

Superconducting performance of as-built ITER magnet system - towards commissioning

ITER superconducting magnet system design is based on Cable-In-Conduit Conductors (CICC) cooled at cryogenic temperatures by forced circulation of supercritical helium. As part of the as-built performance assessment of the superconducting magnet system of ITER, a new 15 MA DT plasma scenario baseline was analysed. Using the updated SuperMagnet models (FLOWER 1D hydraulic network, THEA dual channel CICC model, and HEATER thermal diffusion model), the operation margins on the coil conductors and their busbars is now available and fulfil the design criteria. Additional work was carried out to initiate the commissioning preparation such as having some sensitivity analysis to guide the test to be conducted prior first plasma in December 2025.

Category

Tools to support commissioning and operation phases of superconducting magnet systems

Keywords

Primary author: GAUTHIER, Florent (ITER Organization)