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for the U.S. Department of Energy

Memo

date: *October 14, 2008*

to: *P. Ingrassia*

from: *D. Beavis & R. Karol*

subject: **Allowed Dumping of BTA Beam for Testing**

Ray and I have discussed the issues related to dumping the BTA beam into a block of iron approximately 12 inches on a side, which will be located in the proton beam when BtA magnet DH5 is off. These studies are approved with a limit of 8×10^{14} protons, which corresponds to 15% of the BNL leachate limit of 5% of the DWS for Na-22 or H-3. If additional beam is required an additional allotment of protons may be requested.

K. Yip has conducted an MCNPX calculation to check for the potential of soil activation at 90 degrees and in the forward direction. The forward direction is 10,000 times lower so the limiting case is established by the adjacent outside wall. The inside wall is shielded by the L20 ring magnet. Kin concluded that the BNL limit corresponds to 5.3×10^{15} protons.

The personnel conducting the study should use the routine means at their disposal to ensure that the beam strikes the block of iron and the delivered beam is monitored properly. The integrated beam delivered should be reported to Ray and me.

There is a removable soil sample in place for the L20 septum. We did not deem it necessary to add another removable soil sample for this test.

The amount of beam to this temporary dump will be similar to that delivered to NSRL. As a precaution an RCT should conduct surveys and check for contamination to reduce the risk of any unforeseen problems before releasing the area for routine work.

Reference

[K. Yip to D. Beavis, e-mail of Oct 14, 2008.](#)

CC: K. Brown
P. Sampson
RSC AGS File
RSC