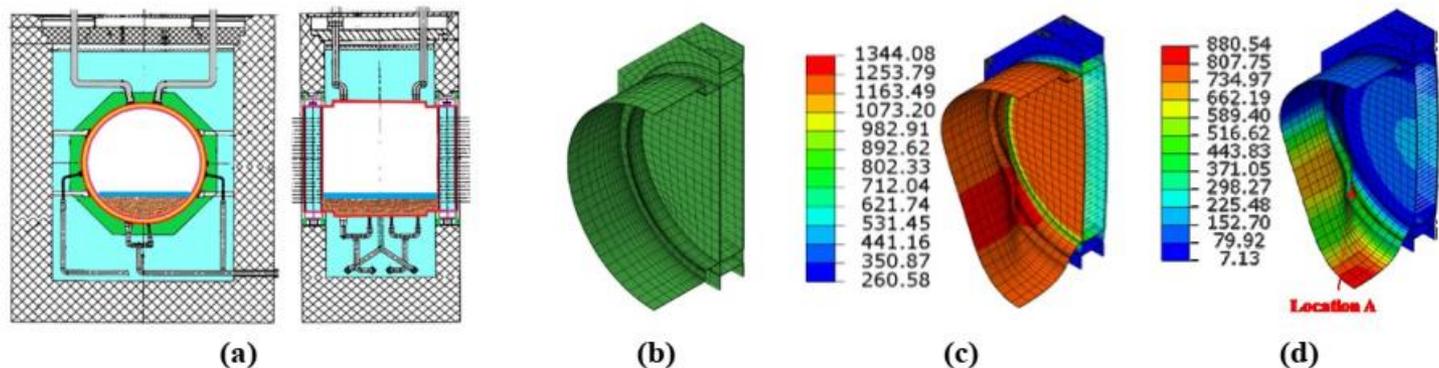


# Structural integrity assessment of Calandria of standard 220/ 540 MWe PHWR for in-vessel corium retention

- Sequentially coupled thermal-hydraulic and structural analyses were conducted to assess the structural response of Calandria under a postulated severe accident.
- Calandria failure time due to plastic instability, excessive inelastic strains and creep-stress rupture was evaluated for standard 220 MWe and 540 MWe PHWR.
- High temperature tensile and creep properties of Calandria material were generated for temperatures up to 1100°C.



**Figure 1: (a) Schematics of Calandria located inside vault under core-collapse conditions, (b) FE model of 540 MWe PHWR Calandria assembly, (c) Temperature (°C) and (d) Displacement (mm) at 74.1 hours**