ACS QRL Meeting

Helium Supply to RF Modules in UX45

8th July 2003

Present:

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• The proposal as understood by RF, agreed with Cryogenics and QRL responsibles in September 2001, (see write-up of meeting) and drawing <u>LHCACSGA0006</u> was that the RF modules in UX45 would be supplied by flexible co-axial lines coming from service modules on the QRL

• The Cryo group now judge that losses in flexible lines, now estimated to be of the order of 2-3 W/metre, are unacceptable and a rigid line must be used. For an estimated total length 60 m the losses would be above 100 W, for all modules. A loss budget of 500 W has been imposed over the 3.5 km length.

• The solution now proposed and presented to the recent integration WG meeting of 2^{nd} July 2003, is a rigid line mounted directly above the modules, with short flexible connections to the modules.

• The rigid line, positioned directly above the modules in this first proposal, considerably reduces any free area above the cavity and runs close to the power couplers. Since not all cable, pipes and accessories appear on the integration diagram detailed study would be required to establish whether or not there is there is incompatibility.

• Other serious difficulties arise:

- Access to waveguides, already very restricted, (particularly near the RBs) is further hampered. Installation and correct alignment of the waveguide system is already a major concern.
- The access problem also applies to equipment on top and at the back of the modules. LEP experience has shown that during operation access to all parts of the module is needed, interventions may be frequent (e.g. to change sensors) and regular inspection is needed (e.g. RF connectors).

• A solution, with the line moved away from the modules and into the free area above the transport area, avoids the above problems. Space must however be left, by shortening the rigid line if necessary, to allow a module to be lifted in or out. This would also mean that all modules would be passed through the same part of the roof. This solution can now be studied by the IWG.

• The RF group regrets that there was no direct consultation between the AT-ACR and the AB-RF group on the choice of line and its integration issues before presentation of a definitive proposal to the IWG. Such consultation would have been highly appreciated and would have avoided wasted effort in drawing and in the integration studies.

• Our link person with Cryo is Luigi Serio, however for QRL matters we should consult directly with Germana Riddone

E. Ciapala 10th July 2003