

YUCCA MOUNTAIN PROJECT: NOT THE SOLUTION FOR NUCLEAR WASTE



Yucca Mountain, Nevada, is the only U.S. site under consideration for disposal of the nation's high-level nuclear waste. Congress 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 are about 1,000 feet above the water table. The radioactive waste, transported from across the country, would be packaged in disposal casks, loaded into the chambers, and sealed at some future time. 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, which delivers milk to the entire southwest. Groundwater from Yucca Mountain eventually finds its way to numerous Amargosa Valley natural springs that provide drinking and irrigation water in the region.

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

UNSUITABLE FOR WASTE DISPOSAL

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 water to move through the mountain. According to DOE's own research, without 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 to continue the project, DOE regulations have been changed to accommodate the site's deficiencies, and EPA radiation standards have been so weakened that they have not

Recommendations

- Stop funding for the Yucca Mountain Project.
- Honor the 1863 Treaty of Ruby Valley with the Western Shoshone Nation.
- Oppose legislation that would further weaken nuclear waste disposal standards or create away-from-reactor interim storage sites.

survived court challenge. The combination of water inside the mountain and an oxidizing geochemical environment makes Yucca Mountain quite corrosive to existing containers. Therefore, containment is unlikely for the thousands of generations that the wastes remain radioactive.

WASTE TRANSPORTATION: NEEDLESS DANGERS

Nuclear waste shipments to Yucca Mountain in just one year would outnumber all such shipments made in 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 risk and the potential for terrorist attacks on any of the thousands of waste shipments are unacceptable. The shipments are unnecessary since the waste can stay at existing reactors if better storage technologies are used.

DOES NOT SOLVE NUCLEAR WASTE PROBLEM

Every active nuclear reactor will continue to be a waste facility, since irradiated fuel rods must be cooled underwater on-site for about five years. 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 have been generated. In addition, operating reactors produce about 2,000 metric tons of new waste each year. Thus, as soon as Yucca Mountain opens, a second repository would be needed.

Reprocessing spent fuel under the proposed Global Nuclear Energy Partnership (GNEP) will not solve the waste problem. Though described by proponents as "recycling" spent fuel, reprocessing creates more radioactive waste and does not eliminate the need for a disposal solution.

Due to the uncertainty of Yucca Mountain, DOE is attempting to establish "interim storage" away from reactor sites. If allowed, this plan will likely involve very long-term storage and would require significant transportation with the resulting accident and terrorist risks.

A better alternative is to store reactor waste 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 cesium-137 and strontium-90, decay away, and the waste becomes less dangerous to handle.

CURRENT STATUS

President Bush and Congress approved Yucca Mountain in 2002. DOE may submit a license application to the NRC sometime in 2008. However, EPA still has not issued a final radiation protection standard for the site. In 2005, EPA released a draft that would create the least protective standard in the world and allow weaker groundwater protection than the agency's previous recommendations. Such a weak standard would face another court challenge, but a stronger standard would require a revised license application.

Former NRC commissioner Edward McGaffigan said in 2007, "It may be time to stop digging... [at Yucca Mountain]," 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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