PIP-II Project Director Report

September 2021

Project Highlights

- Design of the PIP-II Cryogenic Plant has started in earnest. Joint meeting BARC-ALAT-FNAL is scheduled in October.
- The first LB650 cavity from INFN is being jacketed following a successful vertical test.
- Project Planning Documents with the Wroclaw University of Science and Technology (WUST) received DOE approval.
- · An international Accelerator Physics Workshop was held.
- The 9th PIP-II Project Executive Board meeting centered on CD-3 preparations.
- CERN COURIER features PIP-II, emphasizes International Partnerships.

PIP-II Cryogenic Plant design is launched

The PIP-II Cryogenic Plant design has started in earnest. Air Liquide Advanced Technologies (ALAT), the PIP-II Cryogenic Plant vendor, is advancing the cryoplant design. A four-day joint meeting of ALAT-BARC-FERMILAB is planned in October to access the design status and progress, review various technical requirements and interfaces, and other issues.



3-D models of the cold box and warm helium compressor skid, key components of the PIP-II cryogenic plant.

est. Sept. 1–Dec. 1 ASPIRE Fellowship application period

Upcoming Events

Nov. 30–Dec. 2	CD-3 Director's Review
Dec. 15	10 th Project Executive Board (P2PEB Meeting
March 1-3, 2022	DOE CD-3 IPR

Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

Successful vertical test of first LB650 cavity from INFN; HB650 production cavity Final Design Review was conducted



The INFN multi-cell β =0.61 cavity (bare) has been successfully tested in VTS thanks to the addition of a phase lock loop to suppress the parasitic mode that caused mode-mixing. The cavity reached 20 MV/m and is now being jacketed.

The HB650 production cavity & tuner FDR was successfully conducted September 29-30.



Cavity performance of the INFN β =0.61 cavity

MP9 Clean Room construction and certification is complete

The MP9 Cleanroom construction and certification is complete. Procurement of the vacuum and N_2 lines is ongoing. New N_2 lines will be installed in the next weeks.



MP9 Clean Room

International Collaboration Meetings

An all-collaboration **Accelerator Physics Workshop** was held Sept. 1-3, 2021. Agenda, talks can be found here: <u>https://indico.fnal.gov/event/50492/</u> Goals of Workshop:

- Important design choices with commissioning in mind
- Lessons learned from commissioning and operations
- Evolution of the design based on lessons learned
- End-to-end beam dynamics simulations
 Exchanges of experience from PIP2IT, SNS
 (S. Aleksandrov), Linac 4 (A. Lombardi), BARC
 (LEHIPA RFQ) were presented.

The **PIP-II Project Executive Board (P2PEB)** met on Sept. 16, 2021. Discussions included updates from international partners and preparations for CD-3.



PIP-II international partners participate in P2PEB#9

PIP-II is featured in a special issue of the CERN COURIER dedicated to US Accelerator Projects. PIP-II was selected for the cover of the issue:

https://cerncourier.com/wp-content/uploads/2021/09/CERNCourier2021USA-digitaledition.pdf

