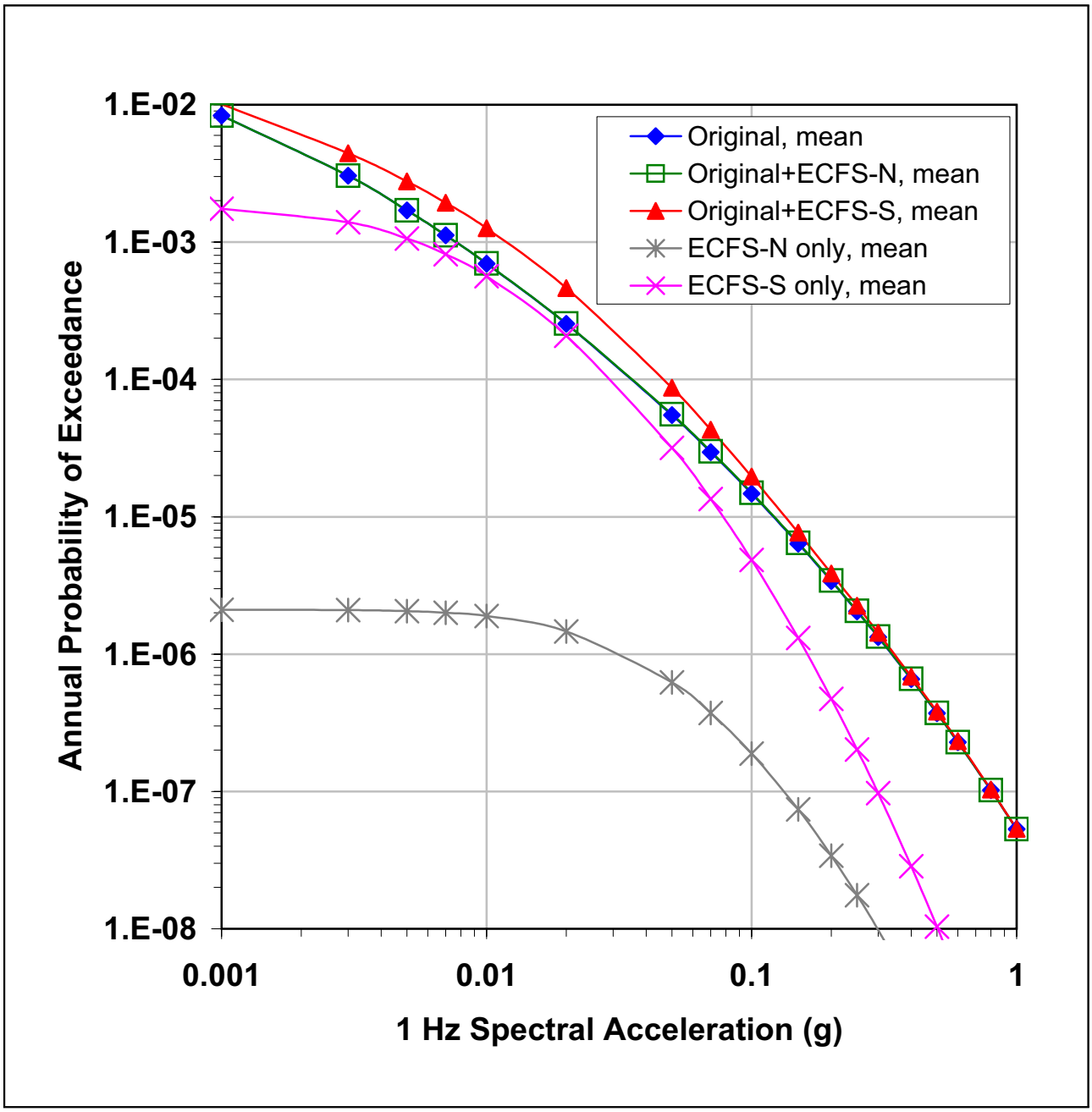


Figure 2.5-41 Effect of ECFS Faults on Mean, 1 Hz Seismic Hazard

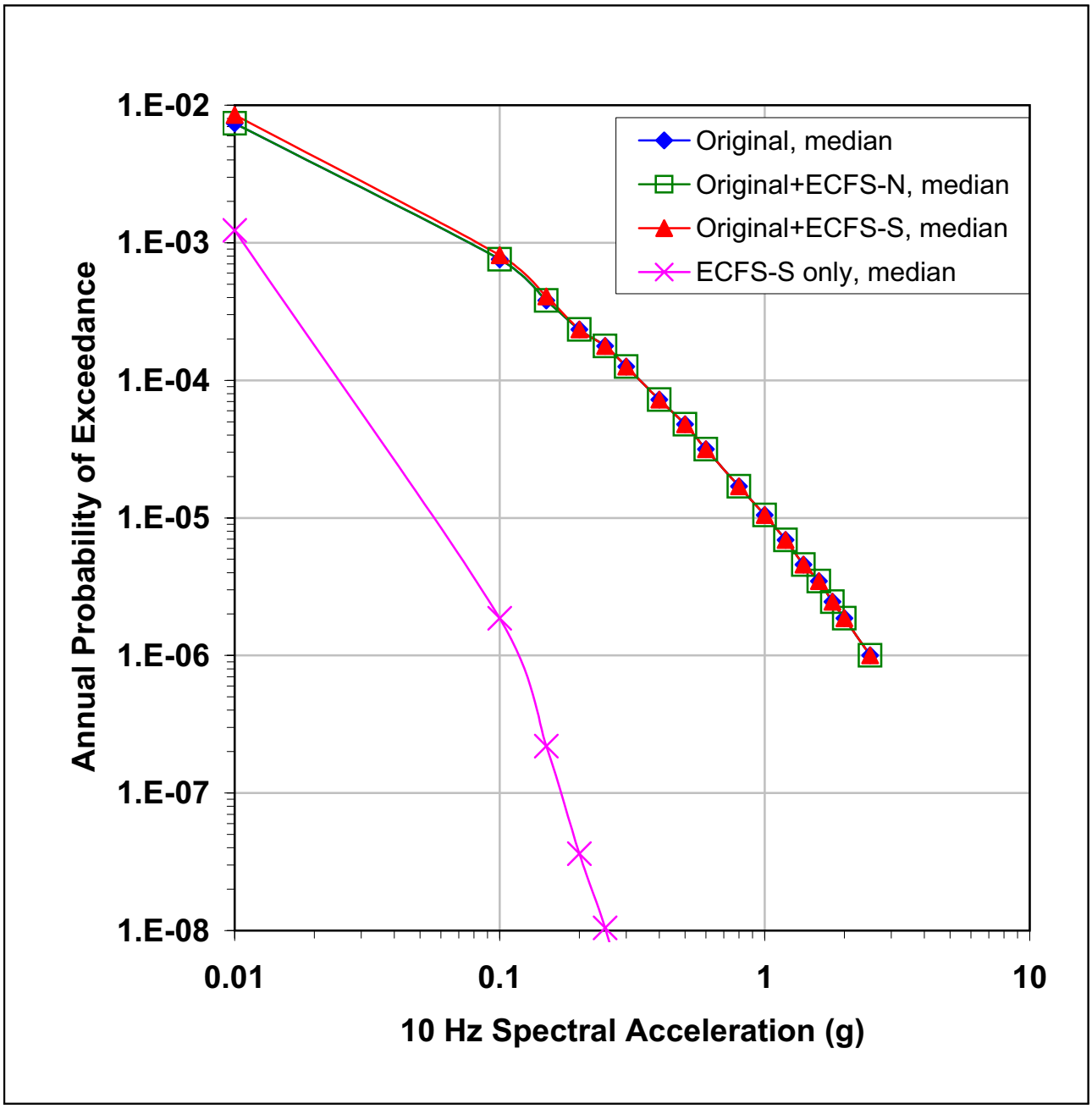


Figure 2.5-42 Effect of ECFS Faults on Median, 10 Hz Seismic Hazard

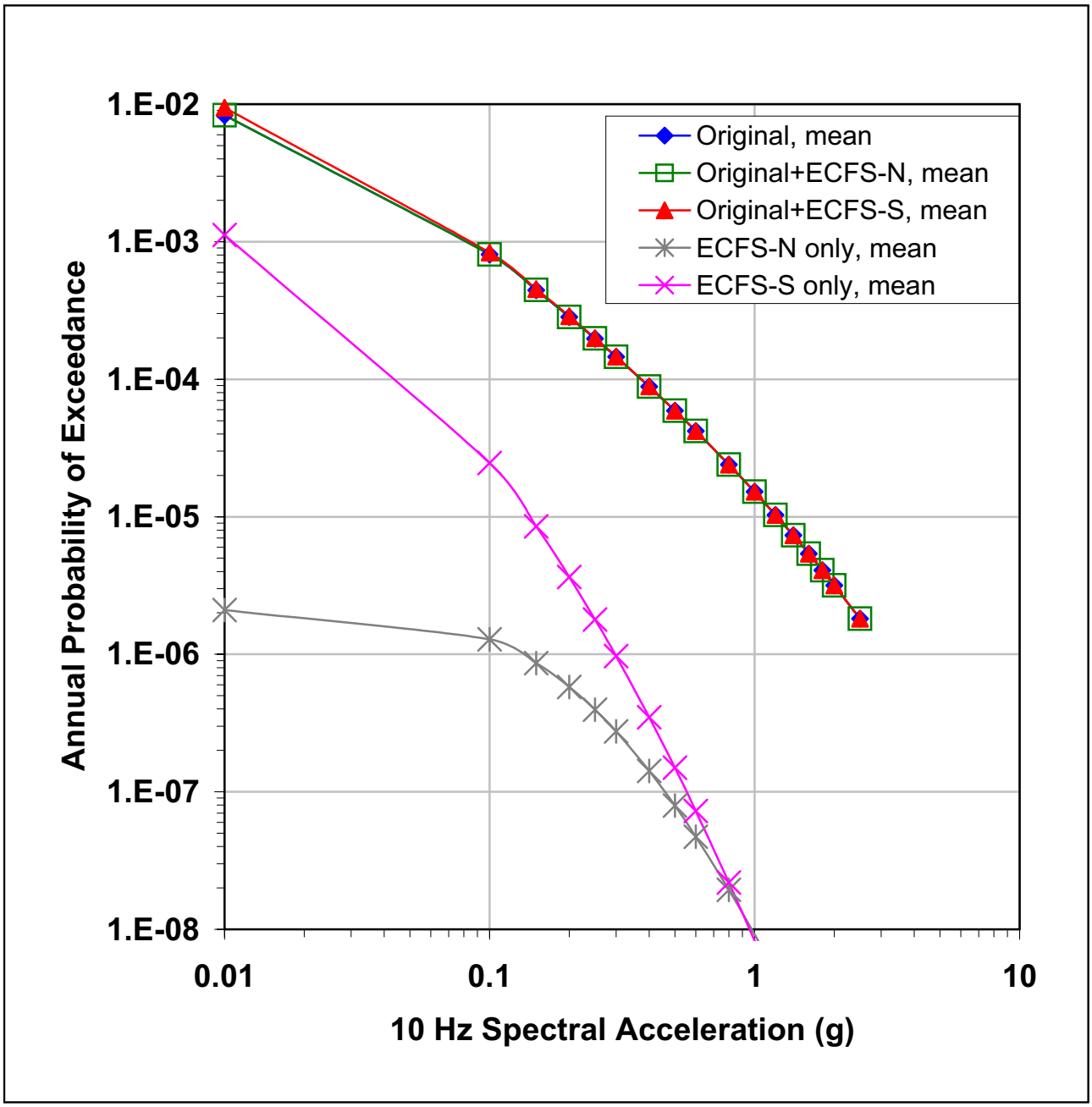


Figure 2.5-43 Effect of ECFS Faults on Mean, 10 Hz Seismic Hazard

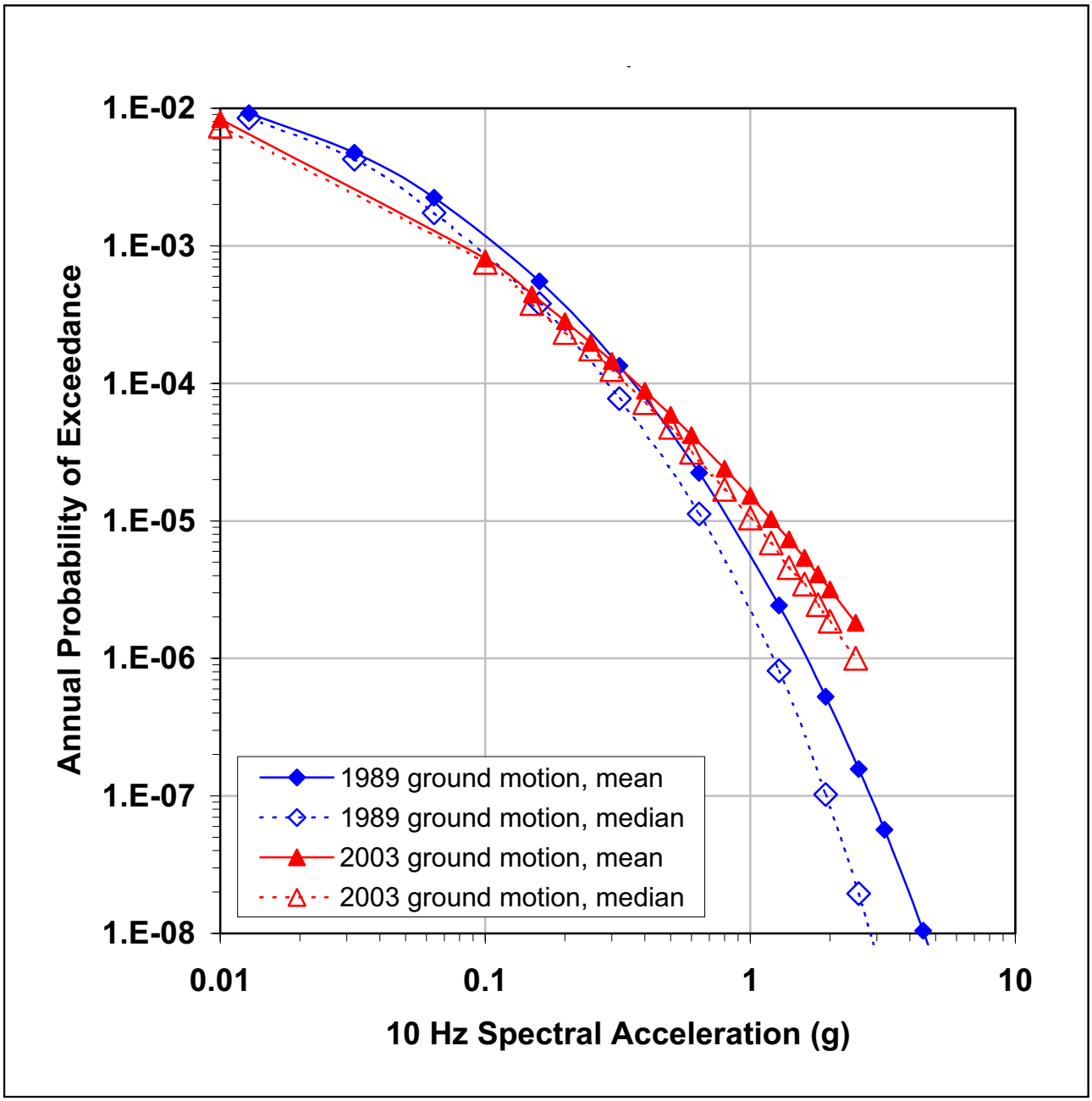


Figure 2.5-44 Sensitivity of 10 Hz Seismic Hazard to 1989 and 2003 Ground Motion Models

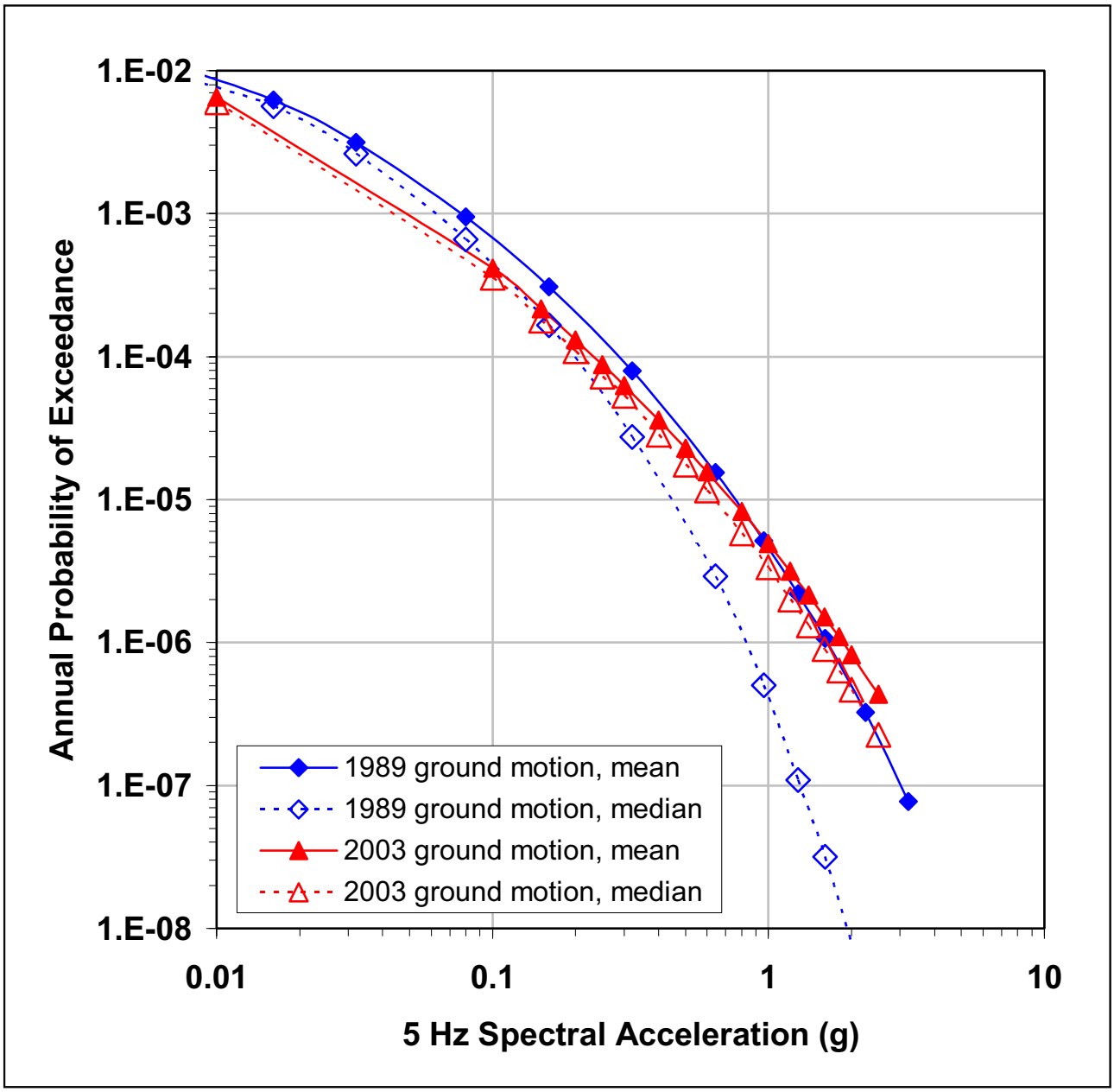


Figure 2.5-44A Sensitivity of 5 Hz Seismic Hazard to 1989 and 2003 Ground Motion Models

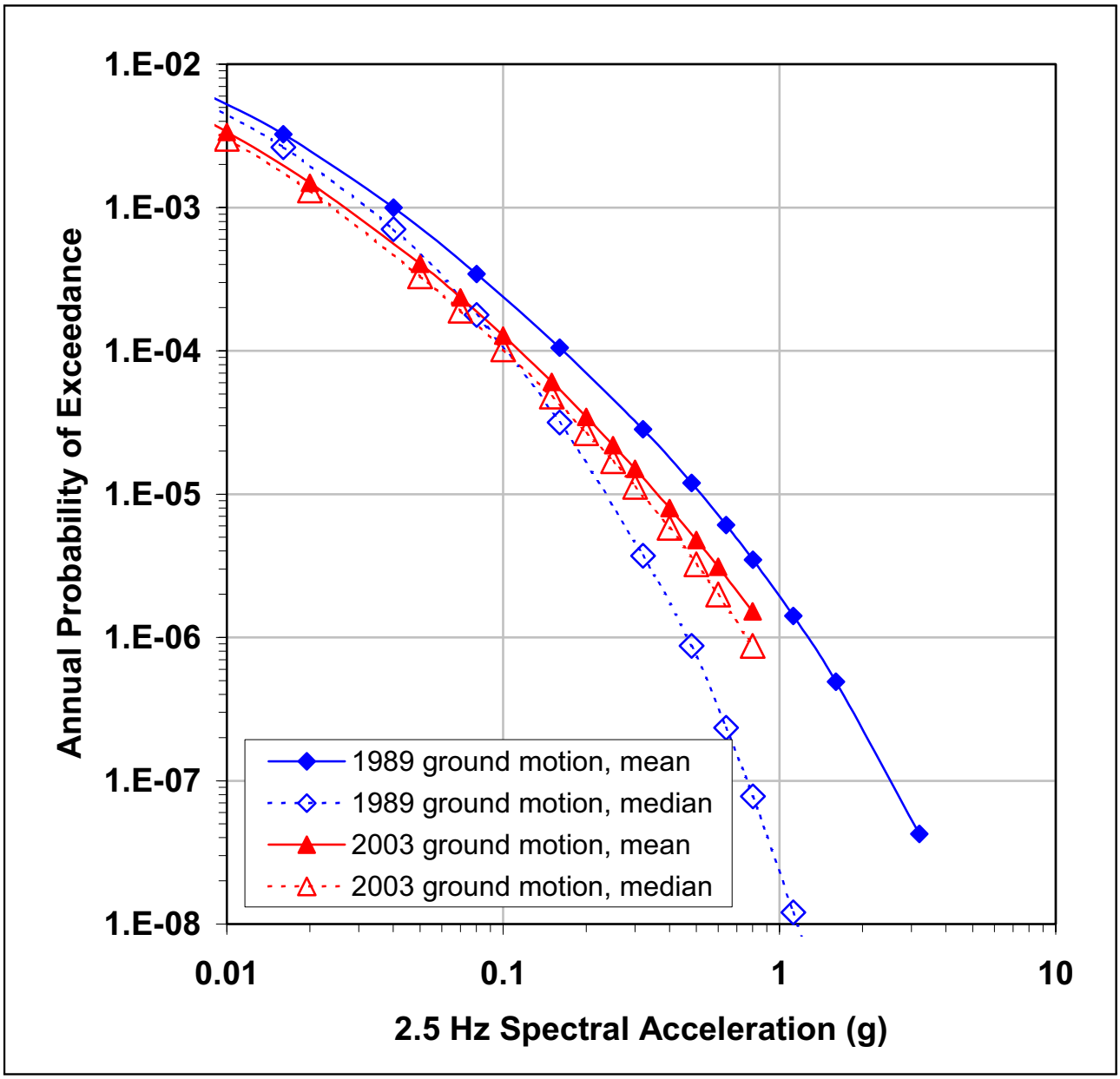


Figure 2.5-44B Sensitivity of 2.5 Hz Seismic Hazard to 1989 and 2003 Ground Motion Models

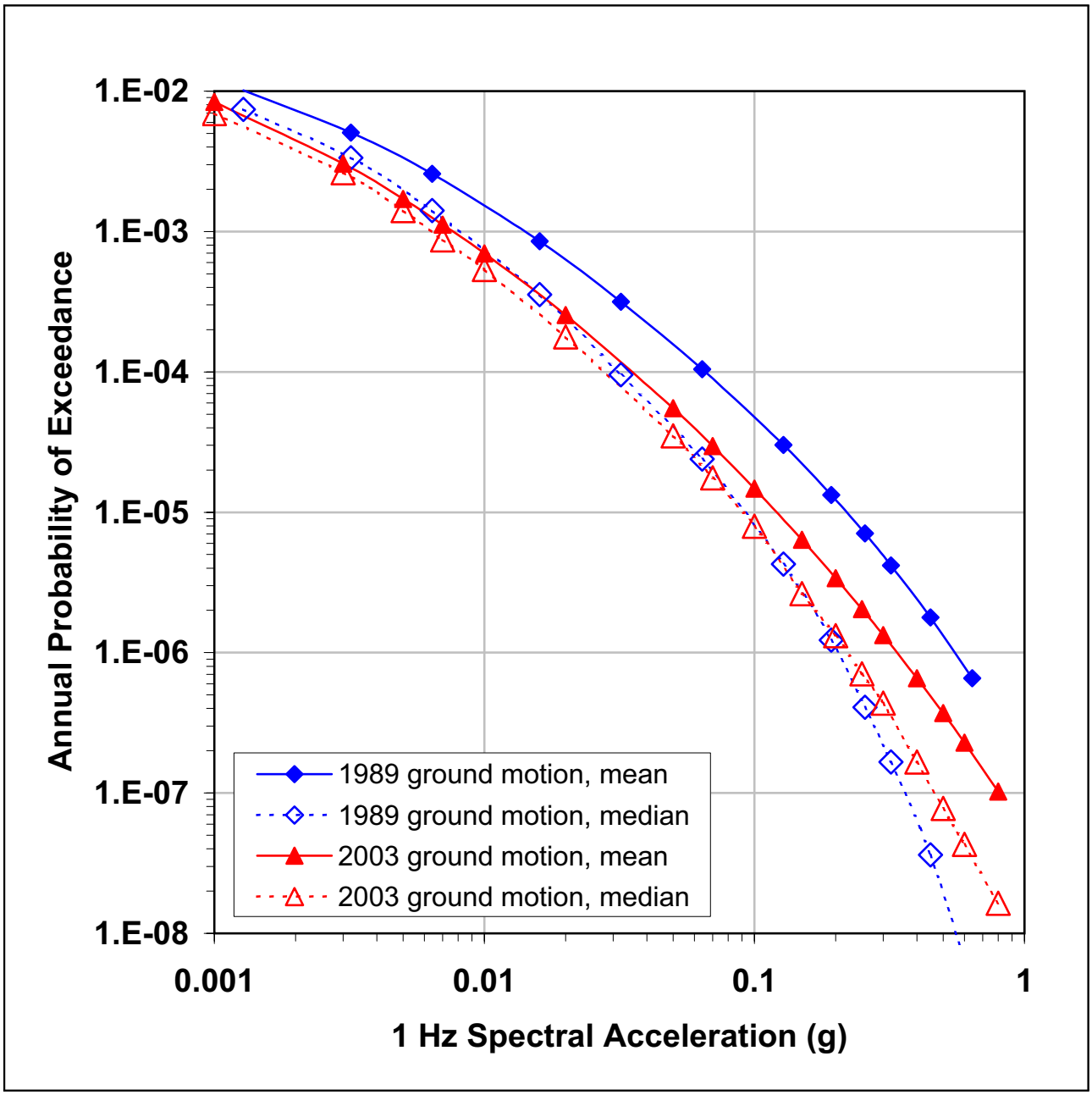


Figure 2.5-45 Sensitivity of 1 Hz Seismic Hazard to 1989 and 2003 Ground Motion Models