

Will Trump and Perry Revive Proposed Yucca Mountain Nuclear Waste Repository?

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Posted 27 Jan 2017 | 13:00 GMT

<http://spectrum.ieee.org/energywise/energy/nuclear/will-trump-and-perry-revive-proposed-yucca-mountain-nuclear-waste-repository>

Will Yucca Mountain rise again?

The answer may be more political than technical. And the topic of long-term nuclear waste storage is just one of dozens facing Energy Secretary-designate Rick Perry, should he be confirmed by the Senate.

The remote Nevada site is just one of several options for the new administration to consider. Yucca Mountain in Nevada was legally designated decades ago as the site for long-term storage of used nuclear fuel from domestic U.S. reactors.

Despite its desert location some 160 kilometers northwest of Las Vegas, the 400-meter-high dormant caldera volcano ranks as one of the most studied pieces of geology on earth. Technical and environmental studies basically conclude that the site is suitable to store used nuclear fuel for 1 million years.

But opposition to Yucca Mountain as a repository—led by former Senate Minority Leader Harry Reid and Sen. Catherine Cortez Masto (who previously was the state's Attorney General)—prompted the Obama administration to end funding for Yucca Mountain in 2011 after decades of study and development work that rang in at around \$9 billion.

Obama and Reid are now gone and there's a new sheriff and deputy in town: President Donald Trump and, presumably, Rick Perry. They may decide to dust off Yucca Mountain and resume work on the nuclear repository. But maybe not so fast.

For-Profit Storage

First, in early 2016 Waste Control Specialists applied to the U.S. Nuclear Regulatory Commission for a license to build and maintain a temporary storage site for used nuclear fuel. The site in the Texas Panhandle already hosts a low-level nuclear waste facility. The idea is for Waste Control to run the storage site as a for-profit business. If the NRC approves the application, the facility could begin accepting used nuclear fuel for interim storage early in the next decade.

Second, in April 2015 Holtec International and the Eddy Lea Energy Alliance (ELEA) signed a memorandum of agreement to build an underground interim waste storage facility in southeastern New Mexico, near the Texas border. ELEA is owned by the cities of Carlsbad and Hobbs, along with Eddy and Lea counties. It has the support of the state of New Mexico and intends to build the facility on industrial land.

Those two initiatives change the calculus somewhat: Two competing entities that see an economic upside to storing used nuclear fuel that Nevada has little interest in accepting. Licensing one or both sites for interim storage could provide the federal government with more time to resolve the political problem of choosing a permanent repository, as required by law.

Tribal Initiative

And it's by no means impossible for a private entity to win an NRC license to store nuclear waste on an interim basis. A decade ago, the NRC approved a license to store waste on the Skull Valley Goshute Reservation in Utah. The Native American tribe arranged with a group of electric utilities to store used nuclear fuel casks on what essentially would be a highly secure parking lot on tribal land. The revenue stream would have funded a range of tribal activities.

But the idea ran afoul of Utah's Senator Orrin Hatch and then-Senator Bob Bennett. They opposed the plan and convinced several utilities to pull out. They also pushed to have DOE move forward with Yucca Mountain in neighboring Nevada.

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The Skull Valley developers eventually withdrew their license and scrapped their plans. Even so, the effort proved that the NRC could and would issue a license for the interim storage of used nuclear fuel.

Of course, as the political bickering continues, the used fuel that sits in storage casks at nuclear power plants across the U.S. continues to decay. And that's not entirely a bad thing. In fact, time may make it somewhat easier to deal with the waste issue.

Half-Life

Take cesium-137 for example. It is a radioactive isotope of cesium, one of the more common byproducts of the nuclear fission of uranium-235. Cesium-137 ranks among the most problematic of the short-to-medium-life fission products. That's because it can readily move and spread due to the high water solubility of salts, which are cesium's most common chemical compounds. Important to our story is that cesium-137 has a half-life of a little more than 30 years.

Now take strontium-90. It is a radioactive isotope of strontium and also is produced by nuclear fission. Its half-life is just under 30 years.

Those half-lives suggests an intriguing scenario to some in the industry who note the growing amounts of used nuclear fuel that either has decayed or will soon decay past an important half-life. That means the used fuel has cooled to the point where the risks involved in its short-term storage are reduced. Certainly not eliminated, but perhaps reduced.

In short, time may be on DOE's side. But maybe not when money is considered.

Payouts

That's because yet another pressure point is the civil penalties that courts have awarded to utilities to compensate them for DOE's failure to provide a permanent storage site for used fuel.

In late 2000, a federal appeals court ruled that four electric utilities could seek millions of dollars in damages from the government. Since then, many other utilities have filed payment claims. And DOE has said that the amount paid in damages so far is around \$4.5 billion, with an estimated \$22.6 billion of future potential liability.

The Trump administration may find that the half-life of the political debate over permanent storage, and the ultimate fate of Yucca Mountain, may not yet have been reached.