



Is Nuclear “Clean-Energy”?

Nuclear is also sometimes wrongly termed a “clean-energy” source.

Nuclear reactors use uranium as fuel. In the U.S., in-situ leaching is the most common way to mine uranium – especially in the western part of the country. Uranium ore that is naturally found in the ground is dissolved using chemicals and pumped up to the surface, where it is processed using more chemicals.

This process contaminates water, air and soil and has caused significant health problems for mine-workers and surrounding communities. Pollution from uranium mining has had [serious health impacts on Native American nations](#) in the U.S., especially the Navajo nation.^[1] In 2014, the U.S. EPA and U.S. Department of Justice announced a record-breaking \$5 billion settlement related to the significant environmental damage and toxic pollution [caused by the Kerr-McGee company](#) at multiple sites across the country, including uranium mines in the Navajo Nation. The company exposed people to radioactive waste and contaminated soil and water, and tried to leave it all for the local communities and government to clean up.

Unlike renewable forms of energy, nuclear plants require huge quantities of water for cooling and generating power. This is especially true for older generation nuclear plants that still rely on antiquated once-through cooling systems, which withdraw millions of gallons of water from natural sources daily. For example, Pilgrim Nuclear uses up to 510 million gallons daily from Cape Cod Bay, killing an estimated average of 14.5 million fish annually (See [Table 4-4](#) from a 2002 Stratus Consulting Report). [Learn more about Pilgrim's impacts on Cape Cod Bay >>](#)

While some plants recycle water in a closed-loop system, those, like Pilgrim, that use once-through systems negatively impact the environment through water consumption, wastewater discharge, thermal pollution of source waters, and direct impacts on aquatic organisms of all life stages. Further, in the case of Pilgrim, its Clean Water Act [NPDES permit](#) has long been expired, and conditions are not being followed.

Nuclear operations generate large quantities of highly radioactive nuclear waste as a byproduct. There is currently no national plan for safe, long-term storage of this toxic substance. The waste is expected to be highly radioactive for hundreds of thousands of years [according to the Nuclear Regulatory Commission](#), however we currently don’t know how to safely store it for even a few hundred years.

All commercial nuclear facilities routinely release radioactive materials to the environment in the form of liquids and gases, either planned or accidental. These releases are a serious concern for public and environmental health, as there is no safe threshold to exposure to radiation.