

News from the IPR ... and beyond

Beamline/NSCF Integration Meeting

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IPR Results

- Beamline did very well
 - Committee pleased with technical work
 - Cost and schedule got minimal scrutiny
 - Don't be lulled into complacency
 - Serious drill-downs will come
 - See next slides for details
- At the Project level, there remains concern about getting to a budget with 40% contingency that fits in \$2.6B
 - But how does this affect me?
 - Beamline needs to stay in cost envelope
 - Beamline needs to meet VE targets
 - International contributions will count

2.1 Beamline

A. Sy, TJNAF and S. Peggs, BNL/
Subcommittee 1

- **Comments**
- The Beamline team has made good technical progress since the last IPR.
 - Identification and tracking of subsystem interfaces has also progressed well.
 - The committee commends the Beamline team and their international partners for this effort. Keep up the good work!
- Relations and planning with international partners appear to have improved significantly.
 - The committee was encouraged by the participation of international partners in Beamline talks during this review.
- The draft MOA with the laboratory will supersede the signed MOUs that are currently in place.
 - Given the delay between drafting and completing the previous MOUs, completing this MOA in a timely manner is encouraged.



2.1 Beamline

A. Sy, TJNAF and S. Peggs, BNL/
Subcommittee 1

- **Comments**

- Value engineering (VE) measures to reduce the high-bay floor space at the Target Complex rely on a proposed Target Systems Integration Building that is FNAL GPP.
 - Availability of this building for horn prototype testing is crucial to keeping horn production off the critical path.
 - VE measures (such as reduced length of the Decay Pipe) that would lead to an irrevocable loss in DUNE performance should be carefully considered as a last resort.
- The committee notes and encourages early prototype testing.
- The Beamline team is adapting well to challenges associated with COVID-19.



2.1 Beamline

A. Sy, TJNAF and S. Peggs, BNL/
Subcommittee 1

- **Comments**
- The Threshold KPPs need to be strengthened.
 - They would be improved by including one or more beam goals that could be quite modest and preliminary.
 - The committee recognizes that many weeks are likely to be necessary to tune up beam all the way through to the hadron monitor, in preparation for routine operations.
- Objective KPP number 4 currently reads “Protons delivered and muons detected downstream of the target complex”. As worded, it is unclear what this KPP includes.



2.1 Beamline

A. Sy, TJNAF and S. Peggs, BNL/
Subcommittee 1

- **Comments**

- The KPPs and the high-level schedule could jointly refer to the same final Beamline milestone.
 - That milestone could be the hand-off to operations as it will be defined in the Transition to Operations Plan.
- A double asterisk on the KPPs notes “these goals depend on delivery of hardware by non-DOE partners”.
 - This can give the impression that international partners are inadequately integrated into the Beamline effort.



2.1 Beamline

A. Sy, TJNAF and S. Peggs, BNL/
Subcommittee 1

- **Recommendations**

- Complete the MOA with the laboratory detailing resource and equipment availability prior to the next IPR.
- Strengthen the Threshold KPPs to demonstrate a more complete and well-defined readiness of system components, possibly including a beam goal. Clarify the final Objective KPP (number 4). Report back at the next IPR.

Road Ahead

- January 2021
 - Status IPR
 - Assess readiness for baselining in summer
 - Start practice EVMS
 - All cost schedule changes must be complete by November
- March 2021
 - Director's Review
 - Prep for CD-2/3b
- June 2021
 - CD-2/3b
 - Baseline full project
 - Construction funds for Far Site

Road Ahead – Phase 1

- Finish work in progress
 - Design report
 - Most sections are done. Thank you.
 - There are a few stragglers. You will be hearing from me.
 - Cable planning spreadsheet
 - Limited progress
 - This is conceptual only to make sure we have accounted for all runs in CF design
 - Please finish by early next week
 - Contact Cons or me with questions
 - Procurement bundling
 - Horns and TSP still to do
 - I need to meet with managers

Road Ahead – Phase 2

- Scrub the BOEs
 - Gathering of estimates is complete
 - Now we need to insure that the documentation is in shape
 - A reviewer should be able to trace an estimate from P6 starting from a quote or prior purchase up through an easily understood spreadsheet to a final number that shows up in P6.
 - We will have practice drill-downs of all systems
 - Start early September
- Update installation plans
 - Start with Primary Beam
 - Cons and Jose will do the work, but we will need help from all to validate
 - Need to complete Target and Absorber halls by November change deadline

Road Ahead – Phase 3

- Installation and commissioning plans
 - Draft Transition to Operations Plan needed for CD-2
 - Use Mu2e as a model
 - Define work needed to commission systems
 - Verify inclusion in P6
 - Written definition of project completion for each subsystem
 - Criteria for handoff to operation
 - How does each system satisfied the Key Performance Parameters

Value Engineering

- Need to find \$40M from NSCF and \$5M from beamline
 - The bathrooms are gone
 - Porta-potties during construction
 - Reduce high-bays
 - Evaluate rental cranes for Primary Beam and Absorber installation
 - What space is still needed in service buildings?
 - Move horn-module integration tests to TSIB
 - Can we reoptimize Absorber Hall?

Absorber Hall

