

Minutes of Radiation Safety Sub-Committee of January 31, 2002

**The Proposed Extension of the RHIC Beam Dump Liners**

Present: D. Beavis, J.W. Glenn, R. Karol, E. Lessard, D. Paquette, A. Stevens, and M. Van Essendelft

Alan Stevens has re-examined the calculations for soil activation in the vicinity of the RHIC beam dumps (see attachment 1). The present location and size of the liners was based on a beam loss scenario and CASIM. CASIM underestimates the neutron fluence in the backward direction. A compensation factor (at the time of design) was applied to the calculation to account for the low fluence. New calculations suggest that the liners should be extended in the backward direction.

**The committee approved the liner extension.**

The following comments and requirements are noted:

The beam loss scenario is very conservative and is not expected to be reached. However, the committee is basing its recommendation of the established beam loss scenario.

The proposed extension also takes into account the new SBMS on ground water. The proposed extension will take into account the new standard and also cover the abort kickers. High losses were detected on the abort kickers for the early part of the Au run. The losses on the kickers were substantially reduced after concern for the high losses was expressed. The kickers represent a unique aperture for the machine. It was considered a precaution to incorporate them into the liner extension.

A temporary liner was established during the run. This liner can be removed without special precautions. Measurements for Na<sup>22</sup> in the soil were below the minimum detectable level.

The engineer has discussed with D. Paquette the precautions that will be taken to protect the monitoring well in the area. At present, it is expected that this well will be sufficient to monitor ground water.

**(Ck-RHIC-fy03-294)** Installed liner extensions for the RHIC beam dumps.

**(CK-RHIC-FY03-295)** Signed drawings of the extensions of the RHIC beam dump liners.

**(CK-RHIC-FY03-296)** The committee has requested that D. Paquette examine the water table depth in this area to ensure that it is not an issue.

**(CK-RHIC-FY03-297)** The engineer will ensure that no pipes are under the liner extensions, which could potentially flush radioactive products from the soil.

**(CK-RHIC-FY03-298)** The committee requested that A. Stevens investigate whether any other location at RHIC might require re-evaluation for neutrons in the backward direction.

Attachments: (file copy only)

1) Memorandum A. Stevens to E. Lessard, 10/11/01, "RHIC Beam Dump Liners"

CC: RSC            A. Javidfar    P. Pile  
Present           C. Pearson    T. Roser