

5.0 Site Parameters

This section provides a definition of the site parameters used as the basis for the Certified Design.

Table 5.0 ABWR Site Parameters

Maximum Ground Water Level:	61.0 cm below grade	Extreme Wind:	Basic Wind Speed: 177 km/h ⁽¹⁾ /197 km/h ⁽²⁾
Maximum Flood (or Tsunami) Level:	30.5 cm below grade	Tornado	
Precipitation (for Roof Design):		• Maximum tornado wind speed:	483 km/h
• Maximum rainfall rate:	50.3 cm/h ⁽³⁾	• Maximum pressure drop:	13.827 kPaD
• Maximum snow load:	2.394 kPa	• Missile spectra:	Spectrum I ⁽⁴⁾
Ambient Design Temperature:		Soil Properties:	
1% Exceedance Values		• Minimum static bearing capacity:	718.20 kPa ⁽⁵⁾
• Maximum:	37.8°C dry bulb 26.3°C wet bulb (coincident) 27.3°C wet bulb (non-coincident)	• Minimum shear wave velocity:	305 m/s ⁽⁶⁾
• Minimum:	-23.3°C ⁽⁸⁾	• Liquefaction potential:	None at plant site resulting from site specific SSE ground motion
0% Exceedance Values (Historical Limit)		Seismology:	
• Maximum:	46.1°C dry bulb 26.7°C wet bulb (coincident) 31.3°C wet bulb (non-coincident)	• SSE response spectra:	See Figures 5.0a and 5.0b ⁽⁷⁾
• Minimum:	-40°C	Meteorological Dispersion (Chi/Q):	
Exclusion Area Boundary (EAB): An area whose boundary has a Chi/Q less than or equal to $1.37 \times 10^{-3} \text{ s/m}^3$.		• Maximum 2-hour 95% EAB	$1.37 \times 10^{-3} \text{ s/m}^3$
		• Maximum 2-hour 95% LPZ	$4.11 \times 10^{-4} \text{ s/m}^3$
		• Maximum annual average (8760 hour) LPZ	$1.17 \times 10^{-6} \text{ s/m}^3$

(1) 50-year recurrence interval; value to be utilized for design of non-safety-related structures only.

(2) 100-year recurrence interval; value to be utilized for design for safety-related structures only.

(3) Maximum value for 1 hour over 2.6 km² probable maximum precipitation (PMP) with ratio of 5 minutes to 1 hour PMP of 0.32. Maximum short-term rate: 16.3cm/5 min.

(4) Spectrum I missiles consist of a massive high kinetic energy missile which deforms on impact, a rigid missile to test penetration resistance, and a small rigid missile of a size sufficient to just pass through any openings in protective barriers. These missiles consists of an 1800 kg automobile, a 125 kg, 20 cm diameter armor piercing artillery shell, and a 2.54 cm diameter solid steel sphere, all impacting at 35% of the maximum horizontal windspeed of the design basis tornado. The first two missiles are assumed to impact at normal incidence, the last to impinge upon barrier openings in the most damaging directions.

(5) At foundation level of the reactor and control buildings.

(6) This is the minimum shear wave velocity at low strains after the soil property uncertainties have been applied.

(7) Free-field, at plant grade elevation.

(8) Non-safety related HVAC systems are designed based on outdoor summer temperatures of 32.8°C dry bulb and 26.3°C wet bulb (coincident) and outdoor winter temperature of 2.1°C dry bulb.

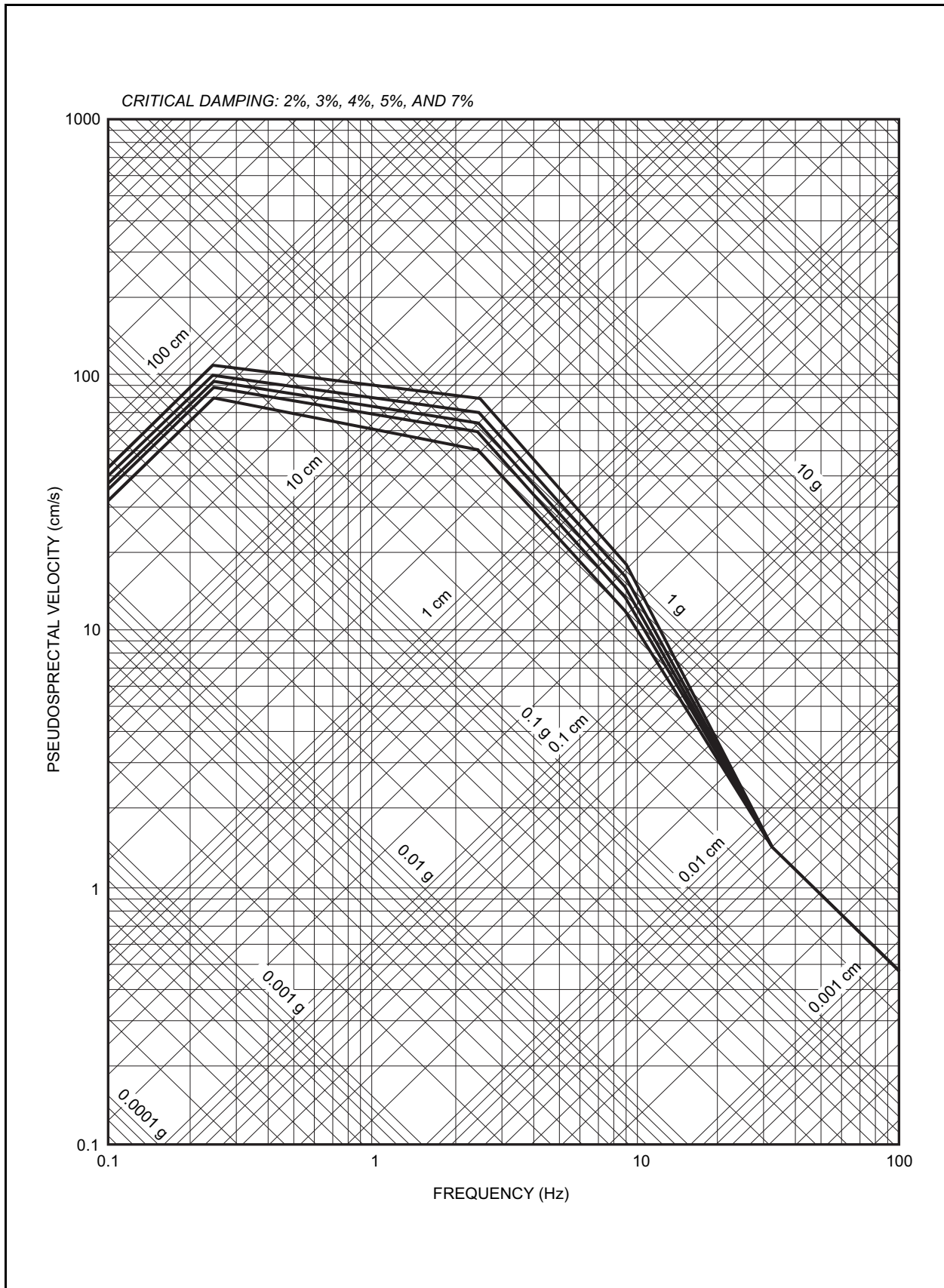


Figure 5.0a Horizontal Safe Shutdown Earthquake Design Spectra

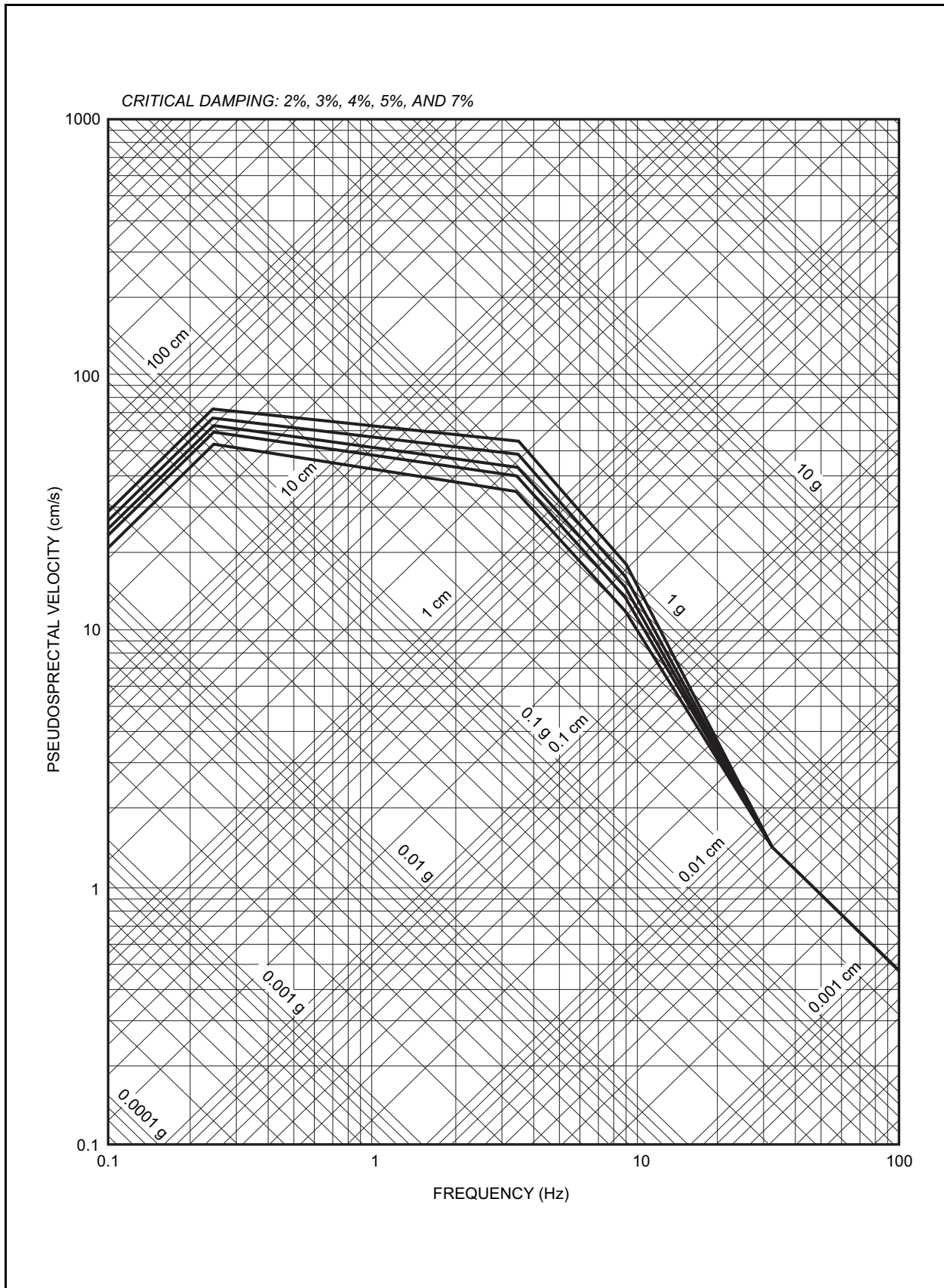


Figure 5.0b Vertical Safe Shutdown Earthquake Design Spectra