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C3Or3D-01: ITER Cryogenic System Commissioning and Performance Testing

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The ITER Cryogenic System is one of the largest Cryogenic facilities to build and commission. Main challenge is not only to demonstrate quite large cryogenic performance of machines but also to coordinate start-up and operation of a very large number and diversity of equipment in a multi-contract environment. To give overview, ITER Cryogenic System is mainly composed of three identical Liquid Helium plants of 75kWeq at 4.5K, two 80K Plants of 840kW at 80K, two nitrogen liquefiers with equivalent capacity of 26 LN₂ trucks/day, a large Helium recovery & inventory management system and five Auxiliaries Cold-Boxes to distribute cryogens to Tokamak's users.

While Cryodistribution system is entering its installation phase finalization with arrival of distribution boxes and associated warm panels in Tokamak's galleries, Cryoplant is presently facing intensive commissioning phase with a very challenging performance testing plan to be achieved to support both Cryopumps & TF Coils Cold Test Facilities. This is key for ITER to achieve this objective duly on time to not alter Tokamak assembly schedule. Main challenges, outcomes and testing plan will be described.

Disclaimer: The views and opinions expressed herein do not necessarily reflect those of the ITER Organization

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