

# MICE RF power meeting

14<sup>th</sup> Mar 11 : 11:30

**Present :-** Alan Grant, Andy Moss, Brian Martlew , Tim Hayler, Ken Long, Chris White

**Aplologies :-** Eric Montesinos

## 0. Actions

Action Number	Description	Status
24/1/11 :1	CW , Order capacitors – <i>Order now in system. Chris to check order has gone through SSC and is with supplier.</i>	Ongoing
7/2/11 :2	AG, Discuss with Willie when is best time to commence build. – <i>components delivered work scheduled to commence 7<sup>th</sup> March On hold until strip down of current TH116 is complete.</i>	Ongoing
28/2/11 :1	AG, organise mech effort to commence strip down of TH116. May require assistance from Willie. <i>Scheduled to commence 14<sup>th</sup> March.</i>	Ongoing
28/2/11 :2	AG, to contact Mike Courthold for magnetic field plots for RF system. <i>Emailed Mike no response. KL to follow up.</i>	Ongoing
28/2/11 :3	AG, to consider re-routing of MCWP & CCL in the layout of the RF system. <i>Willie sent survey details of existing pipe work.</i>	Ongoing
28/2/11 :5	AM, to begin to draft spec for RF system procurement.	Ongoing
7/3/11 :1	AM, to investigate timescales for supplier repair or availability of replacement of Thylatron. <i>Final test this week.</i>	Ongoing
7/3/11 :2	TH, to discuss layout with Craig McWaters initially for PPS implications. <i>Layout as far as PPS is ok.</i>	Complete
7/3/11 :3	TH, to investigate date for floor mods. <i>Work will be completed by 1<sup>st</sup> April</i>	Complete
7/3/11 :4	AG/AM, to produce list of components and spec for initial orders for RF system.	Ongoing
7/3/11 :5	KL, to request RF design review through Andy Nichols with Technical Board in April and other all interested parties.	Ongoing

## 1. Progress on commissioning of TH116 amplifier:AM, CW, SA

One final test to perform on the Thylatron, this will be completed this week.

Strip down of TH116 will begin Monday 14<sup>th</sup> March.

## 2. Development of layout in the MICE Hall: TH, AM, AG, KL

### 2.1 Layout and design considerations

Modelled in extra two phase shifters for additional phase control to cavities. This has meant that access to one of the 4616 pre amps on the mezzanine is very tight.

All trombone tuners are in position under the false floor and integer length for each run of coax from the hybrid complete, accuracy of ~ 1-2mm.

At the collaboration mtg (CM29) Mike Courthold stated that the shield wall acts as a magnet for the field and that we should consider this when designing the RF system as we may require additional shielding. Mike said he can run the analysis for the North wall area.

Altronic rep was at Daresbury on Friday 11<sup>th</sup> to discuss our design layout and our requirements. He will go away and provide some budget quotes and models for the dummy loads and the cooling plant.

## ***2.2 Issues related to installation in the MICE Hall***

Tim requested that the cooling plant be shown on drg so as to see how this fits into the services layout.

There are currently 4 large pipes running under the false floor and these are the main Cooling Water Pipe System (MCWP) and Coolant Compressor Line (CCL). Survey info of pipe position now available supplied by Willie. These will have to be re-routed at some point, but Willie is reasonably relaxed for now.

## ***2.3 Floor modifications and amplifier services***

Nothing Further to report

Structural engineer has looked into the floor loading issue in the area of the amplifiers. Additional support drg are completed and are out for manufacture. All mods concerning the floor, checker plates /supports should be completed by end March.

Joiners at DL are making a model of the CERN amplifier to help position services prior to final installation. Model should be completed by end March.

## **3. Refurbishment of TH116 amplifier: WS**

To be rescheduled once the current TH116 has been stripped down for repair.

## **4. TIARA: KL, EM**

Eric will visit DL on Wed 30<sup>th</sup> March and RAL on Thursday 31<sup>st</sup> March. Agreed to have preliminary design review of RF system during this visit.

## **5. Next meeting**

Phone mtg 21<sup>st</sup> Mar 11:11:30

## **6. AOB**

Design Review, what we need to review/agree following points:-

1. Review and agree current layout i.e 8 phase shifters 2 for each amplifier for independent phase control for each cavity.
2. Review operational requirements. Do we want to get 8MW into the cavities, if so when?
3. Agree using 4" coax from hybrids onwards
4. Agree using flexible coax to mate up with cavity to take account of small mis-alignment
5. Agree phase shifter size
6. Agree trombone tuner travel for fine tuning – current length  $\pm$  5mm
7. Finalize cooling requirements and position of cooling plant.
8. Agree position of 4616 pre amplifiers on mezzanine floor
9. Agree safety & access egress on mezzanine floor.
10. Agree principle of coupling the flexible coax through holes in floor plate, for ease of removal of cavity.
11. Review shielding requirements in light of the magnet field plots.
12. Shine path through cavities through concertina doors needs shielding (Infrastructure wp)