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Recycling nuclear waste is not the win-win it seems like it should be

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The idea of turning Yucca Mountain into a nuclear waste reprocessing facility, which some Nevadans are proposing, sounds wonderful.



It would work like this: Instead of being a place where used nuclear fuel rod assemblies would be stored, Yucca Mountain would become a facility where the radioactive materials from those assemblies would be extracted and shipped off to be reused in nuclear power plants or to run small modular reactors.

High-paying jobs would be created, the nation's thousands of tons of nuclear waste would be dealt with and the environment would be better off for it.

If only it were that neat and simple.

But the hard facts behind reprocessing show that doing it at Yucca Mountain is almost as scary as storing waste there.

With all due respect to proponents of the idea, who deserve some credit for thinking outside the box on the site and trying to break through Nevadans' intense polarization on the site, it doesn't deserve consideration. Here are a few key reasons why:

- It's expensive. Reprocessing does yield new fuel, but it costs up to 10 times more than producing conventional fuel uranium that is mined and enriched. That being the case, the market price of reprocessed fuel is far higher than enriched uranium, so it's not a cost-effective option for nuclear plant operators.
- It doesn't solve the transportation problem. Radioactive materials would still be shipped into Nevada, and some of the transportation routes for the waste cut through the heart of the Las Vegas Valley. This isn't just a NIMBY issue, either, considering that the routes also pass through 43 other states.
- It's water-intensive. According to one estimate, it would require 50,000 acre-feet of water annually, or the equivalent of enough for 100,000 homes for a year. Considering that the water in the Yucca Mountain area is already over-appropriated, that's more than would be available and far more than would be environmentally sound.
- It's dirty. Reprocessing involves using acid to extract plutonium and recover unused uranium from irradiated uranium fuel, which results in liquid wastes teeming with radioactive and chemical poisons. The Hanford Nuclear Reservation in Washington, one of the few places in the U.S. where reprocessing for nuclear weapons production has occurred, is an environmental disaster area where \$50 billion in cleanup work has been done and more than \$100 billion more is needed to deal with millions of gallons of liquid waste stored in underground tanks.

So while the basic idea behind reprocessing may sound like sort of a nuclear version of recycling aluminium cans or plastic bottles, it's actually not environmentally friendly and is prohibitively costly.

It would be terrific if that weren't the case. As proponents point out, building a reprocessing plant would create jobs and provide a badly needed boost for the economy of the rural area around Yucca Mountain.

But it's a dangerous idea, not only from a health and environmental standpoint but from a political one, as well.

Yucca Mountain proponents in other states would love to see a crack in Nevada's longstanding official opposition to the repository. If they sense that the reprocessing concept has caused Nevadans to warm to the idea of bringing the nation's waste to the state, you can bet they'll exploit it.

That's especially true given President Donald Trump's support of the project, for which he placed \$120 million in funding to restart the licensing process in his budget. Congress rebuffed him by not including the funding in this year's omnibus spending bill, but there's been no indication that Trump will stop pressing.

It's important for Nevadans to remain galvanized in their opposition to Yucca Mountain. Regardless of whether the site is used for storage or reprocessing, bringing the nation's 77,000 tons of highly radioactive nuclear waste to a site just 90 miles northwest of Las Vegas would be a disaster waiting to happen.

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