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Japan Nuclear Crisis Revives Long U.S. Fight on Spent Fuel

By **MATTHEW L. WALD**

WASHINGTON — The threat of the release of highly radioactive spent fuel at a Japanese nuclear plant has revived a debate in the United States about how to manage such waste and has led to new recriminations over a derailed plan for a national repository in Nevada.

Pools holding spent fuel at nuclear plants in the United States are even more heavily loaded than those at the Japanese reactors, experts say, and are more vulnerable to some threats than the ones in Japan. However, utility companies have taken steps since the 9/11 terrorist attacks to make them safer.

Adding to those concerns, no plan to move the waste has emerged to replace a [proposed repository at Yucca Mountain](#) in the Nevada desert. [President Obama](#) promised to cancel the project during his 2008 campaign, and last year he told the Department of Energy to withdraw [an application](#) that it had submitted to the [Nuclear Regulatory Commission](#) for a construction license.

Frustration in Congress is growing. “You have an unholy mess on your hands,” Representative [John D. Dingell](#), Democrat of Michigan, told the chairman of the Nuclear Regulatory Commission, Gregory B. Jaczko, at a [House subcommittee hearing](#) last week. “The stuff keeps piling up, and you’ve doubled the amount that you can store in a single pool, but that’s running out. Is there a long-term plan anywhere in government?”

Congress selected Yucca Mountain as its first choice for a waste site in 1987, pending engineering studies. Many lawmakers said the Obama administration lacked the authority to stop the project and should revive it so that waste can be removed from their states.

Support for the Yucca Mountain project is strong among both Republicans and Democrats in the House. But the Senate majority leader, [Harry Reid](#) of Nevada, has promised supporters back home that it is dead.

Even if a national consensus were to emerge to revive the Yucca Mountain plan, it could not receive nuclear waste for at least 10 years, proponents acknowledge.

Before President Obama pulled the plug on Yucca Mountain, officials estimated that it would take five years to authorize construction and six years after that before the site was ready to accept fuel, said Brian O'Connell, a nuclear waste specialist at the [National Association of Regulatory Utility Commissioners](#).

For the site to begin accepting fuel within 10 years, "everything would have to be green lights," he said. "And you could anticipate the instinct will be to go more slowly because of what happened in Japan."

Scientists and engineers suggest an interim fix is to store more spent fuel in dry casks, already a practice at many plants, although moving them to a remote central site would be better. Some of the casks are at retired or torn down reactor sites and require a high level of security.

South Carolina and Washington State, meanwhile, [have sued the federal government](#), arguing that it has an obligation to accept the waste, some of which comes from the manufacture of nuclear weapons. On Tuesday, the United States Court of Appeals for the District of Columbia heard oral arguments in one case.

The not-in-my-backyard politics of nuclear waste have changed in recent decades. Congress chose Yucca Mountain over sites in Texas and Washington in 1987, when those two states were ascendant in the Capitol. The House speaker, Jim Wright, was a Texan, and so was the vice president, George Bush. The House majority leader, Thomas S. Foley, was from Washington State. Mr. Reid was a mere freshman senator.

Beyond the objections of Mr. Reid's constituents to opening Yucca Mountain, it is not clear that it is a good place to bury nuclear waste. One problem is that the courts have interpreted federal law as requiring the Energy Department to show that the waste can be safely stored in canisters there for one million years. So far, the department has established only that it can contain the material for 10,000 years.

Examination of the mountain has also shown that if the fuel canisters degrade in millennia to come, water would spread the waste faster than initially thought. Formed from volcanic material, the mountain's rock was assumed to be barely permeable, but it has cracks through which water travels rapidly. In addition, the United States has about 72,000 tons of spent fuel from civilian sites and many tons of military waste — more than Yucca could hold under current laws.

In moving to withdraw the license application for the site last year, President Obama **appointed a special panel** to explore nuclear waste disposal, and a preliminary report is due in a few weeks.

The panel's members have not been asked to propose a specific site. Instead, they are examining issues like whether the spent fuel should be chemically recycled to recover plutonium produced in uranium-powered reactors for reuse, as it is in France and Japan. Another option is to develop a new class of reactors that would transmute nuclear waste into less troublesome materials.

It is also debating what procedure the United States should use in selecting a repository, which would be needed in any case. So far, the political wisdom has been that Congress should choose a community rather than bargain with localities, although that has been successfully done in some Scandinavian counties. In the United States, the selection process has led to gridlock and the scattering of the waste in numerous locations.

Even the federal government's decision to drop Yucca became a political thicket. When the Energy Department said in June that it wanted to withdraw its application, a panel of three administrative law judges **said there was no provision** in the law to do that, and it rejected the idea.

That ruling was automatically appealed to the full five-member Nuclear Regulatory Commission. One commission member recused himself because of previous work on the Yucca Mountain issue, and the others seem to be deadlocked on whether the application can be withdrawn. A 2-to-2 vote would fail to override the three-judge panel, and its ruling would stand.

But Mr. Jaczko, the commission chairman and a former member of Senator Reid's staff, has refused to bring the matter to a final vote, leaving it unsettled.

At the **House Energy and Commerce Committee hearing** at which Mr. Dingell spoke last week, Representative John Shimkus, Republican of Illinois, asked Mr. Jaczko why he had suspended the commission's work on judging the technical merits of the repository.

"There's no legal authority to close Yucca Mountain," Mr. Shimkus said, adding that federal law required the commission to judge the license application.

Mr. Jaczko replied that he had acted within his authority as chairman. Mr. Shimkus countered, "You better be double-checking your facts, because we're not through with this debate on legal authority, and I hope you're well prepared."

Utility companies have complained about the Yucca decision, too — but not too loudly because they do not want the lack of a long-term policy to interfere with the potential construction of new reactors or their ability to operate the 104 that are now running. The Nuclear Regulatory Commission recently ruled that it was confident that waste **could be stored for decades** in dry casks, a policy shift that could help advance the construction of new reactors.

For now, the only national consensus about nuclear waste — that utilities should pay one-tenth of a cent for every kilowatt-hour that their reactors generate into a federal waste fund — is also threatened. The National Association of Regulatory Utility Commissioners **is suing** to end the fee, arguing that it is not needed to support the waste program because Yucca Mountains has been shelved.

Even if the repository were to open, said Robert Alvarez, a former Energy Department official, the challenge would be to move spent fuel faster than it is produced. “Even if they had the ribbon-cutting ceremony today, it will take decades to move the current inventory into a repository,” he said. “By that time, we’ll have a comparable amount sitting in pools.”

He and others support expanding the use of dry casks. Workers lower a steel box into the spent fuel pool, place the fuel inside it, drain the box of liquid and then pump it full of an inert gas to prevent rust. The box is then placed in a concrete-and-steel sleeve on a concrete pad surrounded by concertina wire and closed-circuit cameras, resembling a basketball court at a maximum-security prison.

The dry casks require no mechanical cooling because the fuel placed inside them has cooled enough so that the simple circulation of air outside of the steel box will keep the temperature well below the fuel’s melting point.

Critics have said that the boxes could become terrorist targets. The nuclear industry maintains that even if a cask were breached, the worst case would be the scattering of some dry radioactive ceramic pellets.

Yet so far the industry has resisted expanded use of dry casks despite a **National Academy of Sciences study** recommending their use. And even if that resistance disappeared, some fuel has to stay in the pool for several years after it is taken from the reactor, until the heat generation is so small that the fuel will not melt inside a dry cask.

