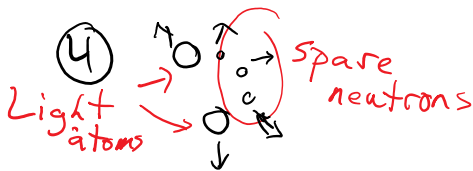
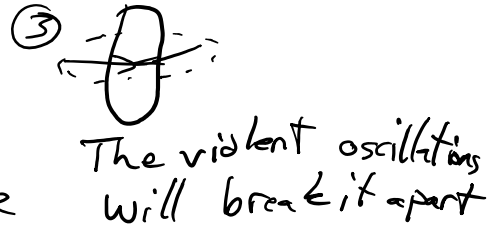
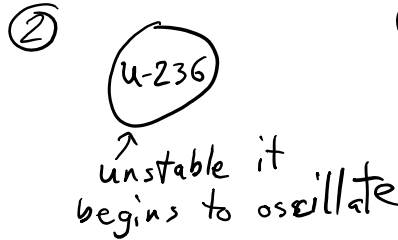
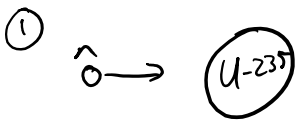


Fission & Fusion

May 29, 2017 8:11 AM

Fission is the process where a heavy nucleus splits into lighter pieces.

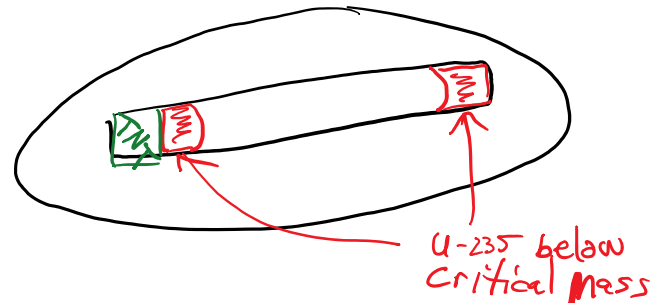
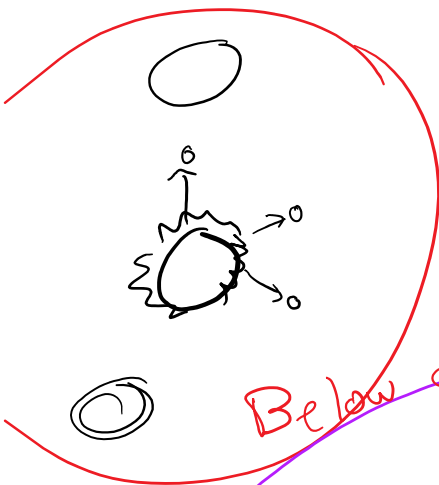
Ex Induced Fission of U-235



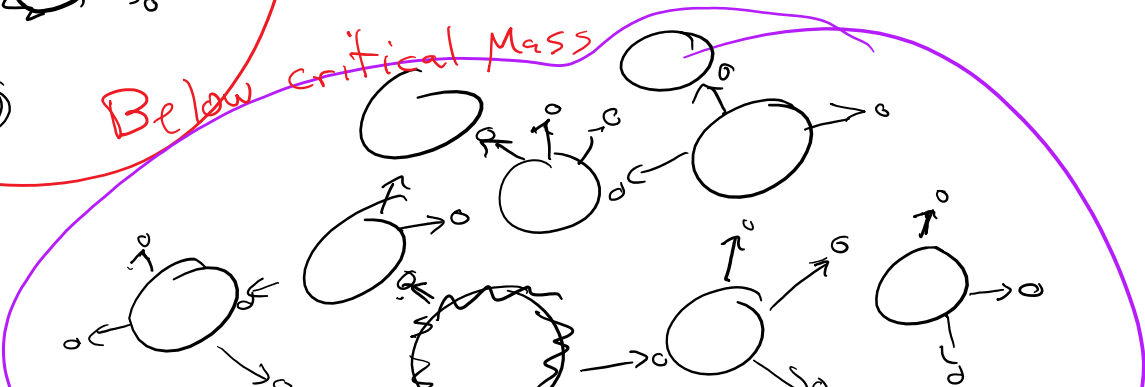
The ΔE is released as heat

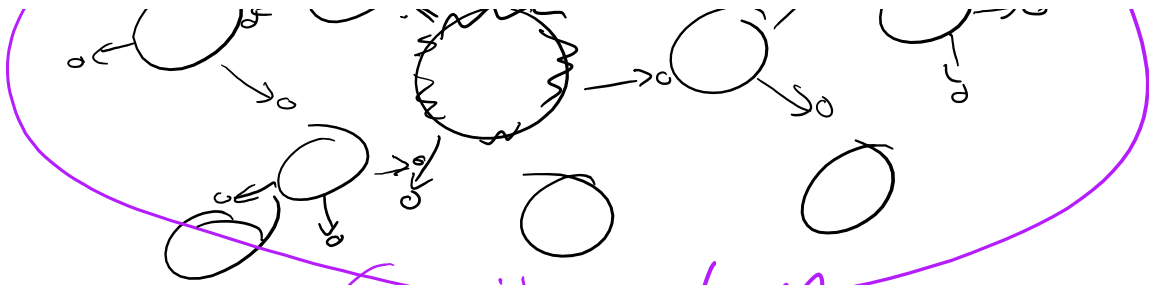
To let this continue we can have nearby Uranium-235 to be hit by the spare neutrons.

Critical Mass: The density of reactive isotopes is at such a place when an initiating event can start a sustained chain reaction.



Below critical mass





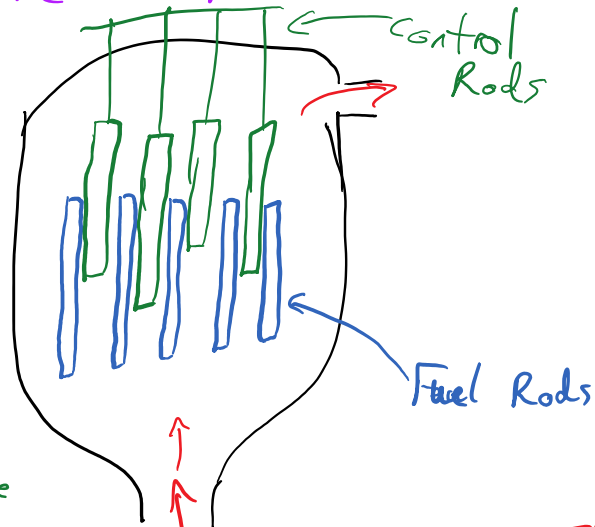
Critical Mass.

Controlled Fission

→ Reactor Chamber →

→ Control Rods are neutron absorbers

AI systems read the outputs of the system and dynamically change the position of the control rods.



Heat Exchange Fluid
- Transfers the product energy out of the chamber

Waste Products:
Long-Term Radioactive Storage is a Challenge

Fusion

Is the combination of light nuclei into a heavier product.

Uncontrolled Fusion

The pressure from the two outer bombs compresses the hydrogen to the point where it begins fusion.



Controlled Fusion

Activation Energy - Overcome the electro-magnetic repulsion of the protons.

Magnetic Confinement:

Use magnets to keep the hydrogen moving in a set wave pattern.

Hydrogen is continually injected to create pressure and cause fusion.