Notes:

Tritium will be tracked as a “Material” which has a recipe and a mass (in kg). Operations which can be performed on this material are:

* Create
* Extract [Qty/Comp]
* Absorb
* Transmute
* Decay

Lithium will also be treated as a material, which will have a recipe which specifies some enrichment. In the more advanced implementation, the model will transmute a certain percentage of the Li-6 into T + He and lithium enrichment can then be tracked.

Each timestep a certain amount of tritium will burn (in the basic implementation it will be 55.8kg \* power/1000MW \* 1/12 with a timestep of 1 month or something like that), and then the amount of tritium aded to the system will be TBR\*amount burned such that the total change in tritium will be:

dT = tritium\_burned\*TBR - tritium\_burned

It will be important to be careful how we do burnup, breeding, and decay sequentially. It is currently unclear if there is a best practice, or if it matters (maybe for really short simulations it does, but for longer ones it’s fine?)

# Basic Input Mode:

**Inputs:**

* reactor\_power
* TBR\_a\_sys
* reserve\_inventory

**Assumptions:**

* Certain Lithium Enrichment percent (get from ITER or something)
* burn\_rate = 55.8 kg/(yr\*GW) \* reactor\_power