PIP-II LCLK Preliminary Design Review Charge

Document number: ED0012517

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 Introduction provides a brief narrative of the following:

* Overview statements that include the Review Title, summary of the Review Charge, goals and anticipated outcomes, context of the review
* Brief description of the Project area under review (descriptions of the System, Sub-system, and device or requirement under review)

# Review Agenda

This section shows the details of a typical review agenda which can be tailored to suit the review being held.

Agenda Example:

| Linac Clock (LCLK) Preliminary Design Review Agenda |
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| --- | --- |
| Location: | Zoom meeting |
| Date: | 1 September 2020 |
| Time:Indico Site: | 09:00https://indico.fnal.gov/event/24091/ |

Participants:

|  |  |  |
| --- | --- | --- |
| Greg Vogel, vogel@fnal.gov | AD/Controls | Role: Coordinator, Presenter |
| Ed Cullerton, ecullert@fnal.gov | AD/Proton Source | Role: Review Chair |
| Mike Kucera, kucera@fnal.gov | AD/Controls | Role: Reviewer |
| Aisha Ibrahim, cadornaa@fnal.gov | AD/Instrumentation | Role: Reviewer |
| Mark Austin, maustin@fnal.gov | AD/Controls | Role: Presenter, bulk of preliminary design |
|  |  |  |

Agenda details:

## Welcome: AccSys L2, Controls L3

## Introduction & PIP-II Clocks Overview: Greg Vogel

## LCLK Hardware Description: Mark Austin

## Interfaces, Cost, Schedule, QC, ESH: Greg

## Group Discussion/Q&A

##  Closeout – Review Chair

### [Summary Statement]

### [Preliminary Findings]

### [Preliminary Comments]

### [Preliminary Recommendations]

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# Review Charge Statement

*The review committee is requested to perform an independent evaluation of the Preliminary Design of the PIP-II LCLK system. The Linac Clock (LCLK) will be an RF synchronized clock system unique to the PIP-II linac itself with a distribution network to local hardware that requires it.*

The committee is asked to respond to the following questions:

1. Is the LCLK design at the preliminary design level (30-50%)?
2. Is the design consistent with system and project requirements?
3. Are the available technical drawings and documentation consistent with this level of design maturity?
4. Are the schedule, identified interfaces and risks, and procurement and quality control plans consistent with this level of design maturity?
5. Are there any impediments to initiating final design work?

# Acronyms

List and define any relevant acronyms as necessary.

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| --- | --- |
| FEM | Fermilab Engineering Manual |
| FESHM | Fermi ES&H Manual |
| TCLK | Tevatron Clock – present AD/Control System high level clock |
| ACLK | Accelerator Clock – Replacement for TCLK (in design) |
| LCLK-II | PIP-II Linac Clock  |
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# 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.

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| --- | --- |
| 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 | PIP-II IESH Management Plan DocDB # [141](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=141) |
| 5 | 121.02 SRF and Cryo Systems Design Plan DocDB # [2605](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=2605)  |
| 6 | 121.03 Accelerator Systems Design Plan DocDB # [2599](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=2599)  |
| 7 | 121.04 Linac Installation and Commissioning Design Plan DocDB # [2581](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=2581)  |
| 8 | 121.05 Accelerator Complex Upgrades Design Plan DocDB # [2593](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=2593)  |
| 9 | 121.06 Conventional Facilities Design Plan DocDB # [2587](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=2587)  |
| 10 | PIP-II Value Engineering Plan DocDB # [2830](https://pip2-docdb.fnal.gov/cgi-bin/private/ShowDocument?docid=2830)  |
| 11 |  |
| 12 |  |
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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 | Controls L3 FRS |  | Doc\_db #2390 |
| 2 | Linac Timing FRS |  | Doc\_db #4912 |
| 3 | Linac Timing TRS |  | Doc\_db #4912 |
| 4 | Master Interfaces Control Document |  | Doc\_db #2447 |
| 5 | LCLK Interface Specification Document |  | Doc\_db #4912 |
| 6 | Prevention through Design Table |  |  |
| 7 | Preliminary Failure Mode and Effect Analysis |  |  |
| 8 | Updated RLS |  | Doc\_db #4912 |
| 9 |

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| Preliminary System Architecture |
| System Block Diagram |

 |  | Doc\_db #4912 |
| 10 | Preliminary Equipment List and Specifications |  | Doc\_db #4912, #4956, #4959, #4962, #4965 |
| 11 | Preliminary Procurement Plan |  |  |
| 12 | Preliminary Validation and Testing Plan |  |  |
| 13 | Controls QC Plan |  |  |
| 14 | Preliminary Installation Plan |  |  |