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Key issues (July 1998)

- * • Structural material compatibility with coolants
 - max O, C, N, H levels in coolant vs. temperature
 - convection loop corrosion tests for structural alloys in flib
- Joining/repair methods for irradiated materials
 - can the lap joint limit (based on fusion welding of steel) be increased?
- Fracture toughness data for refractory alloys
 - need experimental data vs. T (incl. impurity pickup effects)
- Development of improved refractory alloys (TiC additions, etc.)
- Critical evaluation of stress limits for structural components (cf. ITER structural design methodology)
- * • Creep-rupture temperature limit for V-4Cr-4Ti at $\geq 650^{\circ}\text{C}$
- * • High temperature ^($\geq 700^{\circ}\text{C}$) radiation effects on structural materials
 - DBTT, tensile properties
 - effect of interstitial impurities
- Effect of transmutations on material properties (in conjunction with neutronics group)
- * needed for lifetime estimation
 - T₂ inventory/permeation (design-specific)