

Development and Commissioning of 1KW @ 4.5K Cryogenic System for Superconducting Test Facility of CRAFT

Wednesday 24 July 2024 14:00 (2 hours)

As national major science and technology infrastructure, Comprehensive Research Facility for Fusion Technology (CRAFT) is being built by ASIPP. Cryogenic system is an important part of the research for superconducting magnets. ASIPP designed and developed a 1KW@4.5K helium cryogenic system to meet some cryogenic testing, such as a conductor performance research platform and a central solenoid model coil test facility. The helium system can provide a cooling capacity more than 1KW, and reserve 3.8K cooling mode. In 2023, the system has been tested successfully, and the performance index of the refrigerator reached the expected requirements. This paper describes the design of CRAFT 1KW @ 4.5K cryogenic system and the results of cooling testing.

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Session Classification: Wed-Po-2.5

Track Classification: Tracks ICEC 29 Geneva 2024: ICEC 01: Large scale refrigeration and liquefaction