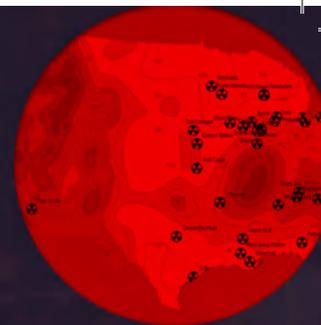


Spent Nuclear Fuel Rods and Storage Pools: A Deadly and Unnecessary Risk in the United States



Based on an Institute for Policy Studies report by Robert Alvarez entitled
“Spent Nuclear Fuel Pools in the U.S.: Reducing the Deadly Risks of Storage.”

REGIONAL RISKS

New York. If a spent fuel fire were to happen at one of the two Indian Point nuclear reactors located 25 miles from New York City, it could result in as many as 5,600 cancer deaths and \$461 billion in damages. Indian Point spent fuel storage has about three times more radioactivity than the combined total in the spent fuel pools at the four troubled Fukushima reactors.

Los Angeles. The spent fuel at Diablo Canyon nuclear reactors have nearly 2.7 times more radioactivity than the combined total in the spent fuel pools at the four troubled Fukushima reactors.

Miami. Turkey Point reactors 65 miles from Miami have 2.5 times more radioactivity than the combined total in the spent fuel pools at the four troubled Fukushima reactors.

Dallas. The Comanche Peak nuclear station 60 miles southwest of Dallas has spent fuel that contains about 2.3 times more radioactivity than the combined total in the spent fuel pools at the four troubled Fukushima reactors.

Atlanta. The Vogtle nuclear reactors near Augusta are 147 miles northeast of Atlanta. These reactors have generated 2.5 times more radioactivity than the combined total in the spent fuel pools at the four troubled Fukushima reactors.

FACT SHEET

- ▶ More than 30 million highly radioactive spent nuclear fuel rods are submerged in vulnerable storage pools at reactors all over the United States. These pools at 51 sites contain some of the largest concentrations of radioactivity on the planet. Yet, they are stored under unsafe conditions, vulnerable to attacks and natural disasters.
- ▶ Spent nuclear fuel rods have enough pop to cause a catastrophic radiation fire, a nuclear chain reaction, or explosion. As the Fukushima Dai-ichi tragedy shows, the risk to the public is all too real.
- ▶ Spent nuclear fuel rods are so deadly that a motorcyclist blasting past them at 60 mph at a distance of one foot would be killed from the effects of that fleeting radiation exposure.
- ▶ The metal tubing that holds the spent nuclear fuel is thinner than a credit card. This thin sheath is the only major barrier preventing the escape of radioactive materials. Cracked or damaged metal tubing that was holding deadly nuclear material at the Fukushima Dai-ichi nuclear reactors resulted in the release of an enormous amount of radioactivity, much of which seeped into air, soil, and nearby ocean water.
- ▶ Approximately 75 percent of U.S. spent nuclear fuel rods are kept tightly packed together in storage racks, submerged in pools located at nuclear reactors. These storage facilities resemble large above-ground swimming pools and this practice puts the American public at risk. Spent fuel storage pools are often housed in buildings no more secure than a car dealership. Instead, these fuel rods should be safely stored in dry, hardened, and sealed storage casks.
- ▶ Spent fuel storage pools are vulnerable. Massive land contamination, radiation injuries, and myriad deaths would result from a terrorist attack, earthquake, or even a prolonged electricity blackout — as happened at the Fukushima Dai-ichi reactor site in Japan following an earthquake and tsunami. Pools need electricity to pump water to cool the rods, as well as to maintain a high water level to diffuse the escape of radiation. Despite these dangers, the Nuclear Regulatory Commission (NRC) doesn't require nuclear reactor operators to even have back-up power supplies for these spent-fuel pools to prevent disaster.
- ▶ If the water in a spent nuclear fuel pool drains to six feet above the fuel rods, it would give off life-threatening radiation doses to workers on site. These pools were originally designed to hold less than one fifth of the radioactive material they now contain.
- ▶ If the water were to drain entirely from a spent fuel pool, it could trigger a catastrophic radioactive fire that would spew toxins and render hundreds of thousands of square miles uninhabitable. The devastated area would be larger than the wasteland that resulted from the 1986 Chernobyl nuclear accident.
- ▶ Life-threatening incidents have occurred at multiple U.S. spent fuel storage pools. In Haddam Neck, Connecticut, a pool sprung a leak in August 1984. About 200,000 gallons of water drained in just 20 minutes, according to the NRC.
- ▶ Dry cask storage is a much safer alternative to pools — which were originally designed to hold less than one-fifth of what they now contain. It doesn't rely upon a constant supply of electricity or water, and it also can be stored in separate blast-proof containers, making it less susceptible to terrorist attack or earthquakes.
- ▶ Over the next 10 years, we could remove all spent fuel older than five years for a cost of \$3 billion-\$7 billion. The cost of fixing America's nuclear vulnerabilities may be high, but the price of doing too little is incalculable.

BACKGROUND

Robert Alvarez, an Institute for Policy Studies senior scholar, served as a Senior Policy Advisor to the Secretary of Energy during the Clinton administration.

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