

CLIC

Compact Linear Collider Study

Meeting Minutes

CLIC CEIS WORKING GROUP

| | |
|-----------------------------|------------------------------------|
| Date and Time: | 2018-08-31, from 09:00 to 11:00 |
| Place: | 6/2/004 |
| Work package/Domain: | CLIC CEIS Working Group Meeting 11 |
| Document status: | IN WORK |
| Type: | Scheduled Update |

Participants

Akira Yamamoto , Alejandro Mejica , Alex Vamvakas , Alexej Grudiev , Andrea Latina , Carlo Rossi , Daniel Schulte , Davide Aguglia , Davide Bozzini , Dominique Missiaen , Edu Marin , Eliseo Perez-Duenas , Fabio Corsanego , Gerard McMonagle , Helene Mainaud , Ingo Ruehl , John Osborne , Jukka Vainola , Katy Foraz , Konrad Elsener , Lars Strom , Lucia Maricalva Brun , Marco Andreini , Markus Aicheler , Markus Widorski , Marzia Bernardini , Matthew Stuart , Matti Tiirakari , Mauro Nonis , Michal Czech , Nicolas Bellegarde , Owain Williams , Pedro Cabral , Philip Burrows , Raul Fernandez , Roberto Corsini , Sarah Aull , Seppo Uimonen , Simon Baird , Simon Marsh , Steffen Doebert , Steinar Stapnes , Stewart Russ , Walter Wuensch ,

Links to Indico: <https://indico.cern.ch/event/733530/>



Contents

| | | |
|----------|---|----------|
| 1 | AGENDA | 3 |
| 2 | PRESENTATIONS..... | 3 |
| 2.1 | INTRODUCTION & ACTION LOG | 3 |
| 2.2 | COOLING AND VENTILATION | 4 |
| 2.3 | CLIC PIP | 4 |
| 2.4 | CIVIL ENGINEERING | 4 |
| 3 | TASKS | 5 |
| 4 | NEWS..... | 6 |
| 5 | AOB..... | 7 |
| 6 | PLANNED MEETINGS..... | 7 |
| 6.1 | TENTATIVE AGENDA FOR NEXT MEETING: 22 ND JUNE 2018 | 7 |

Copyright notice:

European Organization for Nuclear Research
Organisation européenne pour la recherche nucléaire

All contents and IP contributed in this document is exclusively owned by CERN. This document or any information contained in this document must not be disclosed to any other party. CERN provides no warranties and does not accept any liability. The supplier of information contained in this document shall hold CERN free and harmless from and indemnify it against all claims and liability with regard thereto.

1 AGENDA

- 09:05 – 09:15: Meeting begins, John Osborne goes through the minutes from the last meeting.
- 09:15 – 09:30: Pedro Cabral provides an update on the CLIC Cooling and Ventilation chapter of the PiP and PBS.
- 09:35 – 09:55: Markus Aicheler gives a brief presentation of the CLIC PiP Status, Phil Burrows gives a few words on deadlines and dates and status also
- 10:00 – 10:20: Matthew Stuart provides an update on the CLIC Civil Engineering chapter of the PiP and PBS

2 PRESENTATIONS

2.1 INTRODUCTION & ACTION LOG

John Osborne opened the CLIC CEIS working group Meeting 6 at 09:05.

John Osborne went through the minutes from the last meeting in particular the outstanding actions.

Key points:

- 40w/m has been taken for the cable loads by CV this was agreed as reasonable between Davide Bozzini, Mauro Nonis and Pedro Cabral.
- Hazard Register is for the Operation phase only and will be updated until the end of September.
- Integration of smoke extraction still required parameters and limits set by safety.
- Schedule updates to be provided by M.Stuart and S.Stapnes to Marxia.
- Results still required from RP simulations.

2.2 COOLING AND VENTILATION

Pedro Cabral presented an update on the CV for the PiP and PBS.

Key points:

- CV to send PiP chapter by 31/08/2018
- Delta T set at 8 degrees for the primary circuits and secondary demineralised water circuits based on simulations by Markus Aicheler.
- Demineralised water to be taken from existing CERN facilities, if not enough a new station will be built.
- Cooling towers to be added to engineering drawings dimensions to be provided by CV, this should also be included in the costing.
- Distance between diffusers their size, supply velocity etc... still to be confirmed.
- Possibility to only have 1 redundancy AHU as having more would require a much larger alcove.
- CV to check with Alexej the total power consumption for the DB and Klystron options.
- A detailed report separate from the PiP will be written by CV after the delivery of the cost estimate.
- A paragraph required within the PiP about power and heat recovery systems.

2.3 CLIC PIP

Markus Aicheler and Phil Burrows provided a status update on the first draft of the PiP specifically for the CEIS chapter.

Key points:

- A meeting to be arranged with Phil to go through the CEIS chapter of the PiP, figures specifically need to be addressed.

2.4 CIVIL ENGINEERING

Matthew Stuart presented an update on the Civil Engineering for CLIC.

- Alexej concerned with the lack of alcoves along the length of the transfer lines, is it necessary to include alcoves here?
- Smoke extraction duct to be moved to between the extraction and supply ducts in the DB option.
- Long CE report to be produced separate from the CLIC PiP.

3 TASKS

Tasks are ordered by completion status, new and ongoing tasks first. Status is one of {New, Ongoing, On hold, Completed, Postponed or Cancelled}.

| No. | Description and Comments | Start Date | End Date | Status | Assigned |
|-----|---|---|------------------------------|--|--|
| 1 | Edit: Update of heat loads is a requirement for the entire CLIC team, heat loading from all equipment should be calculated and sent through to M.Nonis . This will allow discussions/meetings to be undertaken and an appropriate solution to be chosen from those presented by M.Nonis . Update: <u>Cable Heat Loads required</u> | 25/08/2017 Update: 09/03/2018 | 01/12/2017 13/04/2018 | Ongoing (Frozen for PiP 31/08/2018) | P.Cabral CLIC Team |
| 2 | Access requirements during beam operation in the Klystron design: it is to be determined when access to the modulators will be required, this will affect the layout and cross section of the tunnel/s. Look at examples from the ILC. Update: S.Stapnes/D.Schulte to hold a meeting with radiation team and access team. | 05/05/2017 01/12/2017 | 01/12/2017 22/01/2017 | Ongoing Ongoing | S.Doebert & C.Rossi S.Stapnes & D.Schulte O.Rey Orozco M.Widorski |
| 3 | Plan layouts of equipment that is to be provided in the 2.5km long drive beam building is to be produced | 16/06/2017 | 21/07/2017 | Closed | R.Corsini, S.Doebert, G.McMonagle & M,Stuart |
| 4 | Services within the Tunnel to be updated in a new cross-section for the DB and Klystron options | 16/07/2017 | 21/07/2017 | Ongoing | M.Stuart M.Nonis & S.Marsh |
| 5 | Hazard Register and procedure guidelines on how to populate the register to be produced by safety | 21/07/2017 | 30/09/2018 | Ongoing | S.Marsh O.Williams |
| 6 | Safety: propagation of smoke/gas cloud against escape time from the tunnel to be studied by safety. – Minimum fire design requirements to be provided instead of a full study. | 25/08/2017 | 22/01/2017 | Closed | S.Marsh |

| | | | | | |
|----|---|------------|------------|---------|--------------------------------------|
| 7 | Study to be undertaken for the Schedule for the surface buildings and installations of equipment within the tunnels – electrical and CV. | 01/12/2017 | 09/03/2017 | Ongoing | M.Stuart M.Bernardini |
| 8 | Integration of the CV solution, beam lines and caverns. | 06/04/2018 | 18/05/2018 | Ongoing | M.Stuart, D.Schulte, P.Cabral |
| 9 | Access between the two sides of the Klystron tunnel needs to be established and understood. Markus to provide update at CEIS on 05/10/2018 | 25/05/2018 | 26/06/2018 | Ongoing | M.Stuart, M.Czech, F.Corsanego |
| 10 | CV to provide all required buildings to CE so drawings can be updated | 31/08/2018 | 30/09/2018 | New | P.Cabral M.Stuart |
| 11 | Meeting to be held with P.Burrows to go through required changes to CEIS chapter of the PiP and changes to be made | 31/08/2018 | 31/10/2018 | New | M.Stuart P.Burrows J.Osborne |
| 12 | Long reports to be provided by CV and CE | 31/08/2018 | 31/12/2018 | New | M.Stuart P.Cabral |

4 NEWS

PiP and Cost Update

| Chapter | Discipline | Pages | Comments | Responsible person | PiP Status | Cost Status |
|-------------|----------------------------|-------|-------------------------------|--------------------------|--------------------------|------------------|
| CEIS | | | | | | |
| | Civ. Eng | 5/5 | Pages increased to 5 for CE | John Osborne/Matt Stuart | First draft completed 😊😊 | First Estimate 😊 |
| | Electricity supply | 5/3 | | Davide Bozzini | First draft completed 😊😊 | First Estimate 😊 |
| | CV | 4/3 | | Mauro Nonis | First draft completed 😊😊 | Not Received ☹️ |
| | Transport and Installation | 4/3 | | Ingo Ruehl/Michael Czech | First draft completed 😊😊 | First Estimate 😊 |
| | Safety systems | 4/3 | incl. environment and access | Simon Marsh | First draft completed 😊😊 | Not Received ☹️ |
| | Radiation studies | 3/3 | | Markus Widorski | First draft completed 😊😊 | N/A |
| | Cryo | 0/3 | in case of SC solenoid, check | Dimitri Delikaris | NA | N/A |

5 AOB

- RP to present at the next CEIS working group meeting.

6 PLANNED MEETINGS

This section contains planned meetings.

| Title | Date | Location | Convener |
|---|-------------------------------|----------|-----------|
| CLIC Civil Engineering & Infrastructure Working Group Meeting | 05 th October 2018 | 6/2-004 | J.Osborne |
| CLIC Civil Engineering & Infrastructure Working Group Meeting | 09th November 2018 | 6/2-004 | J.Osborne |
| CLIC Civil Engineering & Infrastructure Working Group Meeting | 14th December 2018 | 6/2-004 | J.Osborne |

6.1 TENTATIVE AGENDA FOR NEXT MEETING: 22ND JUNE 2018

Note: Formal agenda to follow once finalised.

- *RP to present results from simulations*
- *Civil Engineering to give an update*