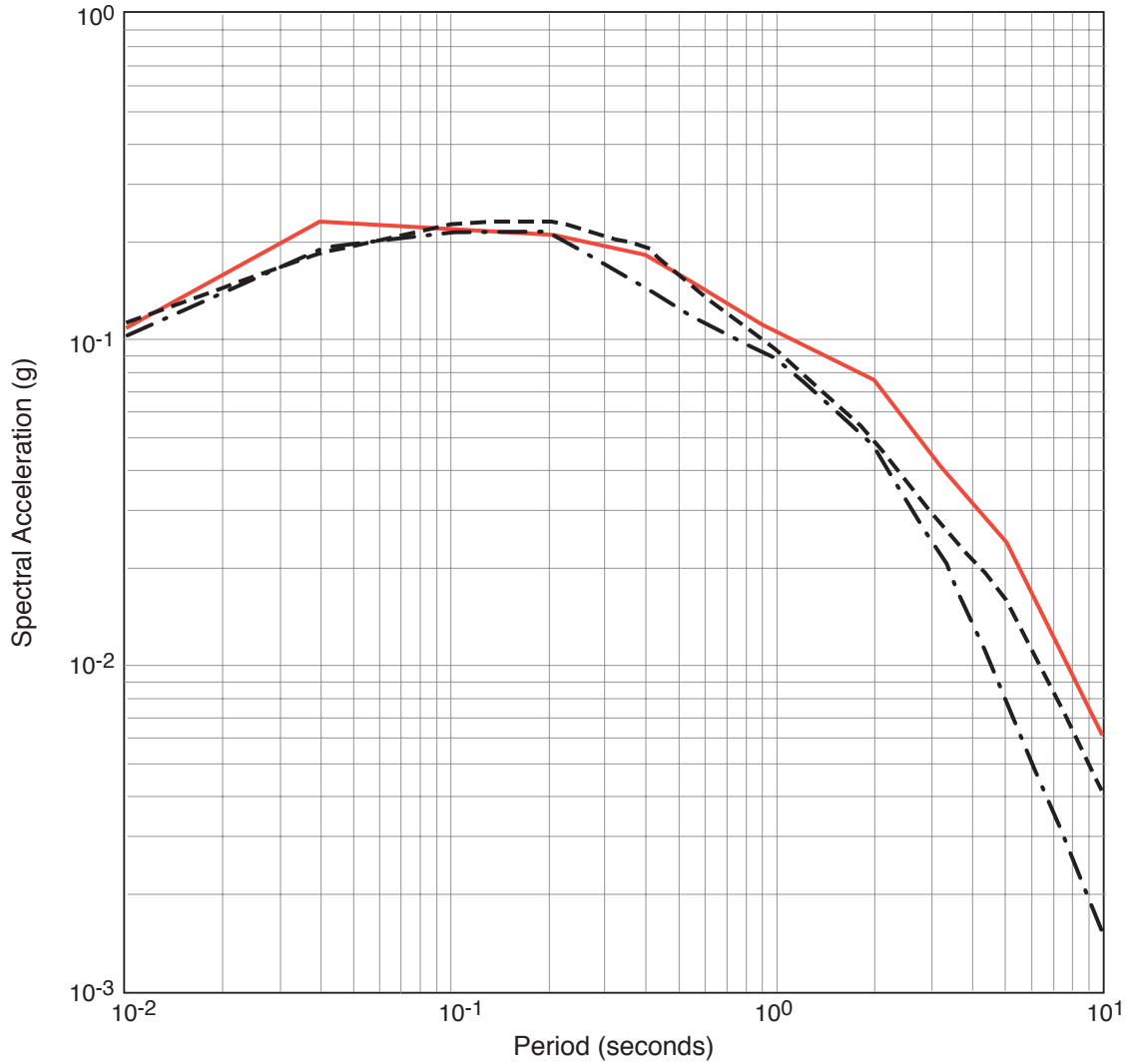


**GRAND GULF ROCK MOTIONS HORIZONTAL,
MEDIAN 10⁻⁵ ANNUAL PROBABILITY OF EXCEEDANCE (APE)**



Explanation

- UHS; PGA = 0.109g
- · - - 1 - 2 Hz; PGA = 0.113g
- - - - 5 - 10 Hz; PGA = 0.103g

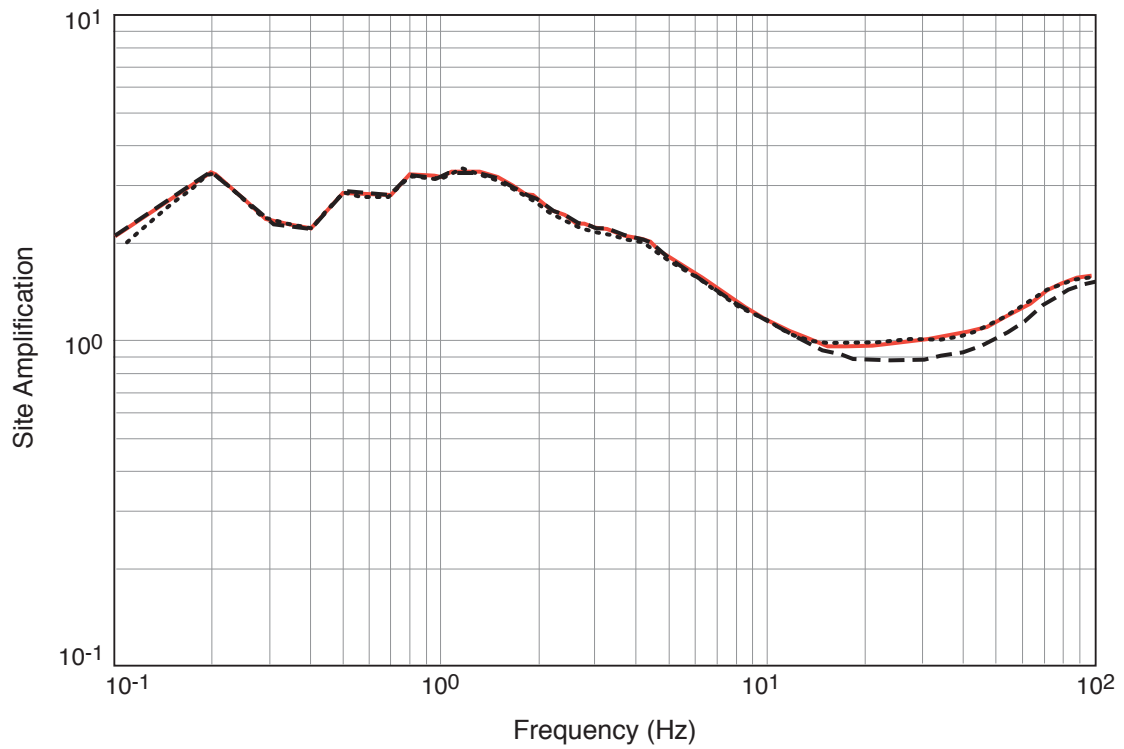
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GRAND GULF NUCLEAR STATION SITE
EARLY SITE PERMIT APPLICATION
SITE SAFETY ANALYSIS REPORT

MEDIAN 10⁻⁵ APE UNIFORM HAZARD
RESPONSE SPECTRUM (UHS) AND
CORRESPONDING SCALED 1 TO 2 HZ AND 5
TO 10 HZ SPECTRA, EXTENDED TO 0.1 HZ
FOR SITE RESPONSE ANALYSES

FIGURE 2.5-63

DRAFT REV. 1,
JULY 30, 2004

TOP OF LOESS MEAN AMPLIFICATION



Explanation

- Envelope
- Mean 1 - 2 Hz
- - - - Mean 5 - 10 Hz

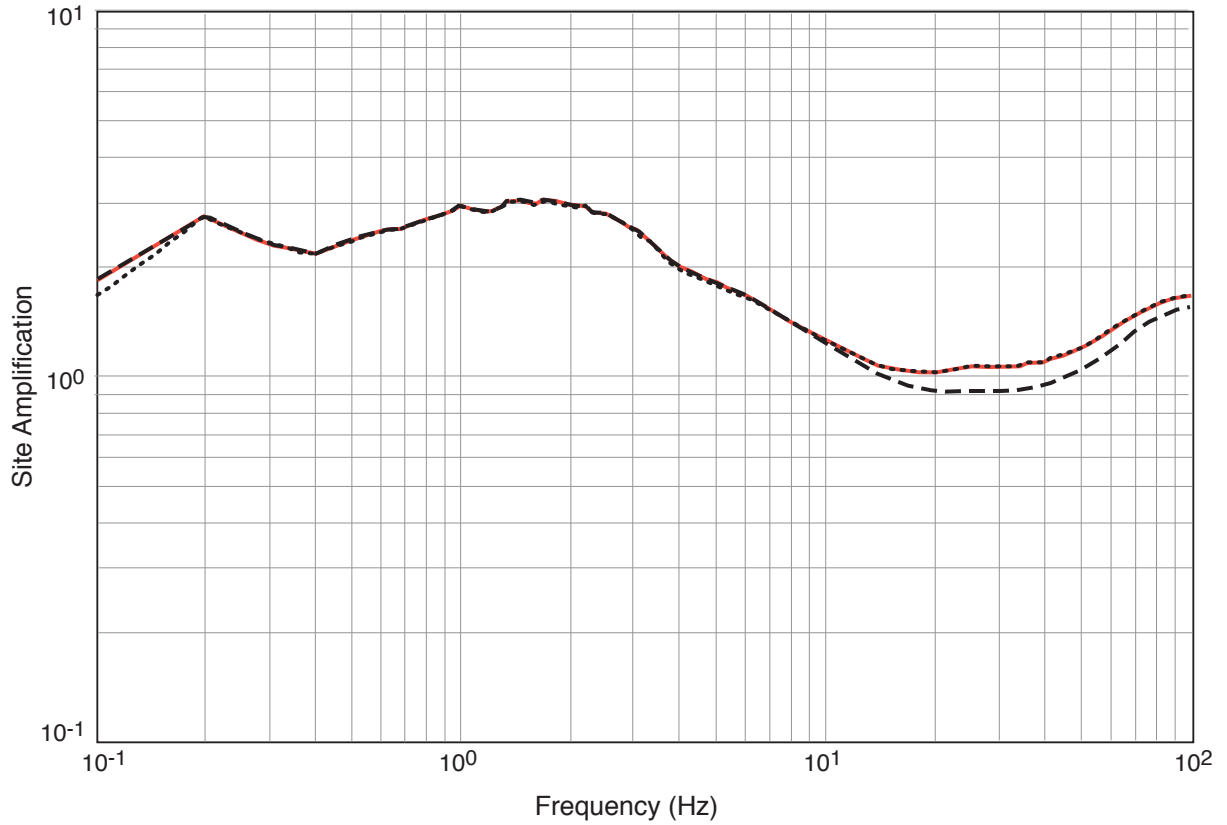
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GRAND GULF NUCLEAR STATION SITE
EARLY SITE PERMIT APPLICATION
SITE SAFETY ANALYSIS REPORT

MEAN TRANSFER FUNCTIONS
CORRESPONDING TO 1 TO 2 HZ AND 5 TO
10 HZ SCALED SPECTRA (FIGURE 2.5-63)
AND ENVELOPE: TOP OF LOESS

FIGURE 2.5-64

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JULY 30, 2004

**TOP OF 1,000 FT/SEC MATERIAL
MEAN AMPLIFICATION**



Explanation

- Envelope
- Mean 1 - 2 Hz
- - - - Mean 5 - 10 Hz

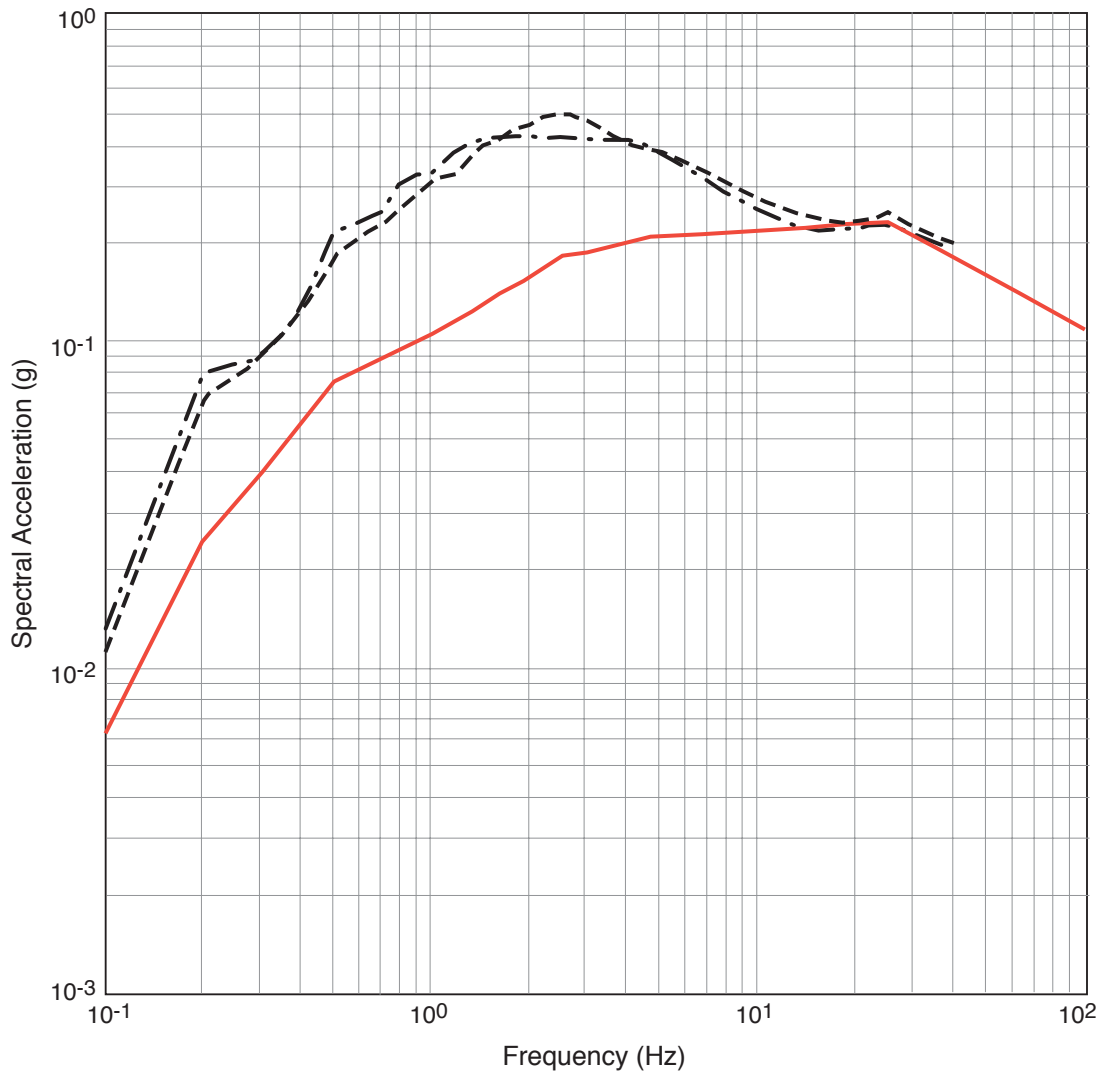
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EARLY SITE PERMIT APPLICATION
SITE SAFETY ANALYSIS REPORT

MEAN TRANSFER FUNCTIONS CORRESPONDING
TO 1 TO 2 HZ SCALED SPECTRA (FIGURE 2.5-63)
AND ENVELOPE: TOP OF MATERIAL
WITH 1,000 FT/SEC SHEAR-WAVE VELOCITY,
DEPTH 50 FT (FIGURE 2.5-60)

FIGURE 2.5-65

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JULY 30, 2004

**GRAND GULF SOIL MOTIONS HORIZONTAL,
MEDIAN 10⁻⁵ ANNUAL PROBABILITY OF EXCEEDANCE (APE)**



Explanation

- Rock UHS; PGA = 0.113g
- · - · - · 1,000 ft/sec soil surface, 0.200g
- - - - - Top of loess, 0.192g

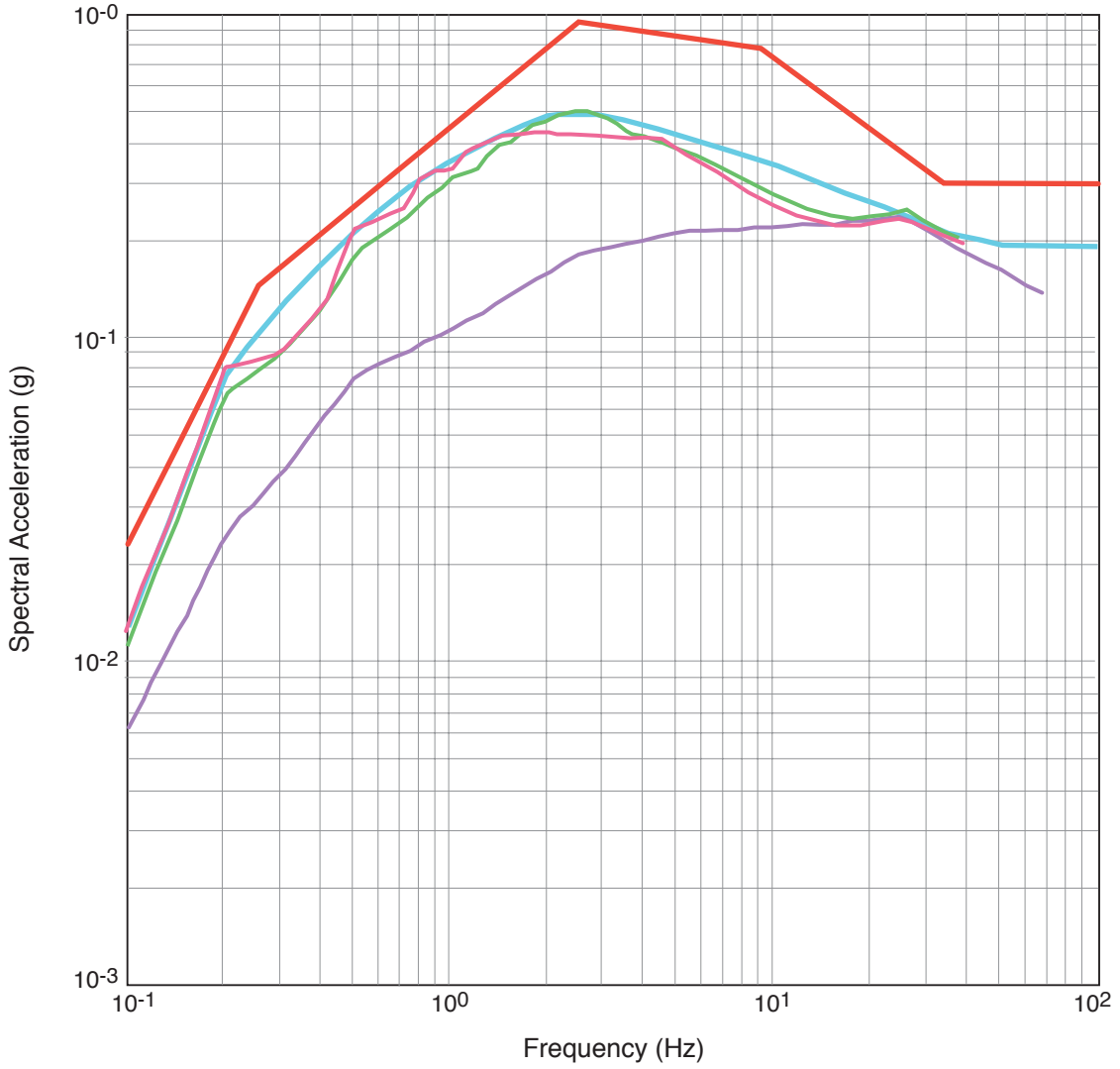
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EARLY SITE PERMIT APPLICATION
SITE SAFETY ANALYSIS REPORT

HARD ROCK UNIFORM HAZARD RESPONSE
SPECTRUM (UHS) AND CORRESPONDING SOIL
MOTIONS: DASH-DOTTED, TOP OF LOESS; DASHED,
TOP OF MATERIAL WITH 1,000 FT/SEC
SHEAR-WAVE VELOCITY, 50 FT DEPTH (FIGURE 2.5-60)

FIGURE 2.5-66

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JULY 30, 2004

**GRAND GULF, MEDIAN 10⁻⁵ ANNUAL PROBABILITY OF EXCEEDANCE (APE)
CONTROL MOTION SOIL DESIGN MOTION**



Explanation

- 5%, soil design motion, PGA = 1.90g
- 5%, 10⁻⁵ APE rock UGS, PGA = 1.09g
- 1,000 ft/sec soil surface, 0.182g
- Top of loess, 0.174g
- 5%, regulatory guide 160 scaled to 0.3g

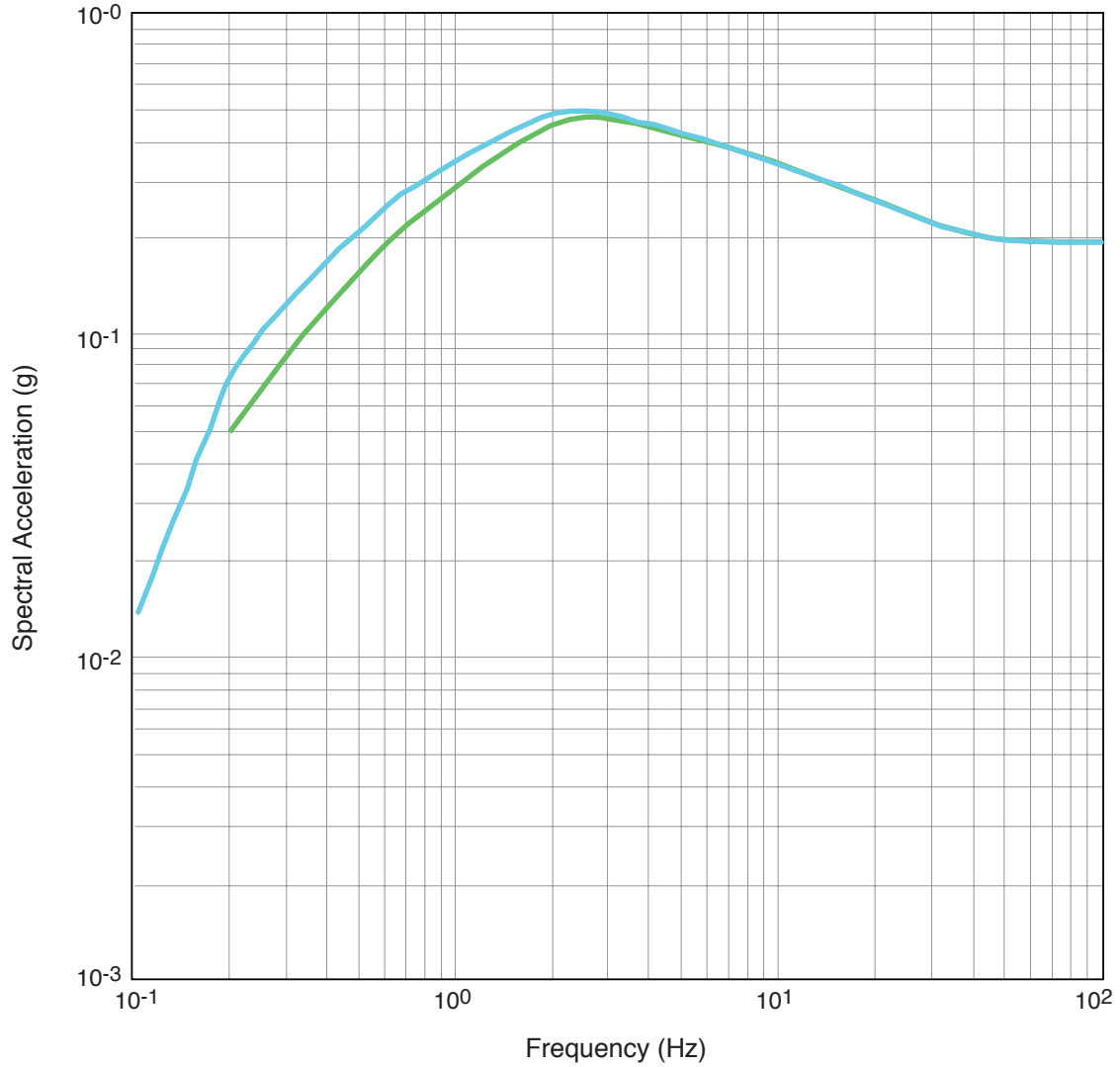
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GRAND GULF NUCLEAR STATION SITE
EARLY SITE PERMIT APPLICATION
SITE SAFETY ANALYSIS REPORT

HORIZONTAL SOIL DESIGN GROUND MOTION
(BLUE) AS ENVELOPE OF TOP OF LOESS
MOTION AND MOTION WITH TOP 50 FT OF
LOESS REMOVED (GREEN). NRC REGULATORY
GUIDE 1.60 SPECTRUM SCALED TO 0.3G (RED)

FIGURE 2.5-67

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JULY 30, 2004

**GRAND GULF, MEDIAN 10⁻⁵ ANNUAL PROBABILITY OF EXCEEDANCE (APE)
VERTICAL MOTION AT SOIL SURFACE**



Explanation

- Vertical soil design motion, PGA = 1.90g
- 5%, horizontal soil design motion, PGA = 0.190g

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EARLY SITE PERMIT APPLICATION
SITE SAFETY ANALYSIS REPORT

VERTICAL SOIL DESIGN MOTION BASED ON
NRC REGULATORY GUIDE 1.60 V/H RATIOS

FIGURE 2.5-68

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