

M E M O R A N D U M

To : W. Schnell, ISR Running in Coordinator
From : B. de Raad
Subject : Request for ISR Beam Time

The list given below shows the various jobs to be done by the Beam Transfer Group. In all cases it is sufficient to have 2 bunches. The measurements will first be done at 15 GeV/c and subsequently at 24 GeV/c. The 24 GeV/c measurements should go at least twice as fast as the 15 GeV/c measurements. Altogether we request one 6 hour run per week until Easter, of which 1/3 should be at 24 GeV/c. Although some of these tests are not so urgent, it is nevertheless very desirable to finish this work as soon as possible since a smooth operation of the injection will minimize the loss of beam time during the other ISR runs and since it will become increasingly difficult to fit in ISR runs for this purpose.

Beam Transfer

1. Settle on the method of steering with HB 101, HB 102 and HB 103 to get a reproducible beam through TT2, when PS ejection conditions change. Define standard settings for all magnets in TT2.
2. Check the steering and matching in TT1. This was never done properly in October since all efforts were concentrated on preparing optimum TT2 settings for injection into Ring I. It is proposed to do these measurements with one bunch only, and to let the beam hit the vacuum chamber for a few hours by turning off VB 409.

Ring I

1. Find the reason for bad matching in the Ring, this time using the proper SEM monitors.
2. Check the difference between beam emittance measured in TT2 and Ring I.
3. Check the beam quality versus radial position of the inflector.
4. Settle on standard injection conditions at about -45 mm (mid F) injection orbit.

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5. Bring the circulating beam in ss 733 closer to the septum with a bump made with ISR correction windings, (necessary at 24 GeV/c to stay below the 40 kV high voltage of the inflector) and make the circulating beam parallel to the septum with the ISR correction windings, by observing on the special PU's for injection.
6. Settle down on a standard, streamlined procedure for steering the beam at injection to minimize coherent betatron oscillations due to injection errors.
7. Check optimum vertical positioning of the beam dump. Measure the beam displacement produced by the dump magnets by measuring the beam intensity distribution in the SEM monitors mounted on the face of the dump block.
8. Try out the beam scrapers, using the SEM monitors on the dump face and the PIDC.
9. Measure the horizontal and vertical size of the beam circulating on the injection orbit with the scrapers to confirm the proper matching and absence of injection errors.

Ring II

1. Bring injection into operation and establish a circulating beam.
- 2 to 10. Repeat the measurements 1 to 9 listed for Ring I.

c.c. K. Johnsen Parameter Committee
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Scientific Staff of Beam Transfer Group