

# Roth: Nuclear Options

Nuclear energy has had a lot of challenges to its greater deployment in America. Decades of regulatory uncertainty, uncompetitive economics compared with other forms of American energy and even politics.

But after lots of political posturing from two branches of government, the executive and legislative branches, the third branch has now weighed in and may provide some much-needed clarity, and possibly some momentum.

Here's the back story.

When Allison Macfarlane became the chairwoman of the Nuclear Regulatory Commission in July 2012, she told lawmakers that she believed that the United States could create a permanent repository for nuclear waste, eventually. However, previous to her comments, in February of 2010, Energy Secretary Steven Chu withdrew the license to construct Yucca Mountain, "with prejudice."

Yucca Mountain in Nevada, pursuant to the Nuclear Waste Policy Act, was ultimately identified by Congress as the single site in the United States fit for permanent disposal of high-level nuclear waste. And in 2008, the Bush administration submitted to the Department of Energy a license application to construct a high-level waste repository there.

High-level radioactive nuclear waste is spent fuel that operated a nuclear reactor for at least two years, but no longer has the intensity needed to fuel a reactor. What gets lost in the politics surrounding nuclear disposal are very real policy considerations and scientific evaluations that can be troublesome. Spent fuel is highly radioactive and incredibly hot – and it just does not disappear.

Some spent fuel can be stored on site, at the nuclear power

plant by being placed into water for three years, the time needed to cool the fuel and diminish its radioactive capacity. Studies do show, however, that water pool storage space is quickly running out at more than half of America's nuclear power plants. Thus, the idea of storing fuel deep underground at Yucca Mountain does have some logic to it: uranium is from underground. Additionally, there are national security considerations with storing nuclear waste and the deeper underground it is the less likely it is to pose a terrorist threat.

But, in 2008, then Senator Obama pledged on the campaign trail to stop an underground storage facility from being a reality. Additionally, virtually every elected official in the State of Nevada, opposes the development, including Senate Majority Leader Harry Reid. And, making good on that campaign promise, President Obama defunded the project.

However, this week, an appeals court tossed out the president's decision as a violation of the Nuclear Waste Policy Act, which requires that a single storage site be established. In the United States today, there is an estimated 75,000 metric tons of nuclear waste – a number that is quickly growing.

This decision might jump-start the debate of Yucca all over again. But, it doesn't have to be all bad because it hopefully won't stall the development of new technologies that make reprocessing nuclear fuel a viable alternative. Additionally, scientists are exploring ways to isolate radioactive isotopes for advances in medicine and science. Either way, nuclear is here to stay. We just don't yet know where "here" is.