Enclosure 2

MFN 15-050, Revision 1

Revised GEH Response to Item #4, Maximum Groundwater Level

ABWR DCD DRAFT Revision 6 Markups

Chapter 2
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2.0 Site Characteristics

2.0.1 Summary

This section defines the envelope of site-related parameters which the ABWR Standard Plant is designed to accommodate. These parameters envelope most potential sites in the U.S. A summary of the site envelope design parameters is given in Table 2.0-1.

2.0.2 References

2.0.2-1 Electric Power Research Institute, "Advanced Light Water Reactor Utility Requirements Document," Revision 8, March 1999

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Table 2.0-1
Envelope of ABWR Standard Plant Site Design Parameters

Maximum Ground Water Level:	61.0 cm below grade	
Extreme Wind:	Basic Wind Speed: 177 km/h[*] / 197 km/h[†]	
Maximum Flood (or Tsunami) Level:[‡]	30.5 cm below grade	
Tornado:	– Maximum Tornado Wind Speed:	483 km/h
	– Maximum Rotational Speed:	386 km/h
	– Translational Velocity:	97 km/h
	– Radius:	45.7m
	– Maximum Pressure Drop:	13.827 kPaD
	– Rate of Pressure Drop:	8.277 kPa/s
	– Missile Spectra:	Spectrum I[f]
Precipitation (for Roof Design):	– Maximum Rainfall Rate:	49.3 cm/h[**]
	– Maximum Snow Load:	2.394 kPa
Ambient Design Temperature:	1% Exceedance Values – Maximum: 37.8°C dry bulb 25°C wet bulb (coincident) 26.7°C wet bulb (non-coincident) – Minimum: –23.3°C 0% Exceedance Values (Historical limit) – Maximum 46.1°C dry bulb 26.7°C wet bulb (coincident) 27.2°C wet bulb (non-coincident) – Minimum: –40°C	
Soil Properties:	– Minimum Static Bearing Capacity:	718.20 kPa[††]
	– Minimum Shear Wave Velocity:	305 m/s[‡‡]
	– Liquification Potential:	None at plant site resulting from site specific SSE ground motion

Table 2.0-1
Envelope of ABWR Standard Plant Site Design Parameters (Continued)

Seismology:	– SSE Peak Ground Acceleration: – SSE Response Spectra: – SSE Time History:	0.30g^{ƒƒ} per RG 1.60 Envelope SSE Response Spectra
Hazards in Site Vicinity:	– Site Proximity Missiles and Aircraft – Toxic Gases – Volcanic Activity	 $\leq 10^{-7}$ per year None
Exclusion Area Boundary: (EAB)	– An area whose boundary has a Chi/Q less than or equal to 1.37 x 10^{-3} s/m^3	None
Meteorological Dispersion (Chi/Q):	– Maximum 2-hour 95% EAB – Maximum 2-hour 95% LPZ – Maximum annual average (8760 hour) LPZ	1.37×10^{-3} s/m^3 4.11×10^{-4} s/m^3 1.17×10^{-6} s/m^3

* 50–year recurrence interval; value to be utilized for design of non-safety-related structures only.

† 100–year recurrence interval; value to be utilized for design for safety-related structures only.

‡ ~~Probable maximum flood level (PMF), as defined in ANSI/ANS-2.8, "Determining Design Basis Flooding at Power Reactor Sites."~~

ƒ 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 openings in the most damaging directions.

** Maximum value for 1 hour over 2.6 km^2 probable maximum precipitation (PMP) with ratio of 5 minutes to 1 hour PMP of 0.32 as found in National Weather Source Publication HMR No. 52. Maximum short term rate: 15.7 cm/5 min.

†† At foundation level of the reactor and control buildings.

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

ƒƒ Free-field, at plant grade elevation.

As defined in Table 1.2-6 of Volume II of Reference 2.0.2-1.