

# Déjà vu for U.S. nuclear waste

**W**ith the arrival of the 115th U.S. Congress, the House of Representatives began hearings on the Nuclear Waste Policy Amendments Act of 2017. The legislation restarts Yucca Mountain as a repository for highly radioactive waste. In 1987, Congress amended the Nuclear Waste Policy Act of 1982, selecting Yucca Mountain, Nevada, as the only site to be studied, expecting the repository to open in 1998. It did not. Over the past 30 years, not much has changed. But going forward—or not—with Yucca Mountain will not address the systemic problems of the U.S. nuclear waste program, and this may well lead to continued failure.

Spent nuclear fuel from power plants has accumulated at more than 70 sites in 35 states, and highly radioactive waste from defense programs remain at U.S. Department of Energy (DOE) sites. Used fuel is transferred to casks, where they may wait for decades to cool to temperatures required for transport. Clearly, the back end of the nuclear fuel cycle is broken.

There are major obstacles to the current nuclear waste program. Nuclear facilities, whether for disposal or interim storage, take decades to plan, license, and build. Moreover, sustained opposition to a nuclear facility can prevail, simply because opponents only need to succeed occasionally to derail large, complicated projects. The United States needs a strategy that can persist over decades, not just until the next election.

Key to any strategy is the creation of a new organization for the management of nuclear waste. The DOE, designated by law to lead the nation on this issue, has failed, in part due to changing political winds. Creating a new organization to manage this problem is not a new recommendation. The 2012 Blue Ribbon Commission on America's Nuclear Future suggested a new, single-purpose, government-chartered corporation for the task. A series of recent meetings (Reset of U.S. Nuclear Waste Management Strategy and Policy) considered a utility-owned organization to have important advantages. Indeed, four

of the most advanced nuclear waste management programs—in Canada, Finland, Sweden, and Switzerland—have placed responsibility for managing and disposal of spent fuel with a single nonprofit organization owned by the nuclear utilities. Consequently, these companies have strong technical and financial incentives to make decisions focused on the final goal—geological disposal.

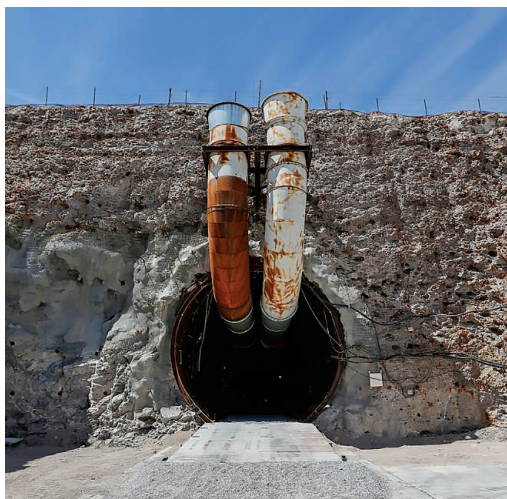
Funding a new organization is critically important. Although U.S. ratepayers have paid (\$0.001/kWh) for nuclear waste disposal, the U.S. program has not moved forward because congressional appropriations from the Nuclear Waste Fund are subject to statutory (Budget Control Act of 2011) and procedural (congressional budget resolutions) limits, in addition to political ones, that restrict availability of the funds. The Nuclear Waste Fund, now \$35 billion dollars, is used instead to offset the federal debt. A utility-owned management organization would not suffer from the vagaries of the political process. Fees could be collected and used by the utility-owned organization.

Also essential is trust. Although a new organization would exist within a web of oversight entities (federal regulator, state agencies, independent scientific review, and public interest groups), it could only operate successfully with the trust of all affected parties. The organization must direct a robust science program and manage a major engineering and construction project under intense public scrutiny and engagement over many decades.

A new U.S. program also should pay attention to the successes of other programs, particularly in Sweden, Finland, Canada, and France. A well-designed process with technical criteria for site selection and for public engagement and approval has been key to their success.

Without addressing these issues, the U.S. program cannot expect to succeed. Otherwise, in 30 years, Congress will be holding hearings on yet another generation of amendments to the Nuclear Waste Policy Act.

—Allison Macfarlane and Rod Ewing



**“..Yucca Mountain will not address the systemic problems of the U.S. nuclear waste program..”**



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# Science

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