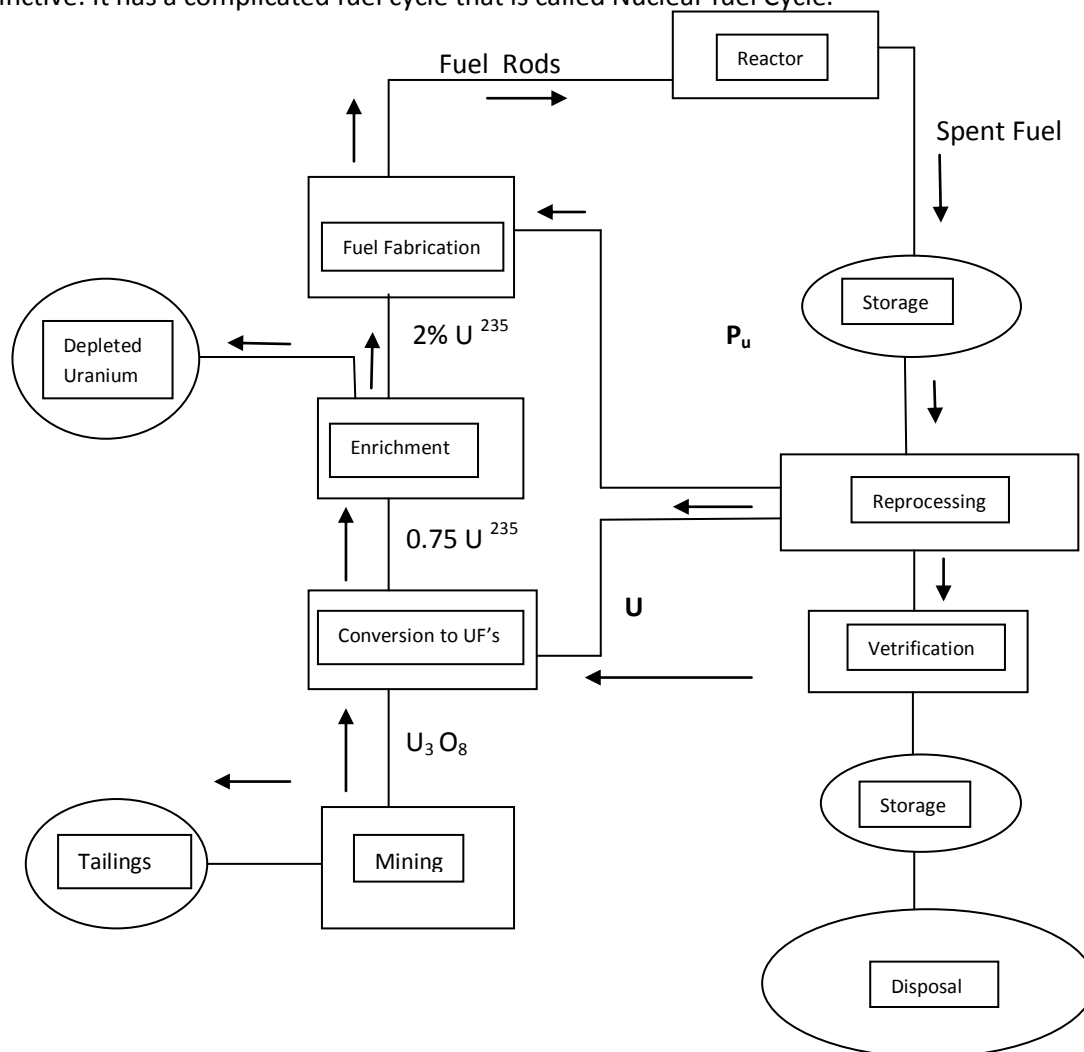


## Nuclear fuel cycle

Uranium occurs all over the world crust as that of tin and is slightly radioactive. It present in rocky soils and river beds and in sea water. In granite 4 parts per million is uranium composition and the granite occupy 60 % of earth crust. In some coal deposit more than 100 ppm (0.01 %) and in fertilizer maximum of 400 ppm the uranium exist.

The Radioactivity in uranium is due to other mineral derived from it by radioactive decay process. Economically feasible to use nuclear fuel because of it is naturally available on the earth abundantly.

Thus the uranium readily available on earth could not be used as fuel directly for Nuclear power generation purpose. It has to undergo so many process before converting it as fuel  $U^{235}$  for nuclear power generation. More so than other energies like coal, oil, Uranium has its own distinctive. It has a complicated fuel cycle that is called Nuclear fuel Cycle.



There is a several steps in the nuclear fuel cycle. Mining , milling, conversion ,enrichment ,fabrication of fuel are some of the steps involved in fuel cycle which employed to make raw uranium to  $U^{235}$  the nuclear fuel. All these steps of process which raw uranium undergoes are called Front End of Fuel Cycle.

When  $U^{235}$  the nuclear fuel is being spent (burnt) for the generation of electricity in Nuclear power plant it has to be treated once again for reuse or otherwise some process has to be carried out against spent residue nuclear fuel before disposal. It involves so many processes such as temporary storage, reprocessing, recycling, and waste disposal. These process carried on after nuclear fuel spent are called Back end of the Fuel Cycle.