HL-LHC Collimators:
Design, Engineering and Prototyping #27
Minutes

Thursday, 29th November 2018

376-1-020

Attendees: C. Accettura (CA), A. Bertarelli (AB), E. Berthome (EB), F. Carra (FC), L. Gentini (LG), J. Guardia (JG), G. Gobbi (GG), M. Pasquali (MP).

AGENDA:

- Approval of minutes from previous meeting and review of action list
- Updates on Brazing Taskforce (E. Rigutto)
- HRMT-36 dismounting procedure (E. Berthome)
- AOB

1) *Approval of minutes from previous meeting and review of action list*

Minutes reviewed and approved.

2) *Updates on Brazing Taskforce*

ER presents a recap of the activities carried out so far by the brazing taskforce: all the different phases defining the designed brazing procedure are described. Ultrasounds scans of a produced brazed test sample show a non-perfect bonding of the copper-nickel pipes to the Glidcop substrate due to non-perfect planarity of the pipes (0.07-0.08 mm flatness of the common zone of the pipe surfaces). However, no blisters are observed, and in general the adherence is good. AB suggests revising the design of the pipe-substrate interface to ameliorate adherence. The brazing equipment is currently being moved from building 102 to the new facility hosted in building 107: the installation of the new bath for copper plating is ongoing, while the new bath for nickel plating is scheduled to be installed by beginning 2019. Once ready, a new brazed sample will be produced to test the effectiveness of the new baths. FC suggested to coat also additional Glidcop samples, to be inserted in the furnace during the same brazing treatment, adding more statistics in terms of possible blister formation. A whole jaw of a TCSPM collimator is then foreseen to be brazed resorting to the new equipment by end 2019. The two jaws of the ACS, the adaptive version of TCSPM designed in partnership with Huddersfield university are also foreseen to be brazed, later, in the new facility: AB asks LG to check together with Tom Furness from Huddersfield university ACS design compliance to CERN's standards (**action L. Gentini**).

3) *HRTM-36 dismounting procedure*

EB presents a preliminary study on the dismounting of the HRTM-36 setup: the experiment is currently located at building 954 and will likely be moved to building 867 for opening operations, if the bunker is available. Another possibility is b. 109, but it is better to resort to it only in case of needs of machining (which is not the case in HRMT-36). Given the current and past dose rate measures, the dismounting of the setup is deemed to be possible from end January on. AB suggests to prepare by end January 2019 the detailed plan of dismounting operations required by RP to proceed with the disassembling of the experiment (**action E. Berthome and L. Gentini**). FC states that it would be important to pin down a meeting with RP before the end of the year showing EB presentation so to get useful indication on how to proceed (**action F. Carra**).

AOB:

- AB LG and Luca Dassa (EN-MME-EDM) have being discussing offline about the preparation of a safety document to qualify TCLD cooling circuit against relevant standards. AB suggests working on a similar document to define the design requirements which must be met to qualify all collimators cooling circuits.
- FC asked ER about the status of the TCAPM preparation. ER replied that, since the construction time is fast and the installation very far in time, the preparation starting is planned for end of January. FC reminded that we should prepare the assembling procedure, and the action is on EB and LG. LG said that he will take care of this. In principle after that, as also a calculation note prepared by MP is available, if the WP5 management requires it, it should be pretty easy to prepare an engineering specification for the TCAPM.

ACTIONS

- Check together with Tom Furness from Huddersfield university ACS design compliance to CERN's standards (**action L. Gentini**);
- Prepare by end January 2019 the detailed plan of dismounting operations required by RP to proceed with the disassembling of the experiment (**action E. Berthome and L. Gentini**);
- Set a meeting with RP possibly before the end of the year to discuss about HRMT-36 dismounting (**action F. Carra**);