



Q: *Would volcanoes affect repository safety?*

No. The likelihood of a volcano disrupting the repository is extremely low (one in about 70 million, or a chance of 0.0000014 percent, per year).

A: The DOE has relied upon the careful evaluation of the relevant data by a team of world-class experts, in order to assess the possibility of volcanic activity that might have an impact on how well a repository would contain and isolate the waste. Volcanologists started with a careful analysis of the entire geologic setting of Yucca Mountain. Then, with abundant data on regional volcanoes, they used computer modeling to understand each volcanic center's controlling structures. The DOE estimates the likelihood of such an event occurring during the first 10,000 years after repository closure to be one in about 70 million, or a chance of 0.0000014 percent, per year.

Between about 15 and 12 million years ago, a series of large-scale volcanic eruptions, located well to the north, deposited the materials that have formed Yucca Mountain. Hundreds of thousands of years ago, small-volume volcanoes (known as cinder cones), unrelated to the events that formed Yucca Mountain, erupted lava flows and cinders to the west of the site. These eruptions moved in a westward direction, away from the proposed repository. Volcanic activity in the Yucca Mountain region has been waning since then, with the last small eruption nearly 80,000 years ago. Because the conditions necessary for renewed volcanic activity have been reduced so much at Yucca Mountain, experts consider the chance of a volcano disrupting a repository to be virtually nonexistent.