K. Reece

Minutes of Meeting: Radiation Safety Committee

Date: Wednesday 12 June 1996

Present: D. Beavis, W. Christie, A. Etkin, W. Glenn, Brandt Johnson, E. Lessard, A. McGeary, S. Musolino, K. Reece, T. Shea, A. Stevens, R. Thern.

Subject: Analysis of "cracks" in RHIC Interaction Regions - A. Stevens.

The Radiation Safety Committee is responsible for reviewing and approving the ***method(s)*** used to calculate the attenuation of prompt radiation through cracks in shielding. Since the shield wall at the Interaction Regions (IR's) of RHIC will be built with stacked block, there *will be cracks* in the design. Design of the sidewall shielding will be unique for each IR and therefore must also be reviewed for every by the RSC for every location. Dose external to the shield wall will be estimated from calculation for each of these instances (A. Stevens).

From the presentation of A. Stevens (attachment 1), several "rules for shielding analysis where cracks exists" were proposed and **accepted by the RSC**, (attachment 2). If a crack exists greater than the maximum allowed width, it must be shimmed, filled or blocked. Techniques must be developed to standardize the documentation of "crack width" and filling of these cracks. When a shield wall is built, the location of each block should be documented so the wall can be put together in the same configuration each time. Also, the wall (and specific cracks if necessary) should be photographed during construction and when completed. Alan also provided a detailed paper on the "Approximation for Low Energy Dose Through Cracks in Shielding Walls" (attached).

An unanswered question: Would it be possible and practical to empirically measure (known source) the attenuation through cracks for a given geometry ? It is probable that variations in source/meter geometries could lead to great variation in the result.

cc: RSC file (w/attachments)