

**RAI Volume 2, Chapter 2.1.1.3, Third Set, Number 2, Supplemental Question 3:**

Clarify the rationale for screening out the external flood as an external hazard in Section 6.5.2 of the *External Events Hazards Screening Analysis* (BSC 2008a) because the probable maximum flood does not exceed the site flood diversion capacity.

**1. RESPONSE**

The site flood diversion capacity has been established as 55,240 cubic feet per second on the basis of the probable maximum flood calculated in *Yucca Mountain Project Drainage Report and Analysis* (BSC 2007). External floods are screened out as external hazards because the frequency of exceeding this capacity (approximately  $3 \times 10^{-8}$  per year) is less than the Category 2 event sequence screening threshold ( $1 \times 10^{-6}$  per year). The peak flood flow at a frequency of  $1 \times 10^{-6}$  per year is 40,000 cubic feet per second. Furthermore, the frequency of exceeding the probable maximum flood as calculated in *Flood Hazard Curve of the Surface Facility Area in the North Portal Pad and Vicinity* (BSC 2008b) is approximately 3 orders of magnitude less than the Category 2 event sequence screening threshold.

*External Events Hazards Screening Analysis* (BSC 2008a, Section 6.5.2) summarizes the screening analysis for external floods. The last sentence of Section 6.5.2, part 3, of the screening analysis (BSC 2008a) states, “Because the frequency of the PMF is less than  $10^{-6}$  per year; the PMF does not exceed the site’s flood diversion capacity....” An expansion of this statement (in underline) for clarification is:

- “Because the frequency of the 55,240 cubic feet per second peak flow PMF is less than  $10^{-6}$  per year; the flood flow at a million year return period does not exceed the site’s flood diversion capacity; the PMF does not exceed the site’s flood diversion capacity....”

**2. COMMITMENTS TO NRC**

None.

**3. DESCRIPTION OF PROPOSED LA CHANGE**

None.

**4. REFERENCES**

BSC (Bechtel SAIC Company) 2007. *Yucca Mountain Project Drainage Report and Analysis*. 000-CDC-MGR0-00100-000-00A. Las Vegas, Nevada: Bechtel SAIC Company. ACC: ENG.20070924.0043.

BSC 2008a. *External Events Hazards Screening Analysis*. 000-00C-MGR0-00500-000-00C. Las Vegas, Nevada: Bechtel SAIC Company. ACC: ENG.20080219.0001.

ENCLOSURE 1

Response Tracking Number: 00290-02-00

RAI: 2.2.1.1.3-3-002

BSC 2008b. *Flood Hazard Curve of the Surface Facility Area in the North Portal Pad and Vicinity*. 000-PSA-MGR0-01900-000-00A. Las Vegas, Nevada: Bechtel SAIC Company.  
ACC: ENG.20080204.0007.