

Radiation

Safety

Committee

RSC *DB*
Minutes of meeting held 9/11 on Changes for E896 in the C5 beam line

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Attendees: L. Ahrens, D. Beavis, H. Crawford, L. Greiner, K. Kainz, W., Lessard, W. Meng, S. Musolino, D. Phillips, R. Thorn

The experiment has requested to operate a 15 GeV/c positive secondary beam. The upstream end of the beam line has been modified since the last run approved for 14.5 GeV/c positive secondary beam. The highest energy positive secondary beam approved since the modification has been 12 GeV/c with an upper limit by the interlocks of 13 GeV/c (May 28, 1998). The committee reaffirmed this limit. If the changes to the front end of the beamline can be shown not to compromise the analysis presented to the committee on April 30, 1996 then that approval for 14.5 GeV/c running will be allowed.

It was noted that K. Brown and L. Ahrens are preparing a note on the minimum energy which can be extracted from the AGS with the present current limits on F10. The present interlock limits the F10 current to 95% of its nominal value which corresponds to a lower beam energy to 24.2 GeV/c (25.5 GeV/c setup). Additional decrease can be achieved by retuning transport elements to and including CD1. The analysis suggests that the energy of the extracted beam could be decreased another 4.5% with a loss of approximately 40% of the beam in the extraction channel near CD1. It is very unlikely that even this decrease can be achieved with the present chipmunks around the AGS ring. In addition, it would require considerable efforts to retune the primary transports such that this lower energy beam could be delivered to a target station. At present this does not appear to be a consideration for the C5 running.

The experimental area has 3 dipoles which can deflect the secondary beam. These magnets are C5D10, C5D11, and C5D12. Several of these magnets have not been used for secondary beam. C5D11 is the superconducting sweeper magnet. In addition to the 15 GeV/c beam the experiment has requested to operate 4 GeV/c and 2 GeV/c.

High intensity tuning will be done at 2×10^6 particles/spill with all dipoles RSC LOTO in B polarity (**CK-C5_E896**). Care must be taken that the polarity of C5D10 is not changed by swapping the cables at the wrong end. *128*

The sweeper magnet (D11) will be RSC LOTO at a maximum central field of 35 KG. D11 will be RSC LOTO off for the 2 GeV/c running. (**CK-C5-E896-2**) C5D10 will have the upper current RSC LOTO such that the lower energy beams are not bent out of the acceptance aperture of C5D11. (**CK-C5-E896-3**) *129* *130*

The current limits of D10 will be established before the secondary beam energy limit on C5D4 is reduced. (**CK-C5-E896-4**) *131*

The magnet D11 and D12 will be off for all 10^6 operations 4 and 2 GeV/c tuning. (**CK-C5-E896-5**) *132*

If the NMC units are not settable for 2×10^6 and then later for a limit of 2×10^3 , then the appropriate collimator jaws are to be RSC LOTO to limit the beam intensity before sweeping the beam across the TOF walls. (**CK-C5-E896-6**) *133*

Careful survey must be done of the walls on each side of the beam. There is a section on the E850 side with only a fence. The C1 area near the fence should be excluded of personnel if possible before the D12 is operated in A polarity (bends towards C1 experimental area). (**CK-C5-E896-7**) *134*