



## Yucca Mountain Project: Not the Solution to Nuclear Waste



Yucca Mountain, Nevada, is the only site under consideration for disposal of the nation's high-level nuclear waste. Congressional politics singled out Yucca Mountain in the 1987 amendments to the Nuclear Waste Policy Act. The Department of Energy (DOE) is responsible for implementing the program, the Environmental Protection Agency (EPA) sets radiation exposure standards, and the Nuclear Regulatory Commission (NRC) is responsible for licensing the repository.

DOE's plan is to excavate a series of chambers inside Yucca Mountain and fill them with 70,000 metric tons of highly radioactive waste from 72 commercial and five Energy Department sites across the U.S. The chambers would sit about 300 feet above the water table. The radioactive waste, transported from across the country, would be packaged in disposal casks, loaded into the chambers, and later back-filled with dirt and rock. Around *11 billion* curies of radioactivity would be dumped in Yucca Mountain, compared to the 80 to 100 million curies released during the Chernobyl disaster.

### **Where Is Yucca Mountain?**

Yucca Mountain is 90 miles northwest of Las Vegas, Nevada, one of the fastest growing cities in the nation, and 12 miles from the farming community of Amargosa Valley, home to the largest dairy farm

in Nevada, delivering milk to the entire southwest. Groundwater from Yucca Mountain eventually finds its way to numerous natural springs in the region.

Yucca Mountain is within the land designated as Western Shoshone in the Treaty of Ruby Valley. The project is opposed by most tribal governments in the region, and violates Western Shoshone sovereignty and law.

### **Recommendations**

- Support legislation that mandates reinforced dry cask storage of nuclear waste at reactors.
- Defund the Yucca Mountain Project. It is a waste of taxpayer money.
- EPA should issue revised radiation protection standards for any repository to truly protect future generations throughout the peak dose period, estimated at over 250,000 years.
- The United States must honor the 1863 Treaty of Ruby Valley with the Western Shoshone Nation.
- Oppose Bush Administration legislation to further weaken existing nuclear waste storage standards.

### **Unsuitable for Waste**

More than 25 years of analysis has revealed significant problems with the Yucca Mountain site.

The region is seismically active and the rock is highly fractured, which allows a pathway for water to move through the mountain. According to DOE's own analysis, in the absence of human engineered barriers (like casks), contaminated water could reach drinking wells in 200 to 400 years.

As a result, DOE has moved away from a cornerstone of the original law – that the site's geology itself provide primary waste isolation.

In order for the project to move forward, regulations have been changed or eliminated to accommodate deficiencies of the site. The combination of readily available water inside the mountain and an oxidizing geochemical environment makes Yucca Mountain quite corrosive to existing container



Practice for the inevitable: an emergency preparedness exercise near the Savannah River Site involving a mock nuclear waste cask. DOE expects 150 to 400 accidents while transporting radioactive waste to Yucca Mountain through 44 states.

designs, leaving great uncertainty as to whether the waste could be contained for the hundreds of thousands of years that it will be dangerous.

### **Waste Transportation**

Planned nuclear waste shipments to Yucca Mountain for just one year would outnumber all such shipments made over the past three decades in this country. Accidents are inevitable: DOE estimates that up to 400 accidents will occur over the 20 to 30 years of shipping. The transportation scheme puts approximately 50 million people in 44 states within the potential exposure zone, largely without their knowledge. This unnecessary risk and the potential for terrorist attacks on any of the thousands of waste shipments is unacceptable.

### **Yucca Mountain Does Not Solve the Nuclear Waste Problem**

Every active nuclear reactor will continue to be a waste site, since irradiated fuel rods must be cooled underwater on-site for an average of 5 years before they can be moved. The Yucca Mountain Project does not eliminate the significant environmental and public health risks that spent fuel pools pose to communities near reactors.

Furthermore, by 2017, the earliest that Yucca Mountain could open, more than its legal storage limit of 63,000 metric tons of commercial reactor waste will already exist because of new waste nuclear reactors steadily produce. As soon as Yucca Mountain opens, a second repository would be needed.

Reprocessing spent fuel under the proposed Global Nuclear Energy Partnership will not solve the waste problem. Though described by proponents as “recycling” spent fuel, reprocessing creates more waste and does not eliminate the need for a geologic repository.

Reactor waste should be stored in reinforced dry casks as near as possible to the sources of generation. It can then be managed for 100 to 200 years while some of the most radioactive elements, such as strontium-90, decay away and the waste becomes less dangerous to handle.

### **Current Status**

President Bush and Congress approved Yucca Mountain in 2002, and DOE is planning to submit a license application to the NRC by June 30, 2008. The licensing of Yucca Mountain would be the last hurdle to the “official” beginning of construction (unofficial construction has been underway for years). If Yucca Mountain is completed, DOE would expect its first shipments in 2017.

There is no radiation protection standard for Yucca Mountain, which is necessary for the project to move forward. In 2005, the EPA released a draft that would allow the least protective radiation standard in the world and weaker groundwater protection standards than the agency’s previous recommendations. The EPA is expected to release its “final” standard this spring, but a court challenge is likely.

Even NRC commissioner Edward McGaffigan has said, “It may be time to stop digging ...[at Yucca],” noting that the project has been undermined by “bad law, bad regulatory policy, bad personnel policy,...bad budget policy” and other problems “throughout its history.”

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