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WASHINGTON -- It is among the nastiest substances on earth: more than 14,000 tons of highly radioactive waste left over from the building of the nation's nuclear-weapons arsenal.

As the Obama administration and Senate leaders move to scuttle a proposed repository for the waste in Nevada, the Hanford nuclear reservation in Washington state, along with federal facilities in Idaho and South Carolina, could become the de facto dump sites for years to come.

After spending \$10 billion to \$12 billion over the past 25 years studying a nuclear waste dump at Yucca Mountain, President Barack Obama is fulfilling a campaign promise to kill it as a site for the repository. Senate Majority Leader Harry Reid of Nevada also stands to benefit, as he faces re-election next year and Nevada residents adamantly oppose the project.

But local leaders and lawmakers from the sites where the waste is now stored are increasingly concerned that the Energy Department will leave the material in place, even though that might violate legally binding cleanup agreements.

There's no backup plan for dealing with the waste. A promised commission to study the issue has yet to be appointed.

"We don't want to become a long-term repository without even having a discussion," said Gary Petersen of the Tri-City Industrial Development Council, near Hanford, Wash. "All of this waste is supposed to be going to Yucca. Without Yucca, everyone in the weapons complex has a problem."

Jared Fuhriman, mayor of Idaho Falls, the largest city near the Idaho National Laboratory, agreed.

"We are all concerned," Fuhriman said. "Where are we going to store the waste we have?" Yucca was scheduled to open sometime after 2020. If the project is closed, a search for a new site for a national repository probably would start with the 31 states on the original list of potential locations. In addition to Hanford and the Idaho National Laboratory, the states with possible sites include Texas, Georgia, North Carolina, South Carolina, Mississippi and Pennsylvania.

Scrapping Yucca Mountain also could have national security ramifications. The Navy would have no place to permanently store the used reactor fuel that has powered its aircraft carriers and submarines. "There is a national security dimension to the problem, as an eventual disposal site is absolutely critical to the handling of spent fuel from Defense Department weapons," said Rep. Norm Dicks, D-Wash., a senior member of the House Appropriations Committee whose district includes the Puget Sound Naval Shipyard, which potentially could become a temporary storage site.

The Energy Department is fully aware of how thorny an issue Yucca has become.

In a report late last year to Congress, the department warned that by not providing adequate and timely storage for the defense nuclear waste, it would be "unable to honor" its commitments to the states where the waste is currently stored, including Washington, Idaho and South Carolina.

In a letter this year to Energy Secretary Steven Chu, 25 House members issued a similar warning.

"Without a viable repository program to provide a reliable means of disposition, [the Energy Department's] spent fuel and high-level waste will become stranded, and the sites themselves will become de facto repositories," said the letter, signed by House members from Washington, Idaho, South Carolina and other states. Yucca Mountain is in the desert, 90 miles northwest of Las Vegas. A brothel, 15 miles away, may be the closest commercial structure.

The plan is to dig deep tunnels underground where the waste could be stored for 10,000 years as it decays. The Bush administration applied for a Nuclear Regulatory Commission license to operate the site.

The decision to place the repository in Nevada was as much a political decision as a scientific one. In 1987, the hunt for a site had been narrowed to three locations: Yucca, which is on the edge of the Nevada Test Site, where nuclear weapons had been tested; Hanford, which started producing plutonium for nuclear weapons during World War II; and Deaf Smith County, in the Texas Panhandle.

Congress picked Yucca Mountain, and it was a matter of political clout. At the time, the House speaker was Rep. Jim Wright of Texas, and the House majority leader was Rep. Tom Foley of Washington. Nevada was represented by a senator who suggested using a rocket ship to shoot the waste into the sun. It was referred to as the "Screw Nevada Bill."

The immediate concern was the 63,000 tons of used radioactive fuel from the nation's 104 operating nuclear power plants. The used fuel is now stored at each plant, either underwater or in dry storage. But safety and security concerns about that approach persist. Yucca also was supposed to hold the waste from the production of nuclear weapons dating back to the World War II-era Manhattan Project. The waste, which includes used nuclear fuel from reactors that produced plutonium, is stored at 16 federal sites in 13 states, though most of it is at Hanford, the Idaho National Laboratory and the Savannah River Site in South Carolina.

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