



Fund cleanup

Congress should provide sufficient funding to meet environmental agreements and improve contractor performance oversight.

The Department of Energy (DOE) estimates that taxpayers will spend from \$369 billion to \$414 billion from 1997 to 2075 to address the cost of Cold War nuclear weapons wastes.

That estimate increased by \$26 billion during the past year! Congress and past administrations have not provided funding sufficient to address the public health and environmental threats. Annual funding of about \$6 billion cannot keep up with rapidly escalating costs, so the ultimate cost is likely be more than any current “high” estimate.

The contamination is severe and remediation is difficult at the nine most contaminated sites:

- Hanford, WA (\$141.7 billion)
- Savannah River, SC (\$115 billion)
- Paducah, KY (\$41 billion)
- Idaho National Lab (\$21 billion)
- Oak Ridge, TN (\$18.7 billion)
- Portsmouth, OH (\$18.5 billion)
- Rocky Flats, CO (\$8.8 billion)
- Waste Isolation Pilot Plant (WIPP), NM (\$7.5 billion)
- Los Alamos, NM (\$7.3 billion).

Only one of those sites (Rocky Flats) is deemed “cleaned up,” and even there, like the other sites, the dangers to workers, the public, and the environment will persist for decades.

The actual threats and costs are even higher:

- No money is included for the Nevada nuclear weapons test site cleanup,
- Disposal costs for high-level waste are uncertain,
- DOE is not addressing significant soil and water contamination,
- Costs of remediation of all of the existing active weapons laboratories and

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Nuclear waste: safety 1st

Congress should not fund consolidated storage of spent nuclear fuel or Yucca Mountain.

Who is responsible for the highly radioactive waste (spent fuel) from nuclear power reactors? Federal law has always embraced the doctrine “Polluter Pays,” making clear that utilities own the waste and are responsible for storage.

Figuring out what to do with waste that is dangerous for thousands of years has been an enduring challenge.

In 1982, Congress passed the Nuclear Waste Policy Act (NWPA) which required utilities to pay into a fund to develop underground repositories and pay for transportation of spent fuel to disposal sites.

Five years later, Congress amended its waste law to designate Yucca Mountain, Nevada, as the repository for spent fuel. It was to be opened by January 31, 1998.

But it did not open. It was not built. The state of Nevada staunchly opposed the repository. It vetoed the site for technical reasons in 2002, but Congress overrode the veto.

In 2008, the Department of Energy submitted a license application to the Nuclear Regulatory Commission for Yucca Mountain. That application has not been acted upon. Congress, since 2010, has not provided funding for the licensing process.

The FY2019 budget request of the Trump Administration resurrects Yucca Mountain with a proposal to spend \$47.7 million dollars to restart the licensing process and \$110 million to restart DOE activities.

Currently, virtually all commercial

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No more waste

Congress should not fund small modular reactors.

At the turn of the 21st century, the Bush Administration touted a nuclear power renaissance. But the industry has stalled again. Now the Department of Energy (DOE) is simply trying to keep it alive.

The 2019 budget request states its determination: “The Department believes it is not too late, and indeed possible, to reverse the downward trajectory of our nation’s nuclear energy sector.”

Key beneficiaries of DOE’s support are small modular reactors (SMRs). Traditional power reactors can produce 1000 megawatts or more. SMRs are 300 MW or smaller. But size may not matter all that much.

Nuclear power uses more water than any other electricity source and produces dangerous nuclear waste. It’s slow to deploy and costs more money. Per megawatt, the math for SMRs is even worse.

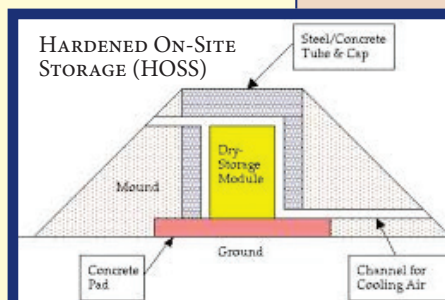
Early hopes that lower costs would spur development have not panned out. Instead, SMR developers are relying on government subsidies to stay afloat.

So far, DOE has spent hundreds of millions of dollars on SMR projects. In 2012 and 2013, two developers were each awarded 50% cost-sharing grants worth \$217 million each. One effort was shelved, but NuScale, a Fluor subsidiary, continues to receive subsidies (\$40

million in 2018) and is in line for some or all of the \$54 million requested for 2019.

Utah Associated Municipal Power Systems (UAMPS) proposes to build twelve NuScale reactors totaling 600

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Fund cleanup (cont'd)

production sites are not included,

- Costs for new wastes from new nuclear weapons are not included in the estimates,

- Past, present, and future human health costs also are not included.

In February 2017, the Government Accountability Office (GAO) High Risk Report concluded that, since 1990, “DOE’s record of inadequate management and oversight of contractors has left the department vulnerable to fraud, waste, abuse, and mismanagement.”

The severity of the public health and environmental problems have driven states to litigate or negotiate “cleanup” agreements with DOE. Many of those agreements also include the Environmental Protection Agency (EPA) for sites that are under the Superfund law. Those agreements include milestones on specific problems. For example, the Hanford Tri-Party Agreement was signed in 1989 and emphasizes addressing the 56 million gallons of high-level waste in 177 tanks, a third of which have leaked.

DOE often misses the milestones, which results in fines, revisions in the agreements, and continuing contamination. Congress has not required DOE to publicly state what funding is necessary to meet the milestones it has established with states that host weapons facilities. Congress consistently fails to appropriate adequate funding.

About 90 percent of DOE Environmental Management funding goes to private contractors that operate the sites and carry out remediation activities. Contractors have received bonuses despite cost overruns, poor performance, and worker contamination. Whistleblowers are often retaliated against or fired for reporting problems.

The result? Worker and public health risks persist. Fully funding cleanup obligations would not only reduce risks, it would create needed jobs in many communities.



HANFORD TANK FARM

Waste: safety 1st (cont'd)

spent fuel—about 80,000 metric tons—is stored where it is generated, at reactor sites, in pools or dry casks. The NRC estimates it can be safely stored there for 140 years. Hardened On-Site Storage (HOSS) would improve safety at the reactor sites and relieve pressure to develop an unsafe and unsound facility at Yucca Mountain.

Private contractors are also trying to profit from a dangerous storage game. Holtec International has applied for a license for in-ground storage of up to 100,000 metric tons of spent fuel. Of course, this would mean transporting overweight casks through major metropolitan areas across the country.

Waste Control Specialists in west Texas also applied for a license for 40,000 metric tons of spent fuel storage, though the licensing process was suspended last year.

These companies want the government to pay for their facilities with funds from the Nuclear Waste Fund, and they want to change the NWPA so that taxpayers will own the waste and be responsible for transportation and storage. This deal would transfer all risk to the public and would require moving the waste twice.

Other efforts to establish private facilities have failed. In 2008, Private Fuel Storage in Utah received an NRC license to store 40,000 metric tons of spent fuel, but the facility has not been built because of significant public opposition. Congress created a Wilderness Area to protect the site, and both the Bureaus of Land Management and Indian Affairs also blocked the project.

This year, a bill in Congress, HR 3053, would authorize funding for Yucca Mountain and private consolidated storage. The FY2019 budget request includes \$10 million for the latter.

Congress should not pass HR 3053 and should not appropriate funds for

Yucca Mountain or consolidated storage. Instead, Congress should improve public safety by requiring Hardened On-Site Storage at or near reactor sites.

No more waste (cont'd)

MW. Every year the schedule for them to go online shifts out about a year.

UAMPS expects taxpayer money to cover at least 50% of their construction costs, which have risen to a whopping \$4.2 billion.

There are indirect subsidies, too. UAMPS plans to build the reactors on the Idaho National Laboratory (INL), which is federal land. (The Tennessee Valley Authority also plans a future SMR on federal land.) INL plans to lease two of the twelve reactors for “research,” which will defray UAMPS’ costs.

It’s increasingly apparent that UAMPS will not be able to sell all 600 MW, so DOE is planning to help it sell power to 11 DOE and Department of Defense (DOD) sites in the west. That monetizes the agency’s nuclear bias and counters the claim that SMRs can be sized to a market.

The environmental costs are steep as well. UAMPS would use 40% more enriched uranium fuel than regular reactors to produce a megawatt. That means it would produce more intensely radioactive spent fuel waste for which there is no final repository.

SMRs produce more plutonium per megawatt than traditional reactors, which translates into an increased proliferation risk. The layout of the nuclear plant proposed for Idaho exacerbates the risk because all twelve of its reactors are refueled in a single area, increasing the risk of theft or diversion.

Of all the ways to make electricity, nuclear uses the most water. Per megawatt, UAMPS’ power plant would use 25% more water than a full-sized reactor.

In 2011 the Union of Concerned Scientists published a study of all government subsidies for nuclear power over time. They concluded that, in many instances, it would have been cheaper for the government to buy the electricity and give it away for free.

Congress and DOE should not continue to underwrite small modular reactors. The math doesn’t work, and the intensely hazardous waste will persist for millions of years.