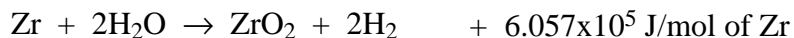

PROBLEM 3-6N QUESTION

Energy Sources In A Typical PWR

Compute the energy sources in a typical PWR (Sequoyah - Table 1-2) which the containment might have to accommodate.

1. Stored Energy in primary coolant. Should enthalpy or internal energy be used: Explain.
2. Stored energy in secondary side of the steam generator (assume 89 m³ of saturated liquid at secondary system conditions).
3. Decay Heat – integrated release over a one day shutdown period after infinite operation.
4. Chemical Reactions –
 - a) metal-water reaction of 75% of the zircaloy clad.
 - b) reaction of 25% of the zircaloy clad with CO₂ to produce C which then reacts with CO₂ to produce CO. Assume reactions are constrained only by amount of zircaloy available.
5. Combustion of hydrogen and carbon monoxide product in (4) above.

Reaction Heat



* Please pay attention to **Heat Unit**

Combustion Reactions

