Concept Design Review Plan for the Power Distribution System for CTA North

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Keywords:
Power Concept study, CTA North, Review Plan

Version History:				
Ver.	Date	Comment	Distribution	Corresponding...
0.1	2017-11-30	Initial version	internal	Editor: Carla Crovari
0.3	2017-12-14	First version, for PM Approval	internal	Editor: Carla Crovari
0.5	2018-01-15	To be distributed to reviewers		

1 Scope of the Concept Design Review

For the design of the On-site Power Distribution system for the CTA North site, at the Observatorio del Roque de los Muchachos, on the island of La Palma in Spain, a Concept Design study presenting four different alternatives was developed. This Concept Design is based on the Power Infrastructure Requirements.

The goal of this **Concept Design Review**, is to collect expert feedback for:

- the Power Infrastructure requirements
- check the alternative solutions included in the Concept study, regarding if the requirements are met by the alternatives
- possible advantages or disadvantages of the alternatives proposed (regarding schedule, cost, quality, both for implementation and operations and maintenance)
- recommend one of the alternatives of the Concept study, if possible, to continue with the next level of Design.

2 Contacts for the Concept Review

- Carla Crovari, Power system design Coordinator, CTAO (ccrovari@cta-observatory.org, Ph: +49 6221 516 525)
- David Bristow, Infrastructure design Coordinator, CTAO (dbristow@cta-observatory.org, Ph: +49 6221 516 385)

3 Documentation to be submitted for the Review

- Requirement Document for Infrastructure - Power
- Conceptual Design report for Power Distribution CTA North
- Preliminary list of Interfaces
- Preliminary list of Hazardous situations and Risks

4 Decision Making Authority

The Decision Making Authority for this review is the CTA Project Manager.

5 Participants in the Review

The following groups of review participants have been defined:

1) Presenters
2) Review Panel
3) Observers

Presenters	Name	Institute/ Company
Power system design coordinator	Carla Crovari	CTAO
Concept designer	Manfred Engelmann	Fichtner Bauconsulting
Requirements Manager	Alison Mitchell/ Jim Hinton	CTAO

Review Panel	Name	Institute/ Company
Ext. reviewer 1	Dimitrios Kalaitzoglou	ESO
Ext. reviewer 2	Jorge Gmelch	IAC
Risk Manager	Cesar Ocampo	CTAO
Head of RAMS	George Pruteanu	CTAO
Chairperson of the Review Panel	**Name**	**Institute/ Company**
Infrastructure Coordinator	David Bristow	CTAO

Observers	Name	Institute/ Company
MST rep	Markus Garczarczyk	DESY
LST rep	Daniel Mazin	U. of Tokyo
Project Manager CTAO	Wolfgang Wild	CTAO

5.1. Roles of the participants

- Presenters

Will be responsible for:

  - deliver the documentation to the panel chair according to the schedule in this document
  - present the relevant information needed to comply with the objectives of the review
  - comply with the agenda
  - answer the questions and consider the feedback and recommendations that the review will give as outcome

- Review panel members

Will be responsible for:

  - Review the submitted documentation
  - Identify problems or request explanations
  - Attend the presentations
  - Give feedback, by answering the questions presented in this document before or during the Review
  - Participate in the elaboration of the review report, including recommendations; as requested and coordinated by the chairperson

- Chairperson of the Review panel members
  - ensure that the agenda is completed
  - facilitate that the participants can give their feedback
  - register the minutes and action points
  - summarize the conclusions of the review panel, to the questions in Section 8. This discussion will take place in the review meeting (Agenda in Section 9)
  - ensure that the final review report is delivered.

- Observers

  Will be able to participate in the meeting, making questions and giving feedback.

Additional observers may attend to the review with the permission of the review chairperson.

6 Location of the Review

The location will be at the facilities of MPIK in Heidelberg:
Max-Planck-Institut für Kernphysik
Saupfercheckweg 1
69117 Heidelberg
Germany

7 Review schedule

Week	Date	Activity	Responsible
W1 -W2	4-15 Dec	Approve Review Plan/ appoint chairperson	W. Wild
W3-W5	18 Dec -15 Jan	Define/ Invite reviewers	W. Wild, C.Crovari
W3-W5	18 Dec -15 Jan	Logistics: coordinate place for the Review	C.Crovari
W1-W7	4-Dec - 26 Jan	Prepare and submit documentation	C. Crovari, M.Engelmann, A.Mitchel
W8-W10	29 Jan - 16 Feb	Reviewers may submit questions to chairperson	Review Panel
W8-W10	29 Jan - 16 Feb	Presenters prepare answers and presentation	C. Crovari, M.Engelmann, A.Mitchel
W11	23 feb	1 day presentation and discussion	all participants
W13	05 mar -9 mar	Distribution of minutes, Action Items, and Final Review report	D. Bristow

8 Questions to be answered by the Panel members

1. Have the system performance requirements, concerning the power system, been defined? Are they complete?
2. Have all interface requirements been captured? Is the operational environment taken into account?
3. Have system utilization requirements been defined? Number of operating hours? Life time?
4. Has the anticipated concept of maintenance been identified?
6. Are all requirements verifiable?
7. Do system requirements all trace to upper level requirements?
8. Have RAM requirements been defined?
9. Have hazards been identified and ESH (Environment, Safety & Health) requirements been defined?
10. Has the architecture of the system been defined?
11. Do the Variants proposed in the Conceptual study: Variant 1, 2, 3 and 4 (Var 4: combination of Var 1 and 3), comply with the power system requirements?
If not, please comment which Variant and in what sense may not comply with which requirement.
13. Besides requirements, do you foresee any risk of the following, to any of the 4 Variants. Considering both implementation and operation & maintenance:

- Risk in Schedule
- Risk in Cost
- Risk in Quality
- Risk in scope

If so, please comment which Variant has what kind of Risk.

14. Based on your experience, in case you see clear advantages for any of the four Variants, please comment which one it is and which are the advantages you identify.

9 Agenda for the Review meeting

	Time	Topic of the presentation	Presenter	Purpose
9:00 -9:10	10 min	Welcome by the Chairperson	David Bristow	Welcome
9:10 - 9:20	10 min	Introduction to the Review	Carla Crovari	to present the agenda for the day and the outcome expected for this review
9:20 - 10:00	40 min	Power Requirements	Alison Mitchel/ Jim Hinton	to present the document distributed in advance, and answer the questions from the Review panel
10:00 - 11:00	60 min	Concept study for Power distribution CTA N - 4 alternatives - 1st part	Manfred Engelmann	
11:00 - 11:20		Coffee Break		
11:20 - 11:40	20 min	Concept study for Power distribution CTA N - 4 alternatives - 2nd part	Manfred Engelmann	to answer the questions from the Review panel
11:40 - 12:00	20 min	List of Interfaces identified for the Power distribution system	Carla Crovari	to present the document distributed in advance, and answer the questions from the Review panel
12:00 - 12:20	20 min	List of Risks and Hazardous situations identified	Carla Crovari	
12:20 - 14:00		Lunch		
14:00 - 16:00	120 min		Chair: David Bristow	The panel members share their answers to the questions included in the Review plan (Section 8). The purpose is to collect feedback on the requirements and interfaces, and seek input for a decision on one of the alternatives of the Concept study.

10 Appendix : Material for the Review (to be submitted by January 26th)