

Collimator Design Meetings

Minutes of the meeting 64 (07/04/2005)

Present: Aberle, Bertarelli, R. Chamizo, Kadi, Mayer, Perret, Principe

NEW COLLIMATOR MEETINGS SCHEDULE

1. It is agreed that Design meetings will be held in future on every second Thursday.
2. On the alternate Thursday there will be Collimator Production Meetings, chaired by Oliver, assisted by Rocio Chamizo.

DESIGN FOR SPECIAL COLLIMATORS (2IN1)

1. Engineering specification will be released next week by Ralph.

TEST PROGRAM FOR COLLIMATOR PROTOTYPES

1. All pieces for the tests are manufactured and ready (including bloc beams). If necessary one beam might be re-machined to improve surface flatness. Blocs will be mounted by Patrice.
2. P2 (TT40) will be opened and checked by Patrice after P3 assembling.
3. A draft list of tests will be released by Oliver in two weeks.
4. An assembling and measurement procedure must also be prepared.

WATER DISTRIBUTION SYSTEM

1. Attached is the mail Ralph sent on April, 4th and that seems to represent a good starting point for TS/CV and SC/RP:

"Dear Rosario,

I have seen a draft of the ECR that you are preparing. Of course, I cannot comment on the detailed radiological requirements for the water: this is the domain of Stefan and Markus. I would, however, like to take the opportunity to remind everybody of the present baseline for collimators, that we had discussed half a year ago and which everybody seemed to be happy with at that time. This is my basic understanding though we never worked out the details:

- 1) A MANUAL valve is located at the water entry and exit of each collimator.
- 2) At the entry valve we have a pressurized air-bottle (or a flange for quick connection of such a bottle) that can blow air into the circuit.
- 3) At the exit valve we have an over-pressure valve, possibly with a small retention reservoir.
- 4) In case of a bake-out we quickly close the entry valve, blow the cooling water out of the collimator and close the exit valve.
- 5) Any residual water in the collimator will be exiting through the over-pressure valve during bake-out.
- 6) CV is processing the cooling water to remove the limited amount of air that we injected.
- 7) Similar procedures could be applied to magnets!?

This procedure has the following advantages:

- 1) Manual procedure with maximum reliability. Valves can be located at easily accessible locations: very quick interventions.

2) Beamline elements can be isolated from the cooling circuit before an intervention or bake-out: Minimizes amount of water we have to worry about.

3) We avoid release of water to the maximum extent: Water stays inside the cooling circuit and small residual amount of water is captured locally.

4) We avoid to open cooling circuit to normal air but instead inject "clean air" from pressurized bottles.

Clearly, this procedure must be optimized and worked out in technical detail. I also realize that this procedure for bake-out and intervention does not solve the problem of (infrequent) water leaks to the tunnel. However, I think that our original solution got somehow out of focus and I do not understand why.

Manfred Mayer is ready to organize a discussion on this in a collimator design meeting next Thursday afternoon. I will be absent but I think it would be very useful for us to understand the possible problems with the approach as sketched above.

In case that we must pursue a different approach I think that we would require careful discussions in order to understand the implications for a collimator bake-out, as it could be required for many collimators one to several times per year. In my opinion these discussion would best precede the issuing of an ECR. If it is helpful we could organize a Collimation WG on this in two weeks. What do you think?

Many thanks for your help.

Best regards,

Ralph"

2. This proposal has many advantages, but also a drawback: manual human intervention has to be foreseen on each collimator at each bake-out, so implying an exposure to significant dose-rates.
3. An ad-hoc meeting on this issue will be held on Monday 11/4.

DESIGN OF SUPPORTS

1. L. Favre will take care of TCDI supports; F. Roqua of TCS/TCP fixed part (outer support) and Roger of TCS mobile part (inner support).
2. The end of April deadline is confirmed.

AOB

1. A technical specification for the additional absorbers required by Yacine in his job request has to be prepared (**action** Yacine)
2. Position of TCDI in TI8 is frozen. No news for TI2 positions.

ACTION LIST to be followed up:

Play between motor spindle and jaw	#34	Roger
Updated calculation on beam optics during transients	#49	Ralph
Collimator installation and handling tools (vrs. 6.5)	#56	Keith
Manufacturing of 3 rd Collimator prototype	#60	Oliver
Engineering specification for 2in1 collimators	#61	Oliver, Ralph
Test program for Collimator prototypes	#61	Oliver