

# What exactly is **SPENT NUCLEAR FUEL?**

**Spent Nuclear Fuel (SNF) is nuclear fuel that has been used in a reactor.**

Today's commercial reactors use low-enriched uranium fuel made up of ceramic pellets stacked in hollow metal rods called fuel rods. Fuel rods are bundled into fuel assemblies and placed in the reactor. When nuclear fuel can no longer efficiently produce heat, it is considered "spent" and must be replaced. SNF remains thermally hot and radioactive, requiring safe cooling and storage to protect operators, the public, and the environment.



**SNF is stored in facilities designed to keep the public safe.**

After it is removed from the reactor, SNF is first stored in wet pools more than 20 feet deep on the reactor site. The water in the pool keeps the SNF cool and blocks radiation. After at least one year, the SNF is removed from the pool and placed in a large concrete or steel dry storage system designed to block radiation and withstand natural disasters.



**SNF is stored at close to 75 sites in more than 30 States.**

Most SNF is stored at the sites of currently operating or previously decommissioned nuclear power plants. To reduce the costs of storing SNF and free up decommissioned nuclear power plant sites for other uses, the U.S. Department of Energy (DOE) is now exploring the possibility of consolidating SNF at one or more Federal storage facilities using a collaborative process. In the long term, DOE plans to construct a deep underground facility to dispose of the fuel.



**How much SNF is there?**

The nuclear power industry produces 2,000 tons of SNF each year. That fuel generates enough energy to power almost every single-family home in the U.S.

The U.S. has about 95,000 metric tons of SNF today and in the future will have up to approximately 180,000 metric tons when current reactors reach the end of their life.



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*Spent Fuel and High-Level Waste Disposition*

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