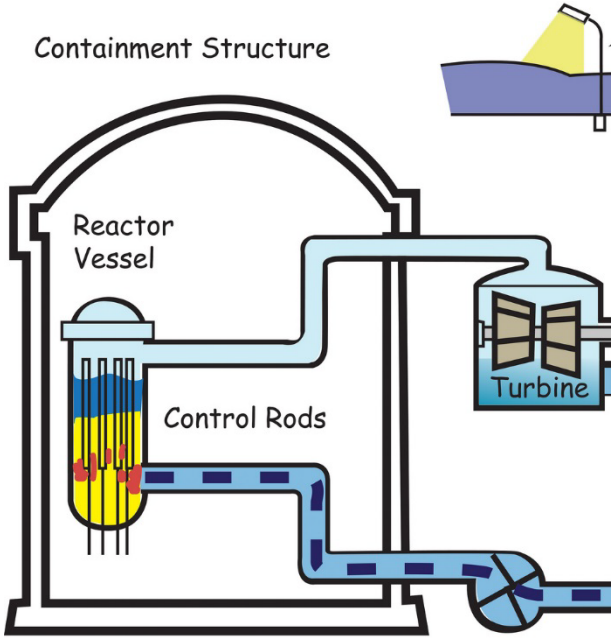
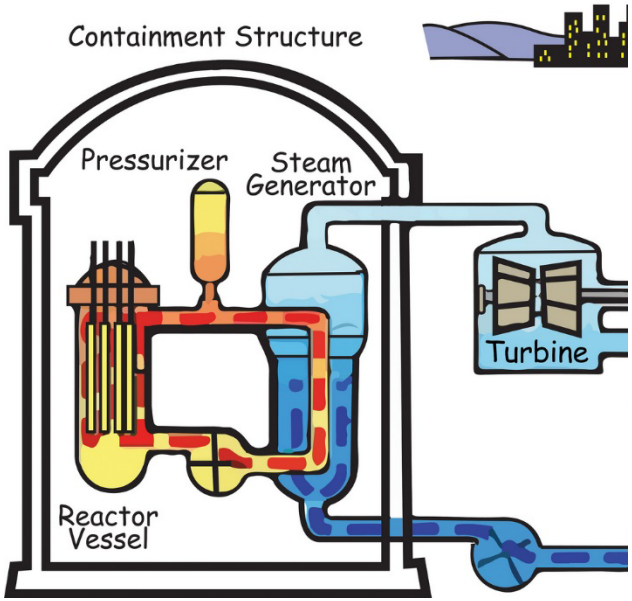
Reactor Types

Core inside reactor vessel creates heat, steam is created (main loop in BWR, secondary loop in PWR), steam turns turbine, which produces electricity



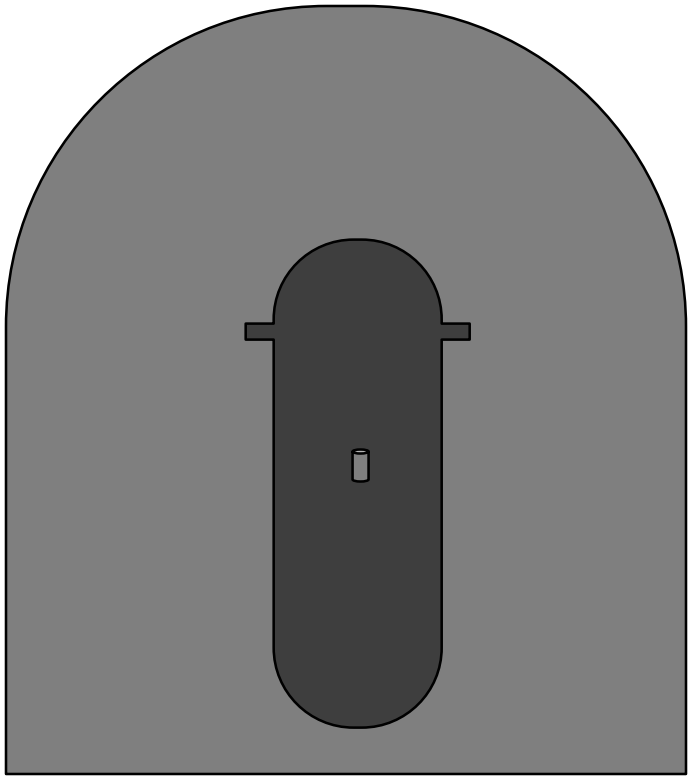
Boiling Water Reactor (BWR)



Pressurized Water Reactor (PWR)

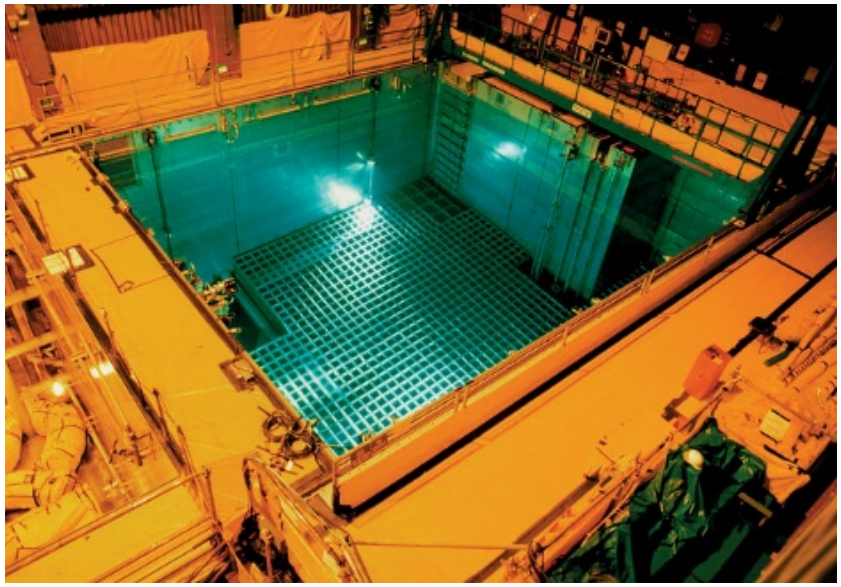
Large releases will come from major fuel damage, only caused from lack of cooling

- No heat removal leads to fuel cladding failure and fuel melt
- Eventual RCS overpressure / leakage
- Possible containment overpressure / leakage



Spent Fuel

- **Every 12-24 months, a fraction of reactor core is replaced and moved to a pool to cool.**
- **5-10 years later, cooler fuel moved to dry cask**



Fuel Cycle

- Fuel cycle facilities convert, enrich, and fabricate mined material into reactor fuel
- RASCAL Supports these accident types:
  - UF_6 Cylinders
  - Criticality
  - Fire/Explosions involving Uranium Oxide