The current status of the material property handbook for a structural design using Japanese reduced activation ferritic/martensitic (RAFM) steel F82H was summarized. In particular, the details of the material strength standards newly determined based on statistical data are shown.

- The key structural parameters, e.g., time-dependent/independent design stresses and fatigue design curves, were determined following the French structural design code RCC-MRx.
- The multi-axial fatigue-creep using the modified universal slope method and the brittle/ductile fracture approaches are explained.
- The future work needs to address on the integration of microscopic irradiation effects to macroscopic evaluation of structural integrity.