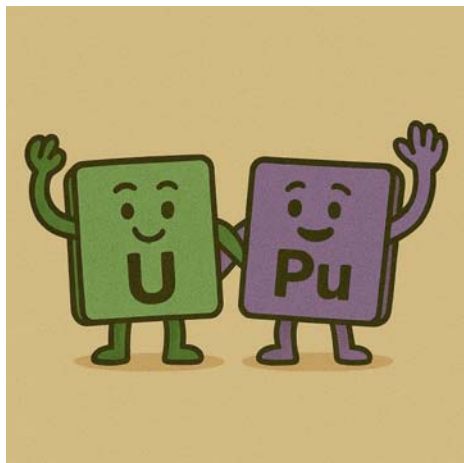


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What Role Do Uranium and Plutonium Play in Nuclear Reactors?

Have you ever wondered how a nuclear power plant makes electricity? It all starts with two very powerful elements: uranium and plutonium. These are types of atoms that have a lot of energy inside them. Scientists can use that energy to make electricity for homes, schools, and cities.

Inside a nuclear reactor, uranium or plutonium is used as fuel. That means it is the material that starts the process of making energy. The atoms in uranium and plutonium can be split apart in a process called fission. When an atom splits, it releases a lot of heat. This heat is used to turn water into steam.

The steam then spins a machine called a turbine, which makes electricity. It's kind of like how wind spins a windmill, except in this case, the steam is doing the spinning.

Uranium is more commonly used than plutonium. Uranium-235, a special kind of uranium, is very good at fission. Scientists prepare it so it can be used safely inside the reactor. Plutonium-239 is another element that can be used for the same purpose. Sometimes, plutonium is made inside the reactor by using uranium fuel.

One reason scientists like using uranium and plutonium is because they hold so much energy in a small space. Just a little bit of nuclear fuel can produce a lot more electricity than coal or oil.

But using these elements must be done very carefully. The fuel is kept inside strong containers, and the reactor has many safety systems. Once the fuel has been used up, it is still radioactive and must be stored safely for many years.

In short, uranium and plutonium are like the heart of a nuclear reactor. They give off the energy that powers the entire system. Without them, we wouldn't be able to use nuclear energy at all.