

Fill in the blanks using words from the word list.

Word List: reactor, chain reaction, processed, Synroc, Large, plutonium, open cut, mass, neutron, neutrons, rods, speeds, slowed, enriched, fuel, uranium-235, nucleus

MINING URANIUM

Uranium oxide (yellowcake) is mined using the _____ method. It is then crushed and _____ to become a concentrated uranium fuel. It is then compressed into _____ rods for the nuclear reactor.

NUCLEAR REACTOR

The type of nuclear reaction that occurs in a nuclear _____ is nuclear fission. This means that the _____ of a large atom is split into two smaller nuclei. The fuel used in most nuclear power stations is _____ (or U-235). The energy stored in the nucleus of uranium atoms is released when a _____ travelling at high speed hits the nucleus of the atom and causes it to split into two. Extra neutrons are also released which then in turn each split another uranium atom. The result is a _____. This can only happen if a minimum amount or critical _____ of uranium fuel is available. _____ amounts of energy are released.

In a nuclear reactor, the speed of the chain reaction is controlled by control _____, which are made of substances such as graphite that absorb _____. When these rods are pushed part of the way into the reactor, neutrons are absorbed and the reaction is _____ down. When the rods are pulled part of the way out, the reaction _____ up again.

AFTER THE NUCLEAR REACTION

After use in the nuclear reactor, some of the _____ produced can be reused in breeder reactors. However, most of the nuclear waste must be carefully _____ for long-term disposal. The radioactive waste must be enclosed in natural sandstone or synthetic rock called _____ and buried away from populated areas.