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The Commissioning of the Helium Cryogenic System and LN₂ Transfer System in the TPS Ring

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Because of the delay of civil construction, one refrigerator/liquefier test area (R/L area) was constructed for the assembly and test of a 700 W cryogenic system in year 2012. The 700 W cryogenic system was installed in March 2012 and tested in the test area with a non-vacuum jacket liquid nitrogen (LN₂) transfer line in October 2012. The Civil construction of the TPS ring was completed, which is available for installing the system in mid of 2013. The cryogenic system for R/L area was thus disassembled and relocated from the R/L test area to the TPS ring. The vacuum jacketed LN₂ transfer line with a phase separator was installed in November 2013. This paper is aimed to present the disassembly, reinstallation and re-commissioning results of cryogenic system. The function test and heat load test of the LN₂ transfer line and phase separator is also presented and discussed.

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