Minutes of the Meeting On Design Issues for Hall A Cryotarget

March 8, 1996, 9:00-11:00 am

Prepared by *J. P. Chen*

Present: B. Beise, P. Brindza, L. Cardman, J. P. Chen, J. Domingo, H. Gao, J. Mitchell, B. Schneider.

- J. P. Chen mentioned the change of the boundary conditions from Hall C to Hall A: No Rotation and about 12 inches more vertical travel.

- P. Brindza presented the main features of the suggested conceptual design of the Hall A cryotarget support and alignment structure.

  Consensus was reached after discussion that the suggested conceptual design is sound. Following are the details of the suggested design and discussion:

  1) To have major adjustment and alignment in X (horizontal), Z (along beam) and θ (the rotation wrt vertical) on the top plate.

     B. Schneider pointed out that to align with the solid target, vertical tilting adjustment may be needed.

     Discussed options for the vertical tilting adjustment.

     It was pointed out that it may be easier to only align the top plate horizontally very well and to have adjustment in solid target to align with cryotarget.

     Scattering chamber spool piece could be designed at the end to accommodate the height and to provide a horizontal surface for mounting the target.

  2) To have an independent elevator support and alignment frame.

     Convinced that it is a good feature.

  3) To have secondary X, Z, θ adjustment at the cryo-can elevator interface with ball joints.

     L. Cardman suggested to have the interfaces as far apart as possible to have long lever arm.

  4) To have either a sliding seal or bellows to connect the cryo-can to the top plate.

     Both B.Schneider and L. Cardman had concern of radiation damage of the o-ring for the sliding seal. Decision was made to use bellows.

  5) To have cell final adjustment by attaching cell blocks to the pipe while using small bellows on the piping of the heat exchangers.

     Several people expressed desire to have flanges near the cell block to make it

easier to change cell blocks.

Some discussion on using aluminum flange on stainless steel flange to eliminate BiBraze joint. Concern was raised if it could be leak tight with thermal contraction.

Alternate is to use stainless steel conflats further up the pipe.

6) To have gas panel with reduced size and with ballast system.

Discussed if a deuterium recovery system was more cost-effective. Need to have a cost estimate for a deuterium recovery system.

7) Options for helium cooling: parallel or series with added helium loop bypass.

Since the current Hall C cooling works well, keeping series and adding a helium loop bypass seems reasonable.

8) To have a Helium reservoir for standby during reefer outage.

Had some discussion, but no decision was made on that.

We also had some discussions on U-tubes, gas line and cable support system, and cell making process.