

MACHINES AND AREAS COMMITTEE

Summary of meeting No 25 - April 4, 1974

Present : O. Barbalat, D. Bloess, D. Dekkers, M. Georgijevic,
C. Germain, W. Hardt, L. Hoffmann, P. Lefèvre, J.H.B. Madsen,
G.L. Munday (Chairman), G. Plass, J.P. Potier, K.H. Reich,
F. Rohner, C.E. Rufer, E. Schulte, Ch. Steinbach, P. Têtu.

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1. Instrumentation Committee

G.L. Munday thanked C.D. Johnson who has led the Instrumentation Committee since its creation in 1969. P. Lefèvre has accepted to take over this committee at a time and with terms of reference yet to be agreed.

2. PS Instrumentation

J.P. Potier and Ch. Steinbach presented their updated analysis of the PS Instrumentation (MPS/OP/Note 74-16). It was felt premature to deal with the PSB this year but it will be included in next year's review. Considerable progresses have been made in this field over the last year for most of the subsystems, however new problems appear with the prospect of pulse to pulse intensity modulation.

The discussion was concentrated on the following items (for more details, one is referred to the above mentioned note).

- The Linac has accepted to built a suitable beam position monitor for the 50 MeV PSB input line. It has to serve as sensor for the slow drift compensation feedback and is not used simply for observation.
- Three improvements are under way for the PU station system :
 - a) fast sensitivity change. The design will be ready within 2 months and will be implemented by the beginning of 1975;
 - b) multiple CODD measurements per pulse. The hardware development has been suspended in favour of work on the FAK-timing. Resources are lacking in CCI to start work on this project before the end of 1975.

c) the possibility of selecting a given bunch by STARC is being studied in parallel but no firm date can be given yet.

- Similar improvements on the Q-measurements (sensitivity and multiple measurements) will be carried in parallel with those for the CODD.
- Improvements for the beam measurements targets (both PS and PSB) are excluded for the moment because of higher priorities in the OP Group. However, a study will be made (BR and MST) based on the beam dynamical behaviour to justify better the required performance improvements (need of at least 10 % accuracy on the emittance). As decided in the previous meeting (MAC No 24), the situation will be reviewed in a few months.
- A proposal will be prepared by the OP Group to the CCI on Computer Monitoring of the beam losses coupled to an automatic intensity reduction*; a time-table can then be established. A separate hard-wired system is necessary for protecting the electrostatic septa from beam damage.
- Early contact should be taken with R. Tinguely for discussing the location of the minitoposcope for the ES of the continuous transfer.
- The request for rapid installation of a SEC before TV2/SE 62 has been restated as well as modifications on all the electronic chains to match the increased dynamic range of the beam intensity (for the beginning of 1975).

3. Improvements of γ_t -jump

The present γ_t -jump system is limited to a $6 \cdot 10^{12}$ p/p beam of $A = 10$ mrad longitudinal emittance (or 20 mrad at 10^{13} p/p). The critical element is the doublet power supply (GTF-300) which determines the speed parameter f' of the jump ($f'_{\max} = 75$ with the present system).

For operational reasons, it is anyhow necessary to construct a spare supply. As W. Hardt demonstrated, it is very attractive to construct then a more powerful unit (GTF-1000) which would allow $f' \sim 200$ corresponding to $A = 10$ mrad at 10^{13} p/p, or correspondingly smaller emittances at lower intensity. This might prove to be very attractive for the ISR. Later on, the addition of a second GTF-1000 would allow $f' \sim 400$. (Details are given in MPS/DL/Note 74-9). In parallel, the behaviour of the γ -jump quadrupoles at higher frequencies (1 kHz) and higher r.m.s. current should be studied (C. Mazeline).

In view of this, the construction by the SM Group of a prototype GTF-1000 power supply was approved.

* This system will monitor the losses in all the 100 straight section of the machine. In addition, there will be 8 special Beam Loss Monitors for controlling the most critical machine locations (septa).

4. 800 MeV Injection

The hardware responsibility for the whole 800 MeV injection system is distributed among several groups. P. Lefèvre will continue to have the system responsibility as he had it during the design period.

Detailed responsibilities and procedures will be agreed with the various groups concerned.

5. Next Meeting

Wednesday, May 1 at 2.30 p.m.

Agenda : - Pulse to pulse modulation
- Proposal for additional FAK modules.
- Programme of installations in the PS

O. Barbalat

Distribution

PS Scientific Staff