

****FINAL****
MEMORANDUM

To: President Joseph R. Biden, Jr.
Jennifer M. Granholm, Secretary of Energy
Deb Haaland, Secretary of the Interior
Michael S. Regan, Administrator of the Environmental Protection Agency
Honorable David A. Wright, Commissioner of the Nuclear Regulatory Commission

From: Denise Valentin

Date: August 11, 2022

Re: Interim Disposal and Storage of Nuclear Waste

There are challenges facing the federal government about the storage and disposal of nuclear waste and spent nuclear fuel. According to the Nuclear Waste Policy Act of 1982, the federal government is responsible to find a suitable site and build a permanent, underground facility for the disposal and storage of high-level nuclear waste and spent nuclear fuel from nuclear power plants in the United States. As of today, the federal government has not done so, and the last try to open a nuclear waste storage facility on public lands in Yucca Mountain, Nevada was vetoed by the State of Nevada.

The federal government is still allowing nuclear plants to store their high-level nuclear waste and spent nuclear fuel at nuclear plants throughout the nation. The NWPA of 1982 stipulates that permanent storage facilities be built; one in the western portion and one in the eastern portion of the United States. On July 22, 2022, the National Regulatory Commission (NRC) filed its EIS approving a second interim storage facility in Lea County, New Mexico (Fed. Reg. 2022). This interim storage facility would allow for the transportation to and storage of high-level nuclear waste and spent nuclear fuel from nuclear plants nationwide. Note that the second interim nuclear waste facility is not permanent nor centralized. The building of interim storage facilities does not follow the policy of the NWPA.

BACKGROUND

The Nuclear Waste Policy Act (NWPA) of 1982 created procedures to evaluate and determine an appropriate site for all nuclear waste. Under the NWPA:

1. The Department of Energy (DOE) is responsible for building and operating a nuclear waste storage facility for spent nuclear rods, fuel, and other wastes.

2. The Environmental Protection Agency (EPA) is responsible for the operational standards of protecting the general environment from releases.
3. The Nuclear Regulatory Commission (NRC) oversees the DOE's operation of nuclear waste storage facilities (Holt 2021).

There are currently 81 Independent Spent Fuel Storage Installations (ISFSI) in the United States that store their nuclear waste and spent fuel rods in spent fuel pools or in dry cask storage, as shown in Fig. 1. From the map you can see that there are many more nuclear power plants located near highly populated areas in the eastern portion of the United States than the western portion. Only 10 states do not have a storage facility. These storage facilities are owned by private industry, and are paid by the federal government to store this radioactive waste and fuel.

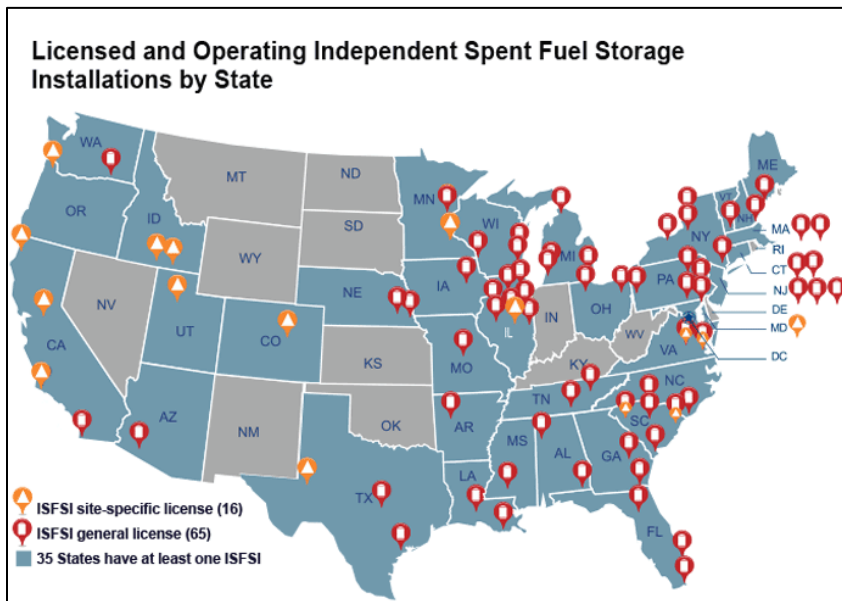


Fig 1. Fuel Storage Facilities in the United States
Source: U.S. NRC October 2021

The American taxpayers have paid over \$40 billion dollars into the Nuclear Waste Fund as of 2014. Unfortunately, this money has been moved and used in other agencies, so new appropriation would need to be approved by Congress for nuclear waste and spent fuel rod storage facilities. The federal government has also paid billions of dollars in damages to nuclear plant owners because of the failure to dispose of the nuclear waste at their commercial nuclear plants (GAO 2022).

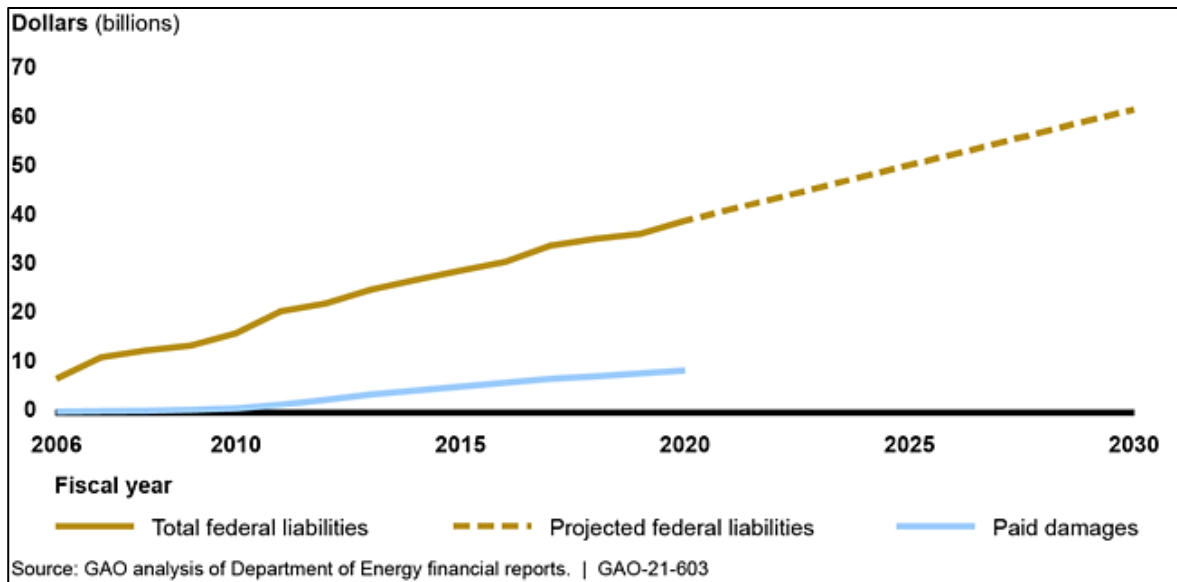


Fig. 3 Department of Energy Total Estimated Costs and Remaining Liabilities for Storing Commercial Spent Nuclear Fuel in Billions of Dollars.

STAKEHOLDERS

The NRC has prepared the Final EIS on the New Mexico site and approved the license for the Holtec International Centralized Interim Storage Facility (CIFS) in New Mexico. The NRC believe that the current storage technology would be adequate for 100 years, up to 2086 (Clifford 2019).

Stephen Kraft, from the Used Fuel Management at the Nuclear Energy Institute, wants to see spent nuclear fuel from decommissioned reactors sent to an interim storage facility due in part because time is of the essence. Storing HLW nuclear waste in the spent nuclear pools and in casks at the decommissioned reactors is unacceptable (Wayman 2012).

Holtec International, the storage facility builder, and the Eddy-Lea Energy Alliance Partnership (ELEA), the owner of the land, is for the project saying the area is remote as no one lives within 35 miles of the CIFS project. Holtec has also stated that this facility will not impact potash mining and oil and gas operations and will not harm local ranchers and farmers (Duerrmeyer 2022). Holtec and the NRC have both stated this facility was temporary as it only had a 40-year license (Duerrmeyer 2022).

Governor Michelle Lujan Grisham (New Mexico) states that storing nuclear waste poses a public health risk and that she is against the interim nuclear waste facility in Lea County, New Mexico. She also states that there is no nuclear plant in her state so New Mexico and its inhabitants should not be responsible for such a risky facility.

Senator Jeff Steinborn (New Mexico) introduced a bill to stop the project by prohibiting the state to issue permits relating to the operations of the facility. That bill is on hold in the Senate Judiciary Committee (Duerrmeyer 2022)

U.S. Senators Heinrich (NM), U.S. Senator Cruz (TX), and numerous oil companies are against the project as the site is in a highly productive oil field. The Permian Basin Coalition includes Shell Oil Company, the Texas Oil and Gas Association, and other local Texas governments (AP 2022).

The National Association of Regulatory Utility Commissioners (NARUC) believes that the dismantling of the centralized, permanent nuclear waste facility program was done illegally. They want the government to follow through on the original plan of a centralized, permanent nuclear waste facility instead of the current plan of storing nuclear waste at nuclear plants nationwide (NARUC 2015).

The Southwest Alliance to Save our Future (SATSOF) states that HLW is dangerous as it emits invisible gamma radiation through its casks. They also believe that the transportation of all the waste from around the country through New Mexico to the interim facility is dangerous. There is a large Hispanic population in New Mexico, and SATSOF feels that building this facility would be both a burden and an environmental injustice (SATSOF 2017).

ALTERNATIVES

I am providing a few alternatives for you to consider to safeguard the future of the planet.

- 1. Obtain new authorization and appropriation from Congress to find the necessary site for a centralized, permanent high-level nuclear waste (HLW) processing and storage facility. Have this facility process and store both hard waste and liquid waste deep underground.**

Currently, HLW is being stored at decommissioned and current nuclear plants. The American taxpayers are footing the bill for this storage. They have already put in \$40 billion for a centralized facility; however, that money was spent elsewhere. Even though new funding would need to be approved for this centralized HLW storage facility, continued payments to these nuclear plants would stop once the new facility was opened (Clifford 2019). The public has paid all this money with nothing to show for it.

Having 81 sites with nuclear power waste across the nation and having just one centralized permanent facility are both very risky due to both a possible nuclear emergency or terrorist act. There is an ongoing battle between Congress and the DOE. Congress wants the DOE to store spent nuclear fuel at an interim storage facility. DOE states that they have no legal authority to do so (Clifford 2019).

Per the World Nuclear Association, the safe storage and disposal of HLW is possible through deep geological disposal through both injection and in tunnels miles underground. Both

processes are being used currently for defense-related waste and in other countries. Natural barriers such as rock, salt, or clay can isolate the nuclear waste and keep it from reaching groundwater. This process is preferred by many countries including Canada, Russia, the UK, and many more (WNA 2021).

2. Reprocess spent fuel, recover the plutonium, and reuse it in the nuclear reactors. The nuclear waste that cannot be reprocessed is sent to a single facility with deep underground storage.

According to the World Nuclear Association (WNA 2020), HLW and spent fuel rod nuclear waste containing uranium are already being reprocessed into plutonium. This process provides reusable fuel that can be used by nuclear plants. Using recycled fuel will lower inventories at nuclear plants and reduce the amount of storage needed, whether interim or permanent (Billes-Garabedian et al. 2006).

This is not a cheap process by any means, but the federal government can save money by not having to build and operate heavy machinery to drill 400-500 meters (400 meters = ¼ mile) into bedrock at a permanent storage facility. This process would also generate reusable fuel, saving the money spent on plutonium. According to the (WNA), this could save around \$31 million per nuclear reactor. (WNA 2020).

The American public would not have to pay for processing or storage of HLW and spent fuel rod nuclear waste for the private nuclear reactor companies. The private nuclear reactor companies would pay the company recycling the HLW and spent fuel rod directly.

In choosing this option, the federal government would have to amend the NWPA and create a new entity to oversee the work (WNA 2022). Transportation could be a risk, but currently the dry casks that are being used have not released radioactive materials (Clifford 2019) and they have been used since 1986.

3. Do Nothing (Status quo)

As of right now, choosing a site for a centralized, permanent nuclear waste to process and store HLW is still on hold. The federal government can continue to keep stored nuclear waste at decommissioned and current nuclear plants. Interim storage and processing facilities can continue to be built in states that do not want them.

This option is what was going on before the two facilities (Texas and New Mexico) were approved and licensed. Continue to keep these 81 ISFSI nuclear waste facilities storing their nuclear waste in cooling pools. Continue to store nuclear waste in nuclear plants located near cities.

RECOMMENDATION

Public policy is written on the premise that storage of nuclear waste is safe (Holt 2021). As our country continues to use nuclear plants and generate nuclear waste, a decision must be made now about how to process and store it. Why not recycle what we can, and store the remainder deep underground?

Recycling and deep underground storage is the best combination. Recycling keeps that radioactive material from having to go into storage. Recycling also saves money as it provides uranium for future use by the nuclear reactors. Decommissioned nuclear plants can have their radioactive material transported to either be recycled or stored in a deep underground facility. The continuance of stockpiling dangerous radioactive waste is both illegal and irresponsible. Find a suitable site and build the centralized, permanent site and transport all radioactive materials from the interim storage facilities and the nuclear plants to either the recycling facility or the storage facility.

More nuclear plants may need to be built in the near future because of climate change. When the water dries up in our rivers, the hydroelectric dams will no longer work. The use of solar and wind energy will help, but it will not provide the energy needed as our population continues to grow exponentially.

Please make the decision to do something now before another nuclear disaster happens in our country. However, you must gain the public's trust and approval. Provide the public with the necessary knowledge to make an informed decision. Allow the public to comment on all updated or new plans that are written and put before Congress. Collaboration and consensus are the best way to move forward on this issue.

Thank you for your time and consideration.

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