PIP-II Beam Transfer Line PDR Review Charge

Document number: ED000xxxx

Document Approval

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| Name:  Org:  Contact:  Role: | Date: |
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Revision History

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| --- | --- | --- | --- |
| Revision | Date Release | Originator:  Role: | Description of Change |
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# Introduction

The PIP-II Beam Transfer Line transports the H- beam from the exit of the SC Linac to the Injection Girder of the Booster. Figure 1 shows the Transfer Line Layout. The Transfer Line has two arcs and a straight section connecting them. In the straight section the Transfer Line splits into two additional lines. One goes to the Beam Dump and the other goes to the Mu2e experiment. A Preliminary Design Review (PDR) is needed for the Beam Transfer Line lattice and magnets.



Figure 1: Beam Transfer Line Layout including the Beam Absorber Line.

# Review Agenda

| “Beam Transfer Line PDR” Agenda |
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|  |  |
| --- | --- |
| Location: | 1-East |
| Date: | December 12th 2019 |
| Time:  Indico Site: | 09:00-15:30  https://indico.fnal.gov/event/22598/ |

Participants:

|  |  |  |
| --- | --- | --- |
| Ioanis Kourbanis  ioanis@fnal.gov | Fermilab AD-MI Department | Role: Coordinator |
| James Morgan  jpmorgan@fnal.gov | Fermilab AD-Muon Department | Role: Review Chair |
| Aric Donnelly  adonnelly@anl.gov | ANL | Role: Reviewer |
| Diktys Stratakis  diktys@fnal.gov | Fermilab AD-Muon Department | Role: Reviewer |
| Meiqin Xiao  meiqin@fnal.gov | Fermilab AD-Main Injector Department | Role: Reviewer |
| Bruce Hanna  bhanna@fnal.gov | Fermilab AD-SC Linac Department | Role: Presenter |
| Matt Kufer  kufer@fnal.gov | Fermilab AD-EE Department | Role: Presenter |
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Agenda details:

## Introduction: Review Coordinator

## Beam Transfer Line Lattice: Meiqin Xiao

## Magnets: Bruce Hanna

## Power Supplies: Matt Kufer

## Closeout – Review Chair

### [Summary Statement]

### [Preliminary Findings]

### [Preliminary Comments]

### [Preliminary Recommendations]

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# Review Charge Statement

The reviewers are asked to perform a Preliminary Design Review of the Beam Transfer Line for PIP II.

Specifically, the panel is asked to answer the following charge questions:

1. Are the requirements documented, clear, complete and appropriate?
2. Is the proposed lattice design for the Beam Transfer Line likely to meet requirements? Explain any deficiencies or concerns.
3. Are the magnets designs likely to meet requirements? Explain any deficiencies or concerns.
4. Are there any features present (or absent) that threaten the intended function and performance of this design?
5. Have safety and environmental aspects been appropriately considered?
6. Have quality aspects been appropriately considered?

The intended outcome of the review:

* Collect and document findings, comments and recommendations necessary to proceed to the Final Design stage.

The following documents will be available on the Indico site approximately 1 week before the review:

* This charge document.
* Functional requirements specifications for Beam Transfer Line.
* Technical requirements specifications for Beam Transfer Line Magnets.
* Risk assessment table
* Safety by Design table.
* Design Review Report Template, to be completed by the reviewers

# Acronyms

List and define any relevant acronyms as necessary.

|  |  |
| --- | --- |
| BTLBA | Beam Transfer Line Beam Absorber |
|  |  |
|  |  |

# Reference Documents

List any relevant documents referred to in the Review Charge Statement. Include reference links or locations where the references are found. This list should include all documents with which the review committee should be familiar prior to the review.

|  |  |
| --- | --- |
| 1 | PIP-II Technical Review Plan – TC ED0008163 |
| 2 | PIP-II Quality Assurance Plan DocDB # [142](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=142) |
| 3 | PIP-II Systems Engineering Management Plan – TC ED0008164 |
| 4 | Transfer Line Beam Absorber FRS |
| 5 | BTL Dipole FRS |
| 6 | Quad FRS |
| 7 | Specialty Magnets FRS |
| 8 | Dipole TRS |
| 9 | Quad TRS |
| 10 | Specialty Magnets TRS |
| 11 | Dipole Preliminary Design |
| 12 | Quad Design |
| 13 | Large aperture quad design |
| 14 | 3-way septum design |

The review coordinator should populate this following table with the document list for this review from their SDP.

Table 1 - Document Deliverables for this review from the System Design Plan

|  |  |  |  |
| --- | --- | --- | --- |
|  | Document Title | Status  (preliminary, final, released) | Comments |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |