

## HiRadMat meeting on 20<sup>th</sup> January 2009

By Adriana Rossi

Present: Malika Meddahi, Christoph Hessler, Alessandro Dallochio, Ralph Assmann, Adriana Rossi, Juan Blanco Sancho, Helmut Vincke, Ilias Efthymiopoulos, Ans Pardons, Michael Lazzaroni

### **Beam test stand for materials, collimators and absorbers. – Preparation for the presentation to the management of the accelerator sector on Monday, January 26<sup>th</sup>, 17h00.**

There will be four presentations for the meeting to the management, no longer 15 min each.

1. An introduction to the Beam Line to the HiRadMat Test Facility, and overview on budget costs, by Ralph
2. Overview of the line (3 options) from the SPS to the target, with budget estimates, by Christoph
3. An explanation why the T9 solution is preferred, with a description of the experimental area and budget estimate, by Ilias.
4. Survey of radiation levels in the tunnel before dismantling, and estimates of residual dose rate during the installation works and after HIRADMAT beam operations, by Helmut.

1. Ralph's presentation will be circulated by Monday morning for people to comment.
2. Christoph showed 3 possible locations (T1, TT61 and T9) where to place the line after branching off from the T1 2 transfer line. He described the design requirements; to remark the wide range of beam size, and no need of additional new magnets. He then presented a somewhat detailed budget estimate for each of the options (all more or less equivalent and around 2MCHF).

It was commented that Ralph or Christoph should explain why other locations in the LHC transfer lines are to be excluded (radiation levels, etc.) and agreed that Ralph will do this in his introduction.

Malika also remarked that at this stage the study is preliminary and that a detailed study will be carried out once the project is approved and location finalized.

3. Ilias made an introduction of the HiRadMat Exp. AreaWG. He then showed why the WANF/T9 solution is to be preferred:
  - a. No interference with T1 line.
  - b. By replacing the T9 target with a dump and adapting the shielding (as for the CNGS hadron stop), therefore placing the experimental area (up to 2 collimators) upstream T9, the radiation dose to personnel will be reduced (drawings and pictures). A condition though will be to clean the tunnel downstream.

He also showed the other options around the TCC6 area but then said that he will concentrate on the T9 option. He presented a first approximation planning and agreed to give a budget estimate (1.3MCHF?) by Thursday 22th January.

Ralph commented that the total length of the experimental area was fixed by the RP and BT groups and we must stick to it.

Helmut stated that the radiation back streaming from the experimental collimators to BA7 should be checked. If this is found to be a problem, a solution for an adequate shielding has to be provided.

Malika remarked that the solution of placing the collimators upstream T9 could detriment the tuning ability. This will have to be checked.

It was suggested to Ilias not to show, at this stage, the issues to be addressed.

Ans said that there will be a crane, but that she is still waiting for the detail costs.

4. Helmut presented the radiation levels in the WANF/T9 tunnel
  - a. With the present installation, the measured data show a peak  $\sim 900$  uSv/h at the beam entrance window of the T9 target station, reduced to 300uSv/h by the marble shielding. A similar value (300uSv/h) is expected to be found around the same location after dismantling (empty tunnel).
  - b. The collective dose received during the dismantling in 1992 was of 200 mSv. Basing on these data and comparison with the current layout, a collective dose of  $< 100$  mSv is to be expected for the dismantling to be carried out. It should be noted that this value is very conservative because does not take into account that the T9 target station could be left in place and better shielded.

It was noted that the dose rate levels introduced by HiRadMat operations will be higher than at present, which should be a good argument to defend the choice of the WANF/T9 location.

Ralph asked if it will be possible to stage expenditure. Both Christoph/Malika and Ilias will look into it and give an answer before the 26<sup>th</sup> meeting. It does not seem to be possible for the portion of the transfer line. Ilias said that it may be possible to have basic ventilation to start with and a later upgrade with humidity control.

END OF THE MEETING