

# Minutes of the meeting CLIC Civil Engineering and Services (CES)

## No.8 – 10 December 2008

Present: J.Inigo-Golfin (TS/CV), C.Martel (TS/CV), J.Osborne (TS/CE), C.Hauviller (TS/HDO), G.Riddone (AB/RF), C.Jach (TS/EL)

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### 1. APPROVAL OF MINUTES OF PREVIOUS MEETING – 12 NOVEMBER 2008

The minutes of the previous meeting were approved without comment.

### 2. OUTSTANDING ACTIONS FROM PREVIOUS MEETINGS :

- The CLIC project needs to have a new co-ordinate system developed which refers back to the CERN co-ordinate system (CCS). (*Action H.Mainaud Durand to make a proposal*)
- The heat dissipation levels received from the CLIC experts seem very high, if compared to similar machines. (*Action H. Braun to contact CLIC experts and TS/CV to better understand the heat loads*). *C.Martel will provide updated figures on the expected and actual heat loads measured in LHC. Especially where we have warm magnets in the transfer tunnels.*

### 3. CLIC COOLING REQUIRMENTS

The module working group Chairperson, Germana Riddone, presented the latest news on the cooling studies. Several issues were discussed and questions raised :

- Tin needs to be defined. Is it the temperature at the entrance of the pipe around the IP or the temperature of the pipe all along the tunnel?
- Currently Tin is specified to be +/-0.1C. This seems stringent, could this be relaxed ?
- Why is Tin at 27C (used to be 25C at the CDC November 25)?
- What is an acceptable pressure in the pipes ?
- Reference on the delta T of 10K on a standard module does not seem correct. Clarification required.

- A study of using heat pipes is being carried out as an alternative module cooling method. Initial results from the study are due in Spring 09. (study being carried out by WUT).
- The heat loads dissipated from the cabling needs to be estimated (*Action C.Jach*).

Germana committed to report back on these open questions at the CES meeting in February 2009. Subsequently, a new tunnel cross section with updated pipe and ventilation duct dimensions will be produced.

#### 4. AOB

Nothing to report.

#### 5. NEXT MEETINGS

The next meeting of the CES is scheduled on **Wednesday 14 January at 14:30** in conference room **112-4-C17**. The draft agenda is :

- Draft tunnel cross section update
- ILC transport studies
- Joint Safety document for ILC/CLIC