DTL2 & 4 Faraday Cup PDR

Review Charge Document

Preliminary Design Review (PDR) May 14th 2018, Lund, Sweden

Purpose of the PDR

The purpose of the preliminary design review is to verify that the requirements and interfaces are well understood and documented, and that the conceptual design is well matched to these boundary conditions. Also, the PDR covers planning, risks and safety issues.

Passing the PDR is a prerequisite for expending significant resources on detailed design.

Scope of the PDR

This PDR covers the Faraday Cup systems in DTL 2 and 4. The primary focus of this review is the mechanical design. Relevant topics will be covered, including:

- FC Requirements
- Preliminary techanical design
    - Energy deposition and thermal simulatons
    - Actuator and Motion Control
- FC Electronics
    - Hardware architecture: Bias power supply, signal acquisition
    - FC electronics performance
    - EPICS integration

Furthermore, the PDR covers the contributions from ICS as it applies to these devices

- Common Hardware Infrastructure and support
- Integration support
- MPS development and Beam Interlock System

(Note that ICS may also choose to hold separate reviews of their deliverables.)

PDR Committee

The PDR committee consists of:

- Andreas Jansson, AD/BPOD, Review chair
- Thomas Shea, AD/BI (reviewer)
- Mohammad Eshraqi or delegee, AD/BP
- Marcelo Ferreira or delegee, AD/Vacuum, (reviewer)
- Edgar Sargsyan or delegee, AD/LINAC (reviewer)
- Philippe Rabis or delegee ICS/Intergration (reviewer)
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- Szandra Kovecses, ICS/MPS (reviewer)
  Kent Wigren, ESS AD/QA (reviewer)

Presenters and Observers:

- Thomas Grandsaert, AD/BI (presenter)
- Clement Derrez, AD/BI (presenter)
- Hinko Kocevar, AD/BI (presenter)
- Julen Etxeberria, ICS (presenter)
- Elena Donegani, ESS BI (observer)

Documentation

The supporting documentation will be provided to the committee during the week prior to the review, on the review Indico page (https://indico.esss.lu.se/event/1044), which also contains the agenda.

Presentations will also be available on Indico.

Committee Charge

The committee is asked to consider the following questions. Where appropriate, please organize the responses by component/system, in particular, clearly identifying those that refer exclusively to the DTL FC system.

1. Are the requirements and interfaces properly understood and documented?
2. Is the scope of the system and each component well defined?
3. Is the conceptual design likely to fulfill all requirements and respect all interfaces, and is it mature enough to begin detailed design?
4. Is the interface with ICS well understood and functionality well covered? Is the control integration of the system properly addressed?
5. Is the planning appropriate and consistent with the overall ESS plans and milestones? Are the key interface milestones with ICS properly identified?
6. Is there an acquisition strategy for major procurements appropriate for this design stage, and is the lead time for procurements and contracts properly accounted for in the planning?
7. Is the verification strategy appropriate for this stage of the project?
8. Have potential safety hazards been properly identified and considered in the design choices? If required, is there a mitigation plan?
9. Have reliability aspects been considered in the design choices at a level appropriate for this stage of design?
10. Have the project risks and opportunities been properly identified and their impact considered in the conceptual design? If required, is there a mitigation plan?
11. Were any other issues identified during the review?

The results of the review should be summarized in a short report, outlining the answers to the above review questions and whether the review is considered passed, passed with action items, or failed. The report may also provide findings, comments, and recommended actions. Actions should be clearly categorized as one of the following:

- Must be addressed before PDR is considered closed
- Must be addressed prior to the CDR
- Must be addressed at some time during the project