

Congress' Options on Civil Nuclear Waste Disposal

The disposal of commercial spent nuclear fuel is an environmental and economic responsibility for the United States government. Successive administrations have failed to find a solution since the nuclear chain-reaction was [envisioned](#) for civilian energy generation in 1946. Through the Nuclear Waste Policy Act of 1982 (NWPA), Congress assigned the management and disposal of spent nuclear fuel to the Department of Energy (DOE) and set a deadline of January 1998 to begin disposal of spent nuclear fuel. The NWPA also established the Nuclear Waste Fund, which is predominantly dedicated to the development of permanent geologic repositories. Under the NWPA, the DOE is responsible for choosing locations for permanent geologic repositories.

The deadline has been missed in part because communities have [expressed](#) grave concerns about hosting a nuclear waste repository. Currently, spent nuclear fuel is either stored on-site at 75 nuclear power plants across 33 states, or Yucca Mountain in Nevada, the sole permanent geologic repository. At the end of 2019, there were [86,000 metric tons](#) of nuclear spent fuel compared to Yucca Mountain's capacity limit of [70,000 metric tons](#). Over the next 10 years, [2,000 metric tons](#) of commercial spent nuclear fuel will accumulate annually, with an estimated total of [140,179 metric tons](#) over the lifetime of existing nuclear reactors.

Consequences of the current situation

Citizens of Nevada oppose Yucca Mountain's status as the sole repository. Nevada's members of Congress are [concerned](#) about the possibility that waste stored under Yucca Mountain could reach water supplies in case of earthquakes or volcanic eruption. Native American tribes, particularly Shoshone and Paiute, [claim](#) Yucca Mountain is a product of environmental racism against indigenous communities.

Since the DOE is responsible for finding off-site storage locations for spent nuclear fuel, the federal government is liable for costs incurred by owners of commercial nuclear reactors who must pay for on-site storage facilities and canisters. According to the DOE's Fiscal Year 2020 Agency Financial Report, the federal government has paid around [\\$9 billion](#) in damages as of September 2020. The projected damages related to nuclear spent fuel storage is [\\$30.6 billion](#).

What are the potential solutions for Congress?

The Government Accountability Office has three recommendations:

1. Amend the NWPA so the DOE can implement a consent-based process for establishing interim and permanent storage facilities. The DOE will use incentives to encourage communities to volunteer as hosts for storage facilities. By only establishing storage facilities in areas with supportive local communities, the DOE will strengthen public trust.
2. Restructure the Nuclear Waste Fund to ensure reliable and sufficient funding. In 1987, the Office of Management and Budget eliminated separate budget planning for the Nuclear Waste Fund, pitting the fund against other DOE programs for resources. Consequently, from 1983 through 2010, Congress' annual appropriations to the DOE for spent nuclear fuel management were [\\$90 million](#) less than the original budget request.
3. Pass a law affording the DOE bureaus responsible for nuclear waste increased autonomy from political changes. Historically, changing presidential administrations and Congress have influenced the DOE's leadership and programmatic objectives, hindering effective long-term planning.