Contribution ID: **174** Type: **Contributed Oral**

C2Or4A-01: Status of the PIP-II cryogenic plant

Tuesday 20 May 2025 16:15 (15 minutes)

The Proton Improvement Plan-II (PIP-II) is an essential upgrade to the Fermilab accelerator complex, featuring a new 800-MeV Superconducting Radio-Frequency (SRF) linear accelerator (LINAC) powering the accelerator complex to provide the world's most intense high-energy neutrino beam. The PIP-II Linac contains 23 SRF cryomodules with the SRF cavities operating at 2K, a high temperature thermal shield at 40K and low temperature intercepts at 5K. The cooling power for the cryomodules and the cryogenic distribution system is supplied by a single helium cryogenic plant with max capacity of 2.5 kW at 2.0 K. The cryogenic plant includes a refrigeration cold box, a warm compressor system with ORS/GMP, and helium storage, recovery, and purification systems. This paper describes the current progress in integration design, fabrication and installation status of the PIP-II cryogenic plant.

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Session Classification: C2Or4A - Large Scale Refrigeration IV: Beam-Line Energy Physics