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DOE Drops Yucca Mountain

Energy secretary begins search for alternative ways to handle and dispose of radioactive waste

[Jeffrey W. Johnson](#)

YUCCA MOUNTAIN is no longer an option for radioactive waste disposal, said Energy Secretary Steven Chu at a Senate Energy & Natural Resources Committee hearing on March 5. Instead, the [Department of Energy](#) will look into alternatives to the Nevada repository and will create what Chu called an "esteemed commission" to sort out radioactive-waste-disposal options. The commission's report, he told senators, will be completed by the year's end.

Although Chu's announcement was not a complete surprise—during the presidential campaign, [President Barack Obama](#) said he opposed the repository—it drew an angry reaction from several senators at the hearing.

In planning since the 1970s, [Yucca Mountain](#) is perhaps the world's best studied piece of desert real estate.

Just last year, DOE submitted an 8,600-page application to the [Nuclear Regulatory Commission](#) (NRC) to begin construction. The approval process could take four years, and although Yucca Mountain was required by law to have been completed by 1998, it is not expected to open until 2020 or later. The project has faced endless challenges, primarily from Nevada and environmental groups ([C&EN, May 5, 2008, page 15](#)).

Leading the criticism of Chu's announcement was Sen. [John S. McCain](#) (R-Ariz.), who as a 2008 presidential candidate announced his plan to build 45 new nuclear reactors, nearly half the number of U.S. reactors in operation today.

At the hearing, McCain sharply argued that without a waste repository or a firm alternative plan to reprocess waste, the nuclear power industry would be unlikely to move ahead on its proposal to build new power plants.

Chu in turn stressed that he supports nuclear power and would speed up a DOE program to provide loan guarantees to the first "two or three power plants." But it is now time to reexamine nuclear waste issues, he said, because "we have learned a lot in the last 25 years," and scientists could do a better job today.

McCain urged Chu to strongly consider reprocessing nuclear waste, pointing to spent-fuel-reprocessing programs in Europe and Japan. Although Chu said he supports reprocessing research, he countered that current programs have resulted in nuclear nonproliferation hazards as a result of plutonium separation.



NEI
MORE OF THESE Chu's plan will rely on dry-cask storage of radioactive waste while DOE determines and implements a long-term solution.

INDEED, the efforts McCain cited have created hundreds of tons of surplus plutonium and generated opposition from the nuclear arms proliferation community ([C&EN, June 18, 2007, page 48](#)).

"Recycling or reprocessing—I personally feel—for the long term could be very beneficial and has the potential to greatly reduce the amount of waste," Chu responded. It is something the U.S. needs to continue to pursue, he said.

But for now, Chu backs temporary waste storage at several unspecified sites. "The interim storage of waste, or solidification, is something we can do today," he said. "The NRC says it can be done safely without risk to the environment. That buys us time to formulate a comprehensive plan in how we deal with nuclear waste."

And studying reprocessing will be part of any such plan, Chu said, adding that "frankly, I feel we have a couple of decades to figure that one out."

McCain was not satisfied. "I couldn't disagree more strongly," he said. "Nuclear energy has got to be an integral and vital part of America's energy future if we are going to reduce greenhouse gas emissions, and to say—after 20 years and \$9 billion being spent for Yucca Mountain—that it is not an option, period, is a remarkable statement."

Unlike McCain, however, the nuclear industry agrees with Chu, at least in part.

In a statement, Marvin S. Fertel, chief executive officer of the [Nuclear Energy Institute](#) (NEI), said the industry trade association endorses creation of an independent panel to make recommendations to President Obama on how to best manage nuclear waste. In the meantime, Fertel said, companies should rely on interim waste storage.

NEI also backs further research on spent-fuel reprocessing, but it wants NRC's review of DOE's Yucca Mountain licensing application to continue, Fertel said.

If the waste is reprocessed, the composition of the waste will change and that in turn will change repository requirements, Fertel said. These issues, he added, should be addressed by the independent panel.

However, NEI warned that if DOE unilaterally abandons Yucca Mountain without a waste plan or legislation to change current legal requirements for a repository, a new wave of lawsuits can be expected from industry. Also, the nuclear power industry may seek a refund from DOE of \$22 billion it has collected from electricity ratepayers to build the repository.

Expanding on Chu's testimony, DOE Press Secretary Stephanie Mueller explained to C&EN that Chu's goal is to bring together "the best minds on this topic and really look at the science and research that has accumulated in the last couple of decades."

Yucca Mountain's future will be one issue discussed by the new panel. "However," she continued, "the bottom line is clear: Yucca Mountain is not an option."

The commission, she said, will be constituted over the next few weeks.

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