

to RSC file:

BROOKHAVEN NATIONAL LABORATORY  
RHIC PROJECT  
RADIATION SAFETY COMMITTEE  
RHIC SUB - COMMITTEE

To: R.K. Reece  
From: A. Etkin   
Date: April 4, 1995  
Subject: Meeting February 13, 1995

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A meeting of the RHIC subcommittee of the RHIC/AGS Radiation Safety Committee was held on February 13, 1995. Attending were D. Beavis, A. Etkin, S. Musolino, M. O'Brien, K. Reece and A. Stevens.

The subcommittee did a preliminary review of the shielding for the 1008 area. 1008 has a partially shielded intersection region, an attached assembly area and two rooms one on each side of the intersection region. Shield walls will be required between the intersection and assembly areas and on the ring inside wall of the rooms. A counting house for the experiment is planned to be built adjacent to the north room. There will be one or two  $\mu$  detector walls that will prevent access to the appropriate room from the intersection region. There is a life safety requirement that there be an exit from the tunnel near to the intersection region. In attachment 1 [RHIC/DET Note 13 - Estimated Shielding Requirements for the PHENIX Detector, A. J. Stevens] an analysis of a proposed shielding approach that could provide an adequate level of protection is presented. This approach provides an exit from the tunnel through a labyrinth leading into the counting house.

The shielding requirements for the wall between the intersection region and the assembly hall are dependent upon the presence or absence of the second  $\mu$  detector wall. For 4 times day one luminosity 6 ft. light concrete for one or 5 ft. light concrete for two. These calculations were done for a simplistic wall which will have to be modified to provide access to the intersection region and to be mechanically stable. When a more fully engineered wall is proposed it will require further review.

Shielding the counting house is complicated by the need for an exit from the tunnel in that area. It is possible to provide a labyrinth through the shield that is acceptable. It is suggested that if this approach is to be used that the effect of an additional short leg in front of the entrance shown in the attachment be studied and reviewed.

A **high priority** recommendation is to perform an engineering evaluation of providing a tunnel exit directly into the intersection region by cutting a doorway through the wall of the intersection hall as an alternate to the labyrinth into the counting house.

It was also noted that there is a need for an exit from the south room [assuming two  $\mu$  detector walls] through the shielding that will be built for the ring inside wall. It suggested that a solution similar to that for the north room be used and that it be incorporated into the initial construction independent of the status of the second  $\mu$  detector wall.

**XC:**

File [with att.], S. H. Aronson, D. R. Beavis, P. J. Kroon, S. V. Musolino, M. O'Brien, S. Ozaki, A. Stevens

**attachment:**

RHIC/DET Note 13 - Estimated Shielding Requirements for the PHENIX Detector, A. J. Stevens - File Only