

Summary of P2MAC April 10-12, 2017

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April 14, 2017
PIP-II meeting
Fermilab

Introduction

- PIP-II Machine Advisory Committee took place on April 10-12, 2017
- Committee members: Rick Baartman (TRIUMF), Roland Garoby (ESS - chair), Frank Gerigk (CERN), Kazuo Hasegawa (JAEA, J-PARC), Sang-Ho Kim (ORNL, SNS), Deepak Raparia (BNL), Jie Wei (MSU, FRIB), Hans Weise (DESY).
- Web-site:
<https://indico.fnal.gov/conferenceOtherViews.py?view=standard&confId=13692>
- Objective: Review of PIP-2 CDR
 - ◆ 24 presentations
 - 22 organized around CDR text
 - Last 2 on the R&D: (1) PIP2IT, (2) SRF

Four Questions of the charge

- Q1: Is the scope of the facility described in the CDR both feasible and likely to satisfy the requirements outlined in the Mission Need Statement?

YES.

- ◆ CDR is precisely tailored to these medium and long term goals

- Is the facility likely to meet the enumerated performance goals incorporated into the Functional Requirements Specification (FRS).

YES.

- ◆ The data available convincingly indicates that all accelerators as well as the whole facility will meet the enumerated performance goals.

- Q3: Have the risks inherent in the conceptual design been adequately identified and appropriately targeted within the R&D program?

YES, but...

- ◆ A lot of risks retired but many are left: SSR-2 and LB650 cavities, reliability of piezo devices, RF couplers, injection girder in the Booster.
- ◆ Also: risks associated to procurement of high technology devices

- Q4: Can the conceptual design be characterized as being sufficient to provide the technical basis for CD-1?

YES.

Recommendations

- R2: Consider the addition of a low power beam dump in a straight section at the end of the linac tunnel for beam tuning/study.
- R3: Flesh out and finalize the Booster injection girder design.
- R9: Establish a test stand to assess the long-term reliability of the microphonics & LFD compensation set-up, which also addresses the reliability of the fast tuners. ...
- R10: Foresee long-term testing of all RF couplers under PIP-II operational conditions.
- R11: Implement a new control system and a new MPS in PIP2IT as soon as reasonably achievable. That will be a very useful test before extension to PIP-II.

Conclusions

- Overall - very positive review
- Committee read the CDR text
 - ◆ About dozen typos were found
- Corrected version of the CDR is at the CDR site
 - ◆ A number of additional problems were found and corrected
 - ◆ Some FRSs need to be corrected before the final version is issued