

The proposed Booster Dump at B6

Present: D. Beavis, P. Lang, B. Hoode, D. Paquette, M. Allocco, E. Lessard, A. Stevens, K. Gardner, A. McNerney, and A. Javidfar

The installation of the BAF extraction system will require a new beam dump for the Booster. A beam dump has been designed for the B6 straight section.

Alan Stevens presented an overview of calculations (attachment 1) for the new beam dump, which addressed soil activation (attachment 2), skyshine (attachment 3), and dose out a nearby vent (attachment 4). The committee approved the design of the proposed soil cap. The berm over the beam dump will be increased to 18 feet of coverage to reduce skyshine. A. Stevens' calculations demonstrate that the nearby vent does not present a dose rate problem.

The committee would like several items addressed and placed on a check-off list:

(CK-Booster-FY2003-283)

D. Paquette will provide the committee with information on the fluctuations of the water table. The concern is whether the water table can rise high enough to flush activated particles from the soil and into the water table. This does not appear to be a concern (see attachment 2).

(CK-Booster-FY2003-284)

Additional shielding on the Booster floor beneath the beam dump should be considered to increase the safety of margin with the water table.

(CK-Booster-FY2002-285)

The sanitary line under the proposed soil cap must be moved or lined.

(CK-Booster-FY2002-286)

The section of the sanitary line by the old beam dump must be assessed.

(CK-Booster-FY2003-287)

Access to the Linac tunnel spur (for heavy ion transport) near the booster must be prevented until it is determined that heavy ions into the new beam dump location does not create unacceptable radiation levels in this tunnel section.

(CK-Booster-FY2003-288)

Approved as-built drawings of the soil cap must be completed before operations.

(CK-Booster-FY2003-289)

This cap must be added to the soil cap inspection procedure.

(CK-Booster-FY2003-290)

The soil coverage over the B6 beam dump has been increased to 18 feet.

(CK-Booster-FY2003-291)

An ALARA review of the beam dump must be performed.

(CK-Booster-FY2003-292)

The beam dump must be placed on the same water system as the old beam dump or the potential impact of placing it on another water system must be reviewed.

(CK-Booster-FY2003-293)

Engineering approval of the beam dump and a beam intensity limit if necessary.

It was noted that a planned removal and replacement of the liner of the existing dump must be done with appropriate caution. Substantial water introduced to the soil while the membrane is being replaced could cause an inadvertent release of activation products to the groundwater.

Attachments:(file copy only)

- 1) A. Stevens , copy of overview transparencies.
- 2) A. Stevens, “ Requirements for a Cap Over the Booster Beam Dump”.
- 3) A. Stevens, “ Estimate of Sky-shine from Booster Beam Dump”.
- 4) A. Stevens, “ Booster Vent “.
- 5) D. Paquette memo of Dec. 27, 2001, “Review of Groundwater Protection Issues Associated with the New Beam Stop for the Booster”.

cc: RSC
Present
RSC info
Chief Mechanical Engineer