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# BASIS FOR SEISMIC PROVISIONS OF DOE-STD-1020

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**Brookhaven National Laboratory**  
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Staff _____	IDENTIFIED <u>✓</u>
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that high seismic western sites with seismicity governed by tectonic plate boundaries exhibit lower slope coefficients. The data presented in Table A-2 provide a further demonstration that  $A_R$  values can vary over a wide range. This data also demonstrates that the range for  $A_R$  extends down to about 1.5 for high seismic sites.

Table A-2  $A_R$  Values from Modern Seismic Hazard Curves at Several Sites

Eastern DOE Sites	A5/A4	A4/A3
Oak Ridge (EPRI)	2.26	3.18
Paducah (Rock, EPRI)	2.05	2.59
Portsmouth (Rock, EPRI)	2.58	3.44
Savannah River (1993, LLNL New)	2.23	2.38
Western DOE Sites (not near tectonic plate boundaries)	A5/A4	A4/A3
INEL (WCC, 1993)	1.99	2.38
LANL (WCC, 1993)	1.78	2.14
Hanford (Geomatrix, 1993 Draft)	2.01	2.78
High Seismic Sites (near tectonic plate boundaries)	A5/A4	A4/A3
LLNL (Geomatrix, 1990)	1.55	1.65
Diablo Canyon Nuclear Power Plant (PG&E, 1988)	1.38	1.68
SF Bay Bridge (Geomatrix, 1993)		1.57
Dumbarton Bridge (Geomatrix, 1993)		1.53
Bonicia - Martinez Bridge (Geomatrix, 1993)		1.70
L.A. Vincent Thomas Bridge (WCC, 1993)		2.12
S.D. Coronado Bay Bridge (WCC, 1993)		2.28

San Onofre	1.55 *	1.92 *
Washington Nuclear Plant 3 (Satsop)	1.52 *	1.81 *
Washington Nuclear Plant 2 (Hanford)	—	2.72 *
Palo Verde	2.29 *	3.32 *
Yucca Mountain	2.40 ‡	3.44 ‡

\* Value determined by W.J. Arabasz from information in Yucca Mountain Topical Report II, 1997, Appendix C

‡ Value determined by W.J. Arabasz from mean hazard curve for PGA published by Stepp et al. (2001, Earthquake Spectra, vol. 17, no. 1, pp. 113-151)