

**REQUEST FOR ADDITIONAL INFORMATION (RAI)**  
**Volume 3—Postclosure Chapter 2.2.1.2.2—Event Probabilities**  
**3<sup>rd</sup> Set (One RAI)**  
**(DEPARTMENT OF ENERGY'S SAFETY ANALYSIS REPORT Section 2.2.2.2)**

**RAI #1**

Please address why DOE has not provided a basis to exclude igneous event probability models published since 2000 (i.e., Ho et al., 2006) from consideration in SAR section 2.2.2.2.3.2. Address why published probability models in Ho and Smith (1997) and Ho et al. (2006), were not discussed in SAR section 2.2.2.2.3.2. This information is needed to determine compliance with 10 CFR 63.114.

Basis: In SAR section 2.2.2.2.3.2., DOE concluded that alternative probability models published between 1982 and 2000 (Tables 2.2-18 and 2.3.11-4) “cluster at slightly greater than  $10^{-8}$  per year.” DOE concluded that this “clustering” in published models provides confidence that the DOE probability estimate is robust. However, Ho and Smith (1997) and Ho et al. (2006) published probability estimates for future igneous events at Yucca Mountain, which are not included in SAR Tables 2.2-18 and 2.3.11-4 and are not discussed in SAR section 2.2.2.2.3.2.

References:

Ho, C.-H., and E.I. Smith. 1997. “Volcanic hazard assessment incorporating expert knowledge: Application to the Yucca Mountain region, Nevada, U.S.A.” *Mathematical Geology* 29: 615-627.

Ho, C.-H., E.I. Smith, and D.L. Keenan. 2006. “Hazard area and probability of volcanic disruption of the proposed high-level radioactive waste repository at Yucca Mountain, Nevada, USA.” *Bulletin of Volcanology* 69: 117-123.