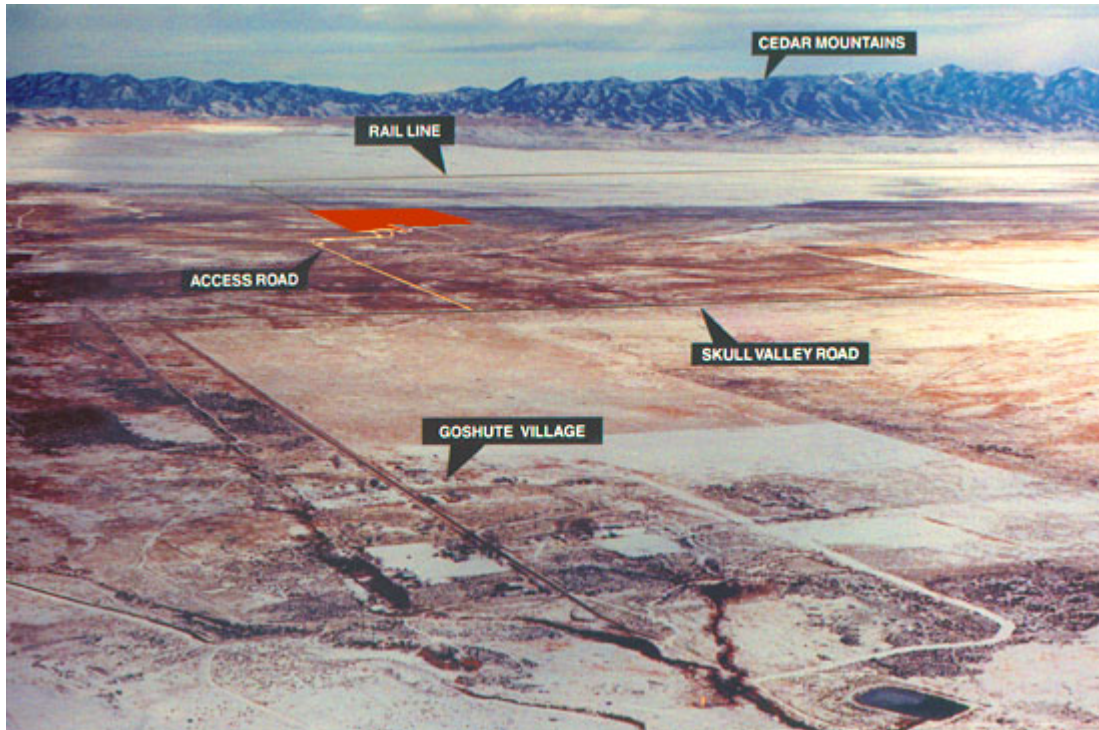


Utah Nuclear Waste Summary



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for



Background

The Nuclear Waste Policy Act was established by Congress in 1982 to solve the problem of nuclear waste and made the U.S. Department of Energy (DOE) responsible to find, build and operate an underground disposal facility, called a “geologic repository” by January 31, 1998. Between 1983 and 1985, the DOE selected a variety of locations for the repository and reported on them to the president. The president approved 3 sites for intensive studies, one of which was Yucca Mountain, Nevada.

In 1987, Congress made an amendment to the Nuclear Policy Waste Act and directed the U.S. Department of Energy to study only the Yucca Mountain site. By 2002, the US Senate approved the development of a geologic repository in Yucca Mountain, and President Bush signed the bill allowing the DOE to take the next step in establishing a safe repository for nuclear waste.

However, government officials soon recognized that they would not meet the 1998 storage deadline passed by Congress. In the early 1990s, the DOE sought applications from communities and Indian tribes for grants to study the possibility of temporarily accepting nuclear waste until a permanent site could be built. The Skull Valley Band of Goshute Indians in Utah responded to the request and accepted two grants totaling \$300,000 to conduct studies on storing nuclear waste on their tribal lands. From 1992 until 1995, the leaders of the Goshute Band carefully accumulated data and traveled to various parts of the United States and the world to examine all aspects of spent nuclear fuel storage.

In 1997 Private Fuel Storage (PFS) negotiated a deal with the Skull Valley Goshutes and submitted an application to the Nuclear Regulatory Commission for a license to store spent fuel on the Skull Valley reservation about 50 miles from Salt Lake City. Members of the PFS consortium and other utility companies are running out of on-site storage space and need a temporary place to store spent fuel because the Yucca Mountain long-term storage site has not yet been approved. PFS hopes that Utah’s central storage facility will allow for continued operation of nuclear plants, plant improvements and license extension, and the ability to decommission shut-down plants once they have moved spent fuel to the storage facility.

Players

Skull Valley Band of Goshute Indians: The Goshute Tribe has inhabited the Southwestern part of the United States for thousands of years. At their peak the Goshutes numbered about 20,000 but now there are less than 500 members, of which 124 belong to the Skull Valley Band. Today, the Skull Valley Goshute Reservation is comprised of approximately 18,000 acres. Skull Valley’s is officially welcoming the waste because there will be approximately 60 local jobs created by this project to provide employment for all of the tribal members who wish to move back to the Goshute Reservation and find work. The revenue will also be sufficient to add land to the Reservation and to build new housing and construct a needed reservoir to provide irrigation water year round. However, one faction within the Tribe that is against the waste being stored in the Reservation.

Private Fuel Storage (PFS): Private Fuel Storage, LLC (PFS) is a group of eight electric utility companies that have partnered with the Skull Valley Band of Goshute Indians to license a temporary facility to store spent nuclear fuel rods from commercial power plants on the Indian

Tribe's reservation in Skull Valley, Utah. PFS electric utility companies include Xcel Energy, Genoa Fuel Tech, American Electric Power, Southern California Edison, Southern Nuclear Company, First Energy, Entergy, and Florida Power and Light. PFS has been working to license a nuclear waste storage facility on the Goshute Reservation to provide a centralized storage option for nuclear power plants until the federal government has a permanent repository ready. As of this publication, concerns have been raised about the continued viability of PFS. As the *Salt Lake Tribune* reported in its December 9, 2005 edition, Southern Company is completely withdrawing from PFS. Additionally, the largest partner, Xcel Energy has determined it no longer needs the Skull Valley facility and will not provide further funding to PFS.

Nuclear Regulatory Commission (NRC): The NRC is an independent federal agency responsible for licensing and regulating the receipt and possession of high-level waste, including spent fuel as well as reprocessing waste at privately owned facilities, and at certain facilities of the DOE. The NRC has signaled its willingness to grant the license for the PFS facility in its recent September 9, 2005 ruling to authorize a license for the construction of the facility. The state of Utah is challenging the NRC ruling to grant the license pending a petition of review to the U.S. Court of Appeals in the D.C. Circuit.

Bureau of Land Management (BLM) of Utah: The Bureau of Land Management (BLM) is an agency of the U.S. Department of the Interior that administers 261 million surface acres of America's public lands and works to sustain the health, diversity, and productivity of public lands. Glenn A. Carpenter, manager of the BLM's Salt Lake Office has said that he cannot sign an agreement allowing PFS to build a railroad spur to its proposed repository site in Skull Valley until a moratorium on land-use planning is lifted by Congress or a resource study is completed by the Air Force.

Department of Energy (DOE): The Department of Energy works to protect the environment by providing for the permanent disposal of the Nation's high-level radioactive waste. Samuel W. Bodman, secretary of the U.S. Department of Energy stated in a letter to Senator Hatch that if the DOE's Yucca Mountain repository is built it will reduce, if not eliminate, the need for high-level waste to go to the PFS facility in Utah. He also stated that the DOE cannot provide funding or financial assistance to the PFS facility because it is not part of the department's overall strategy for nuclear waste storage.

Utah Congressional Delegation: As a group, the Utah Congressional Delegation is opposed to the nuclear storage site. Senators Hatch and Bennett have vehemently fought the facility and Orrin Hatch has publicly said that he will "pull out every stop in the book to stop the PFS plan." They have recently enlisted the support of Senator Harry Reid from Nevada to create a wilderness area which will significantly disrupt plans for a rail link to transport the waste.

Air Force: In 2000, Representative Hansen inserted a line item in an armed services appropriations bill requiring that the Air Force conduct a study regarding the likelihood of a plane crash into the nuclear facility. More than 7,000 low flying F-16 airplanes fly across the proposed nuclear site year to the Utah Testing and Training (UTT) and there is a chance that one of these airplanes could crash into the facility or that the construction and operation of the rail spur could diminish the utility of the UTT ground to the Air Force's operations. The

Department of Energy cannot issue a rite for the proposed rail spur until the Air Force completes its study. On December 6, 2005 Air Force Secretary Michael Wynne signed a letter expressing support for Utah's push to create a wilderness area in the Cedar Mountains and stating that the creation of the wilderness area would not impair the Air Force's ability to use the UTT range.

The Cedar Mountain Wilderness Proposal: Congressman Bishop (R, Utah) and other representatives from the State of Utah are working with Congress to create legislation to block the proposed rail spur to the PFS storage facility. This legislation will fulfill several purposes. First, because the military uses tracking stations along Cedar Mountain to lead planes to the Testing and Training ground, the legislation states that the Air Force will still be able to use the tracking stations even if the land is designated a wilderness area. Second, the legislation blocks the alignment for the dedicated rail spur by stating that the Secretary of the Interior cannot create a rite-of-way through the protected lands. Finally, section 28.15 of the Department of Defense's National Defense Authorization Act states that the Secretary of the Interior cannot proceed in granting a rite-of-way if the storage plan will affect wilderness areas.

Nuclear Waste

In general, radioactive waste classes are based on the origin of the waste, not the physical and chemical properties of the waste. A common factor for all categories of nuclear waste is the presence of at least some amount of long-lived radionuclides.

Types

The Nuclear Regulatory Commission (NRC) separates wastes into two broad classifications: ***high-level*** or ***low-level*** waste.

High-level radioactive waste results primarily from the fuel used by reactors to produce electricity. High-level radioactive waste is uranium fuel that has been used in a nuclear power reactor and is "spent" or no longer efficient in generating power to the reactor to produce electricity. Spent fuel is thermally hot as well as highly radioactive and requires remote handling and shielding to prevent radiation poisoning.

Low-level radioactive waste is radioactive waste that is not classified as high-level, spent fuel. It has four subcategories:

Class A: The least radioactive of the four low-level waste classes, primarily contaminated with "short-lived" radionuclides. Currently, Envirocare of Utah stores class A waste in Tooele County.

Class B: May be contaminated with a greater amount of "short-lived" radionuclides than class A.

Class C: May be contaminated with greater amounts of long lived and short-lived radionuclides than class A or B.

GTCC: Most radioactive of the low-level class

Private Fuel Storage (PFS) is proposing to store **high-level waste** at the Goshute Indian reservation facility. Existing high-level wastes from reprocessing are presently stored at West Valley, New York; Hanford, Washington; Idaho Falls, Idaho; and Savannah River, South Carolina.

Storage

Spent fuel is first removed from a reactor and then placed in a special pool of water in a steel-lined concrete basin. After the spent fuel has cooled in the pool for approximately five years, the fuel canister is removed the water is drained and the canister is sealed with a 10-inch thick steel top. The canister is then placed into a thick steel transportation cask for shipping to the storage site. At the storage site, the inner canister is lifted out of the transportation cask and placed into a concrete and steel storage cask. The loaded storage cask, weighing about 180 tons, is then either placed upright on concrete pads, or stored horizontally in metal canisters in concrete bunkers. PFS proposes to build 4,000 above-ground storage casks on thick reinforced concrete pads with each cask containing 10 metric tons of spent fuel.



Storage casks will look similar to these located at the Prairie Island Nuclear Power Plant operated by Northern States Power.

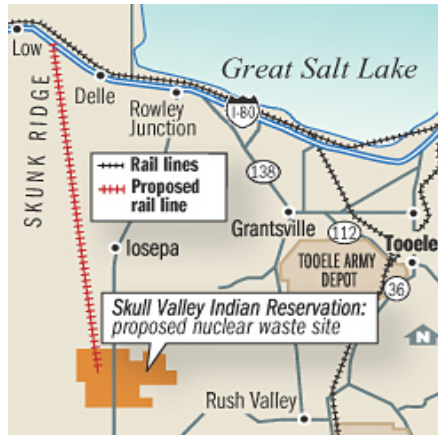
Other options for the permanent disposal of nuclear waste include the mixed oxide (MOX) fuel burning method, the vitrification method, and the subductive waste disposal method.

The ***MOX fuel burning*** option mixes plutonium with uranium and produces a slightly different fuel than is now used for civilian reactors. MOX burns up the plutonium by nuclear fission (the splitting of atomic nuclei which releases large amounts of energy) and allows more of the plutonium to be used as an energy source. However, the end product still must be disposed of and stored like other nuclear waste.

The ***vitrification method*** involves mixing of weapons-grade plutonium with radioactive waste from civilian reactors and placing this mixture in borosilicate glass logs. The logs are then buried in a deep borehole at least four kilometers deep. Using this method, the plutonium could be suitably encased and isolated to the extent that its decay process may occur without polluting the environment. However, this method has not been tested and it is unclear that the encasement will remain leak proof over time.

The ***subductive waste disposal method*** is the most viable means of disposing of radioactive waste. Subduction refers to a process in which one tectonic plate slides beneath another while being reabsorbed into the Earth's mantle. The subductive waste disposal method involves the formation of a radioactive waste repository in a subducting plate where the waste will be absorbed along with the plate and dispersed through the mantle. The most accessible site is on the ocean floor at a point above where subducting plates meet and, once filled, the repositories would be virtually inaccessible. This method would prevent radioactive waste from mixing with the water table, provide inaccessibility to eliminated weapons material, remove radioactive waste completely from its threatening position, and be safe for marine life.

Shipping



The NRC requires that companies ship radioactive materials in accordance with the hazardous materials transportation safety regulations of the Department of Transportation (DOT). The DOT regulations prescribe limits on the maximum amounts of radioactivity that can be transported in each shipment to prevent substantial health risks. PFS proposes to construct a 32-mile dedicated rail line, from the Union Pacific rail line to the storage site for the delivery of spent fuel. PFS is also working closely with the railroad industry to design and test a new rail car with advanced safety features to carry the heavy transportation casks.

Timeline and Checklist

PFS has already taken several steps to license the nuclear storage facility on the Goshute Indian reservation. The table below highlights the major steps taken in the licensing process.

PFS Licensing Timeline			
Licensing Step	Status	Public Comment	6/00 The ASLB invited the public to make "limited appearance statements" at meetings held in Salt Lake City and Tooele.
Application to the NRC	6/97 PFS filed its application	Final Environmental Impact Statement	1/02 The NRC issued a final EIS, a comprehensive environmental review that also addresses issues raised by the interveners and the public.
NRC Staff review	6/97 NRC staff begins review of safety and environmental aspects of application.	ASLB Decisions	2003 and continuing The ASLB began ruling on issues considered at hearings, starting in March 2003. On the risks of military aircraft crashes, the Board ruled that the risk of such an event is greater than one in a million and offered PFS the opportunity to return with additional data. PFS received favorable rulings on the issues of seismic hazards, financial qualifications, and wilderness issues.
Notice in the Federal Register	7/97 NRC placed notice inviting individuals or groups affected by the project to intervene.	NRC Decision	9/05 The NRC authorized the issuance of the license for the facility. Commissioners unanimously voted to deny the state of Utah's petition for review of Commission and (ASLB) rulings. In addition, the Commissioners authorized the NRC Staff to issue the license authorizing the construction and operation of the PFS facility by a 3 to 1 vote.
Atomic Safety and Licensing Board (ASLB)	9/97 NRC named judges to the Atomic Safety and Licensing Board that will decide the PFS case.		
Safety Evaluation Report	12/99 and 9/00 NRC issued a preliminary report (12/99) evaluating PFS compliance with most of the safety-related regulations, and a final report (9/00) evaluating the remaining safety requirements.		
Evidentiary Hearings	6/00 The ASLB held the first of two sets of hearings at which PFS and the interveners presented evidence supporting their positions on the issues. The second set of hearings was held in summer 2002.		

At this point opponents of the project are fighting the proposal on every front.

Legislative: Rep. Rob Bishop authored a provision of the Defense Authorization Bill to create a wilderness area to protect the Utah Test and Training range and on January 6, 2006, President Bush signed the bill and sealed the Cedar Mountain Wilderness Area into law. Nearly 100,000 acres of land will become federal wilderness area, giving it protection from motorized vehicles, roads, mining and other intrusions. The land includes a portion of BLM territory that Private

Fuel Storage wants to use to build a rail spur to the proposed nuclear-waste site; however PFS can and will still transport nuclear waste by truck. In December, Congress approved the new wilderness area in the Defense Authorization Bill after weeks of negotiations by the Utah congressional delegation to keep it in the bill. The Utah Congressional delegation, with newfound support from Nev. Senator Harry Reid is also supporting efforts to build intermediate storage facilities where nuclear plants are already located. In addition, four of the original eight investors that make up nearly 68 percent of the PFS consortium (Florida Power and Light, Southern Company, Entergy, and Xcel Energy) have pulled out their financial backing from the project.

Executive: The Department of the Interior must secure two layers of administrative approval before PFS can continue with the nuclear storage facility: 1- the BLM must issue the rite-of-way for the rail spur to pass through BLM lands to the reservation. A recent study revealed that eight sites along the proposed PFS rail line have historic properties and the BLM has yet to sign an agreement outlining how PFS would protect these historic places. 2- The Bureau of Indian affairs has to approve of the Goshute's lease of their tribal lands to PFS, but it cannot give final approval to PFS's lease without the BLM's rite-of-way approval.

Judicial: The State of Utah has filed two lawsuits to challenge the storage facility. 1-The state has filed a petition of review with the US court of appeals to the DC circuit to challenge the NRC's ruling as "arbitrary and capricious." 2- The state has filed a petition for certiorari with the Supreme Court to consider an appeal of a lower court ruling to throw out several state laws concerning Private Fuel Storage, but on Monday, December 5, 2005 the Supreme Court denied Utah's request to hear its case.