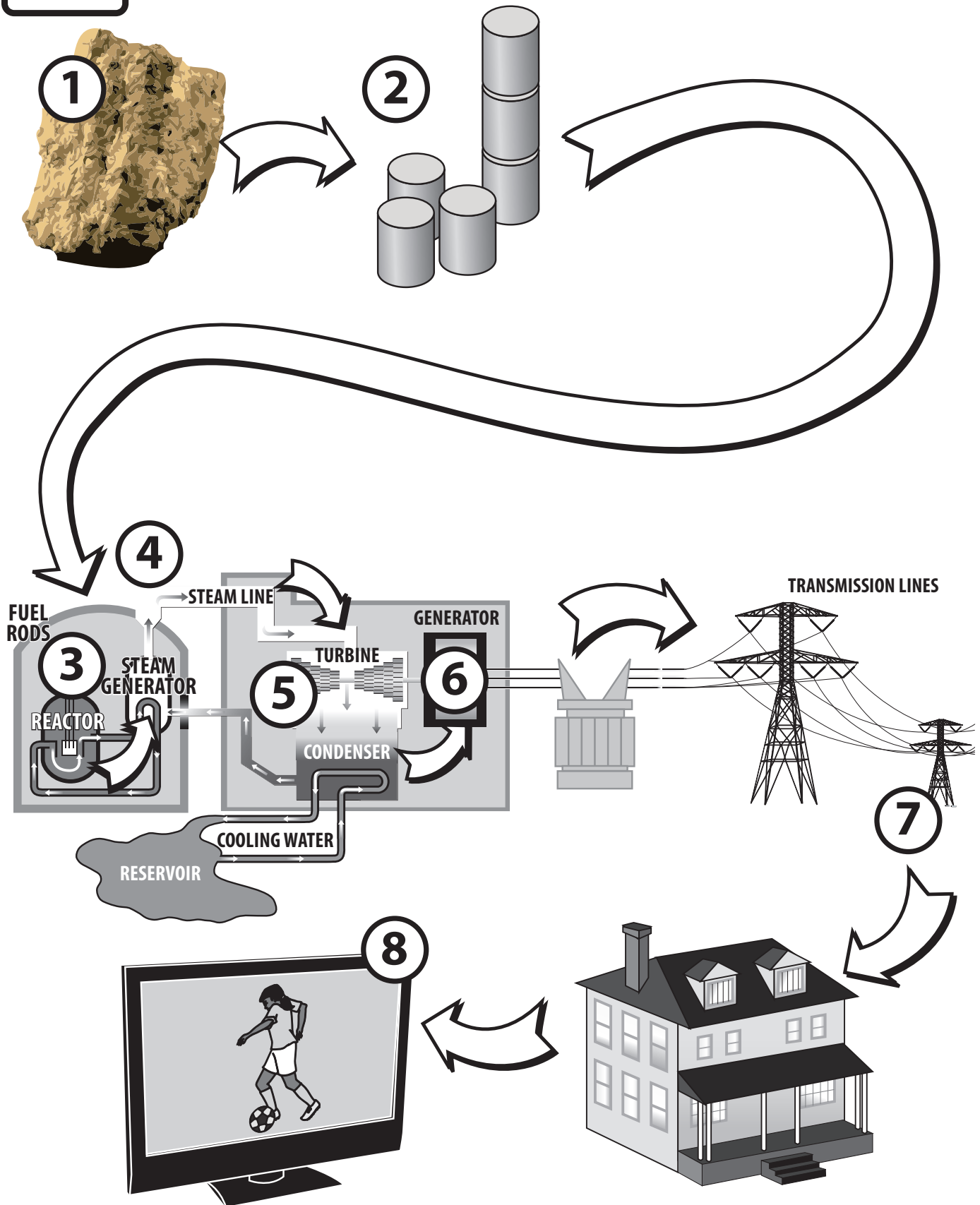




Nuclear Energy Flow

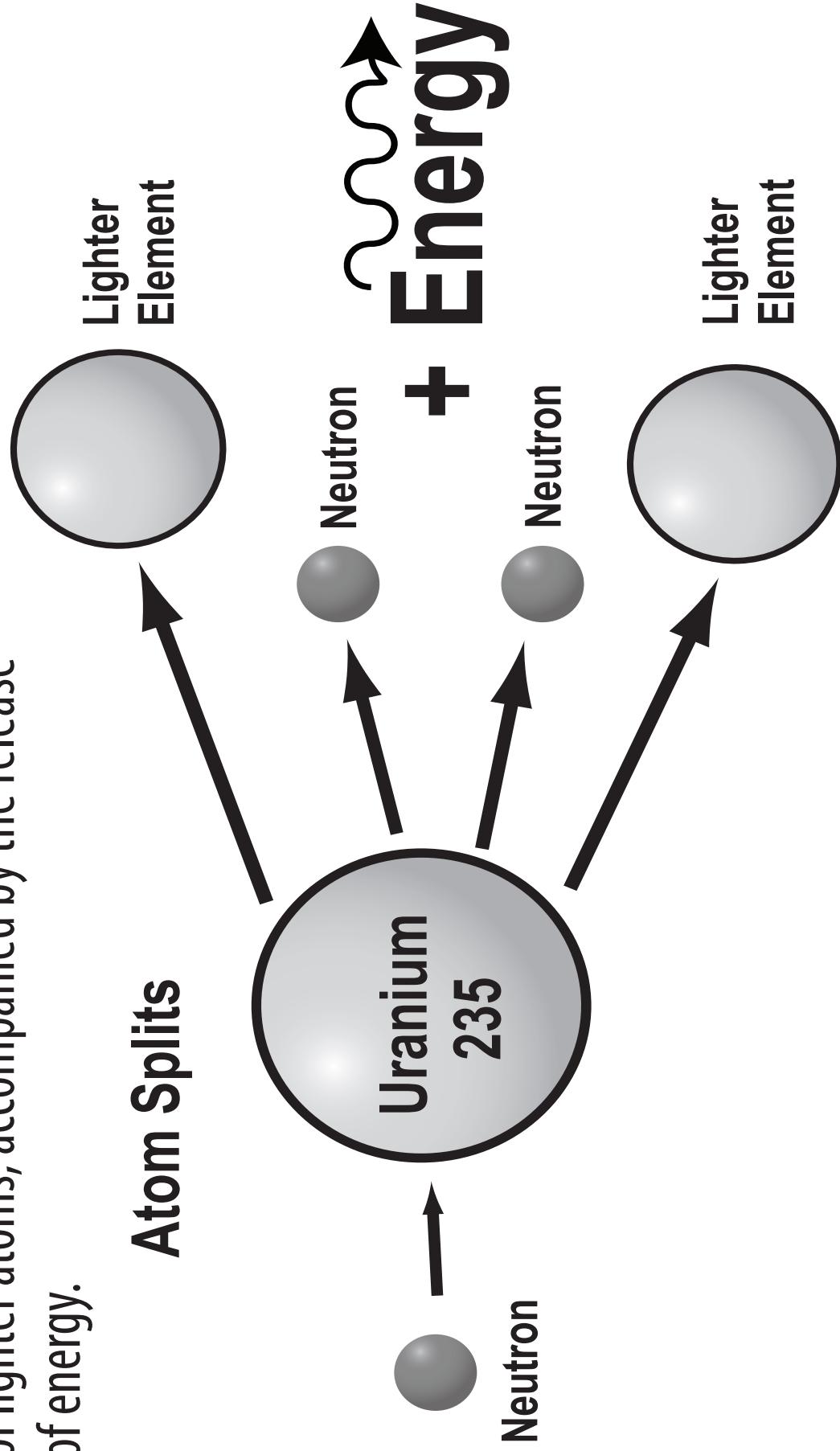




Fission

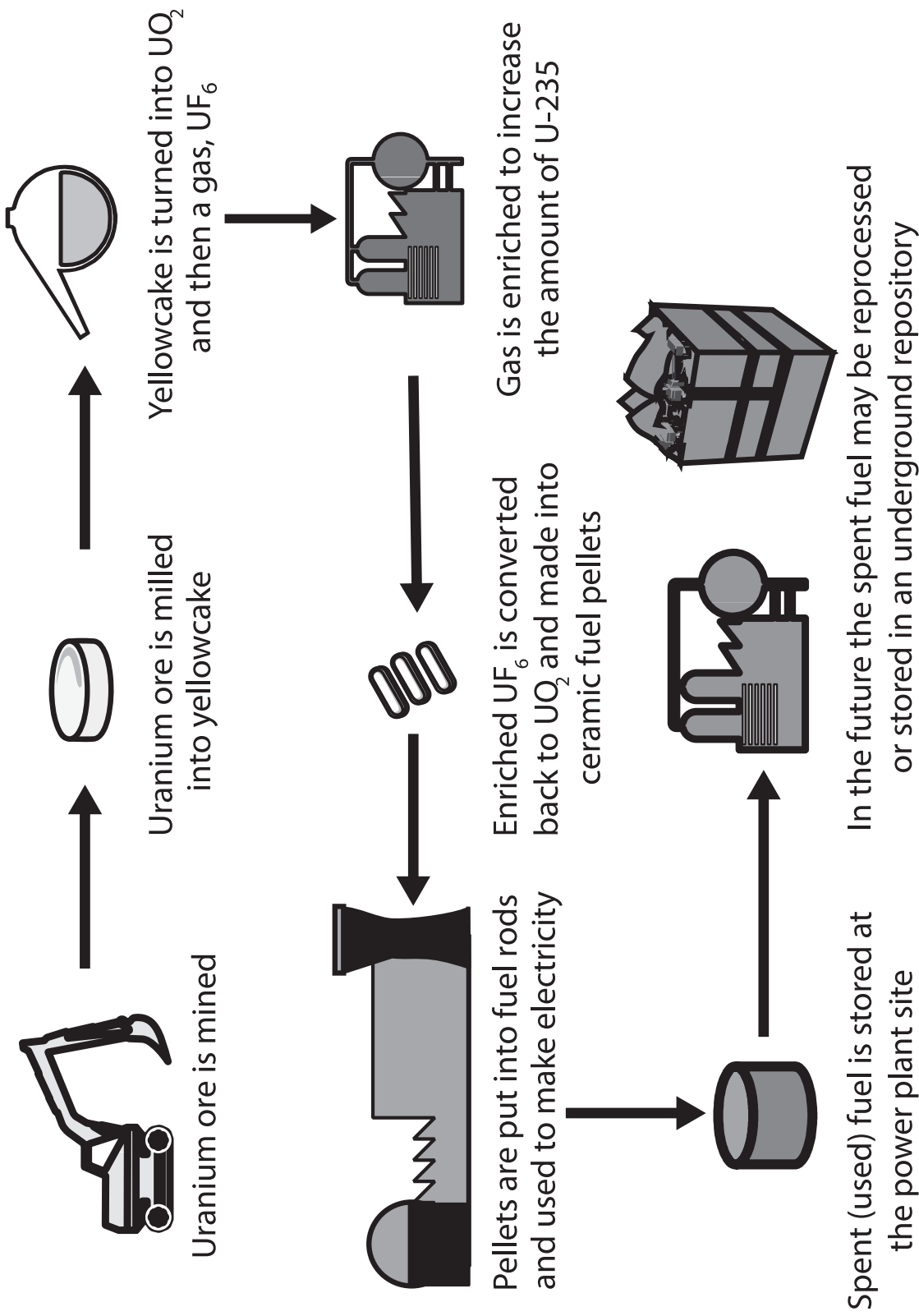
The splitting of the nucleus of an atom into nuclei of lighter atoms, accompanied by the release of energy.

Atom Splits

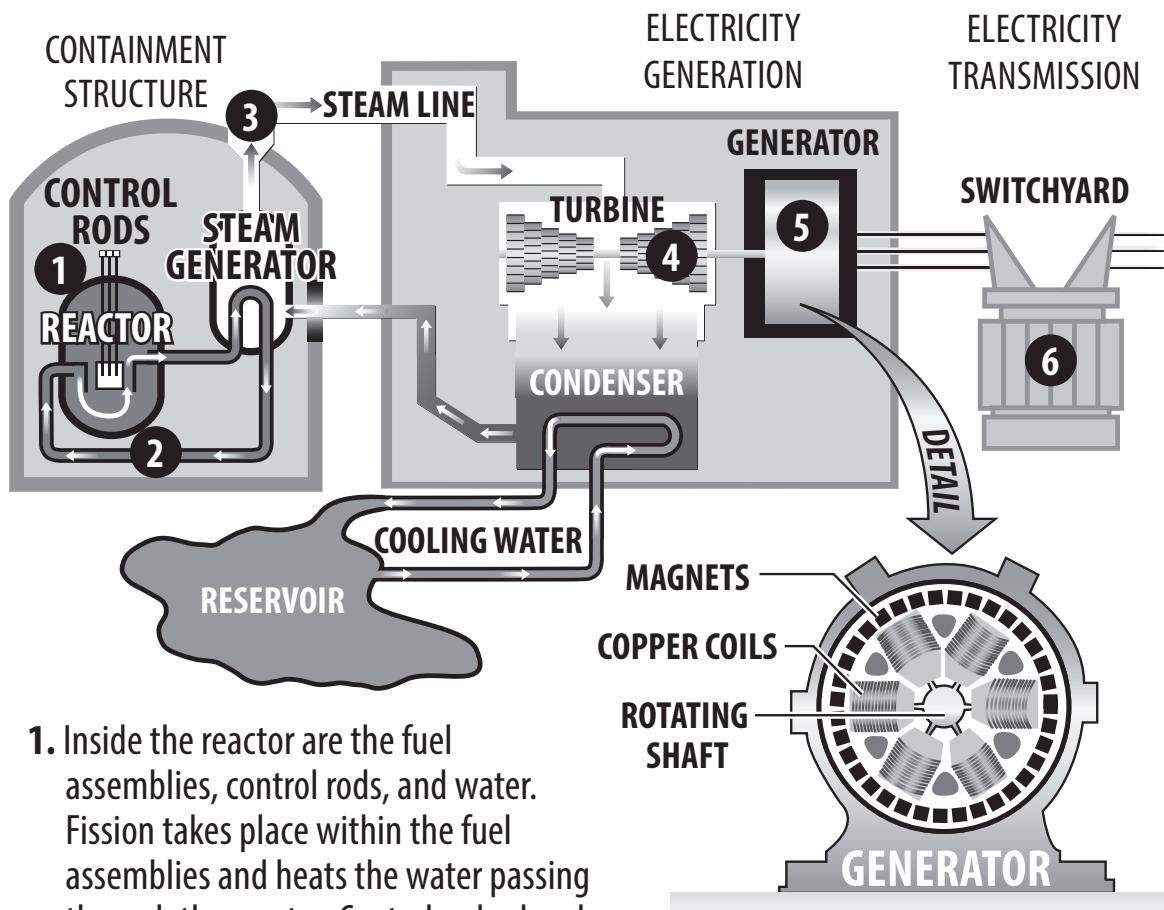




Uranium Fuel Cycle



Using Nuclear Energy to Generate Electricity in a Pressurized Water Reactor



1. Inside the reactor are the fuel assemblies, control rods, and water. Fission takes place within the fuel assemblies and heats the water passing through the reactor. Control rods absorb neutrons to control fission.
2. Water is piped through the reactor where it is heated. It then travels to the steam generator where the hot water in pipes heats a secondary system of water.
3. The steam generator keeps the steam at a high pressure. The steam travels through a steam line to the turbine.
4. The high pressure steam turns the turbine as it passes through, which spins a shaft. The steam then travels through the condenser where it is condensed by cooling water and is pumped back into the steam generator to repeat its cycle.
5. The turbine spins a shaft, which travels into the generator. Inside the generator, the shaft spins coils of copper wire inside a ring of magnets. This generates electricity.
6. Electricity is sent to a switchyard, where a transformer increases the voltage, allowing it to travel through the electric grid.