

Nuclear Energy FAQs

Q: How prevalent is nuclear power in Pennsylvania?

A: Pennsylvania is the **second largest nuclear capacity state** in the nation and is home to **nine nuclear reactors at five nuclear power plants** - Beaver Valley Nuclear Power Station in Beaver County, Susquehanna Nuclear Power Station in Luzerne County, Three Mile Island Unit-1 Generating Station in Dauphin County, Peach Bottom Atomic Power Station in York County, and Limerick Generating Station in Montgomery County.

Nuclear power is the **most efficient, zero-carbon generation source** in Pennsylvania.

Q: How does nuclear power benefit me?

A: Pennsylvania's nuclear power plants are responsible for:

- Keeping **electricity prices low** by **saving consumers \$788 million** annually in electricity costs;
- Producing **42% of Pennsylvania's electricity**;
- **Employing 16,000** Pennsylvanians, directly and indirectly;
- Contributing **\$2 billion** annually to Pennsylvania's **gross domestic product**;
- Contributing **\$69 million in net state tax revenues** annually;
- Producing **93% of PA's zero-carbon energy**;
- Avoiding **37 million tons of carbon dioxide (CO₂) emissions** annually; and
- Preventing significant amounts of **emissions of harmful criteria pollutants** (SO₂, NO_x, and PM_{2.5}) annually valued at **\$260 million per year** over the next ten years.

Q: Is nuclear energy safe?

A: Nuclear energy is the only energy source **immune to all extreme weather events** – by design. The safety mechanisms built into these plants are so stringent and secure that they can even withstand a plane flying directly into them. Regardless of the type of weather event – hurricane, flood, earthquake, heat wave, or severe cold – **nuclear units out-perform other generation types** consistently to the benefit of electricity customers.

Historically, **nuclear power has caused few illnesses and even fewer deaths**. Further, studies completed by engineers that played out scenarios for thousands of potential natural disasters and man-made accidents involving nuclear power plants support these historical trends. In fact, according to a database compiled by the [Paul Scherrer Institut](#), from 1970 to 2008 there were 1,686 accidents in the coal industry, 531 in the oil industry, and 186 involving natural gas in which five or more people died. However, during that same time period, there was only one such accident in the nuclear industry – at Chernobyl.

Not only are these plants safe, but they actually *prevent* the release of carbon dioxide and other harmful air pollutants into the atmosphere. Without these nuclear plants, the level of greenhouse gas emissions in Pennsylvania would increase significantly.

In short, many studies indicate that **producing electricity using nuclear power is far less detrimental to human health than producing it using coal, oil, or natural gas**. This outcome is compounded if the predicted impacts of climate change are factored in.

Q: What is nuclear waste?

A: According to the Nuclear Energy Institute (NEI), nuclear waste is fuel that has been used in a reactor once. After the fuel is used to produce electricity – typically for a period of about five years – it is removed and safely stored until a permanent disposal site becomes available.

Additionally, there's not that much of it. In fact, the amount of used fuel produced by the entire commercial nuclear industry since the 1950s is roughly equivalent to the amount of waste produced by coal plants in a single hour.

Q: Is nuclear waste safe?

A: The NEI explains that once removed from a reactor, used fuel initially cools down in a concrete and steel storage pool. These safeguards help shield workers from radioactivity.

About 2 to 5 years after removal from the reactor, the used fuel is cool enough that it no longer needs to be stored underwater and can be stored in “dry casks” (large steel-reinforced concrete containers), which are **safe enough to walk up to and touch**.

Further, fuel has been transported safely in the U.S. since 1970 without any harmful impacts or environmental damage. In fact, after 7,000 total shipments of used fuel by the worldwide nuclear industry since 1970, there have been **no leaks of radioactive material or personal injuries**.

Q: What happens to nuclear waste?

A: The U.S. Nuclear Regulatory Commission, the U.S. Department of Energy, and the U.S. Environmental Protection Agency set **rigorous standards** for how the nuclear industry must handle and dispose of nuclear waste.

The NEI notes that some low-level waste can be stored at the plant until it stops being radioactive and is safe to be disposed of like normal trash. However, low-level waste is typically collected and **transported safely to one of four disposal facilities** – South Carolina, Washington, Utah, or Texas.

In addition, the federal government is planning to create a permanent disposal site for high-level waste at Yucca Mountain, Nevada. When completed, the project will ensure that the U.S. Department of Energy transports and disposes of all American commercially-used fuel in accordance with federal safety standards. Other interim storage sites have been proposed until a long-term site is made available.