

5 Fast Facts about Spent Nuclear Fuel

Nuclear energy is one of the largest sources of emissions-free power in the world.

It generates [nearly a fifth of America's electricity](#) and more than half of its clean energy.

During this process, it creates spent or used fuel (sometimes incorrectly referred to as nuclear waste) but it's not the green oozy liquid you might be thinking of [when watching "The Simpsons."](#)

In fact, some in the industry actually consider it a valuable resource.

Say what?

Don't worry, we'll get you up to speed with these 5 fast facts on used fuel that's generated from nuclear power.

1. Commercial used nuclear fuel is a solid

Used fuel refers to the uranium fuel that has been used in a commercial reactor. The fuel is made up of metal fuel rods that contain small ceramic pellets of enriched uranium oxide. The fuel rods are combined into tall assemblies that are then placed into the reactor.

It's a solid when it goes into the reactor and a solid when it comes out.

Sorry "Simpsons."

2. The U.S. generates about 2,000 metric tons of used fuel each year

This number may sound like a lot, but it's actually quite small. In fact, the U.S. has produced roughly 83,000 metrics tons of used fuel since the 1950s—and all of it could fit on a single football field at a depth of less than 10 yards.

3. Used fuel is stored at more than 70 sites in 34 U.S. states

Commercial used fuel rods are [safely and securely stored](#) at 76 reactor or storage sites in 34 states.

The fuel is either enclosed in steel-lined concrete pools of water or in steel and concrete containers, known as dry storage casks.

For the foreseeable future, the fuel can safely stay at these facilities until a permanent disposal solution is determined by the federal government.

4. Used fuel is safely transported across the United States

Over the last 55 years, [more than 2,500 cask shipments](#) of used fuel have been transported across the United States without any radiological releases to the environment or harm to the public.

The fuel is shipped in transportation casks that are designed to withstand more than 99 percent of vehicle accidents, including water immersion, impact, punctures and fires.

5. Used fuel can be recycled

That's right!

Used nuclear fuel can be recycled to make new fuel and byproducts.

More than 90% of its potential energy still remains in the fuel, even after five years of operation in a reactor.

The United States does not currently recycle used nuclear fuel but foreign countries, such as France, do.

There are also some [advanced reactor designs in development](#) that could consume or run on used nuclear fuel in the future.

[Learn more](#) about our work with spent nuclear fuel.