

GP/iw

MPS/SR/Note 73-3
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ACTIVITIES OF THE SR GROUP

G. Plass

Auxiliary Magnet Systems

1. Maintenance and development of the following existing equipment :

Magnets

Low energy quadrupoles and dipoles
800 MeV injection orbit bump ("septum bumpers")
" " " septum magnet
high energy dipoles and bumps
" " quadrupoles
" " sextupoles
" " octupoles
SQUARE magnet

Power Supplies

Generators type A and B
Siemens generator (poleface windings)
ACEC generator (magnet tests)
Static power supplies type C (651, 652, 270) for orbit bumps
" " " " D 650 for orbit bumps
General purpose programmable type T 500, T 700, F 300
Programmed supplies type G 800, 1000
Pulsed supplies for septum bumpers SB 4600
New pulsed supplies for orbit bumps and kick enhancement
Pulsed supplies for the gamma transition jump system
General purpose programmable rectifier for MD's and spare.

2. Responsibility for :

- the project definition (after the performance specification by the user)
- the production (where not handled by another group)
- the installation and
- subsequent maintenance of :

- low energy sextupoles
 - compact high energy quadrupoles
 - compact high energy sextupoles (if not replaced by new P.F.W.)
 - compact high energy octupoles
 - Gamma transition jump system
 - kick enhancement system for Fast Ejection
 - new power supplies for auxiliary magnet systems.
3. Definition (in collaboration with experts) and take-over of the satellite computer envisaged for the auxiliary magnet systems.

Beam Transfer

To represent the "systems" aspect for fast ejection systems :

1. Transfer towards the SPS :

- definition and coordination of implementation of the continuous transfer system
- planning and execution of MD (later : running-in) sessions.
- design of special electronics for the continuous transfer system.

2. Fast Ejection

- definition and running-in of the kick enhancement system.

3. Transfer Channel TT2 :

- liaison with ISR in view of the later take-over by P.S. of the pulsed part of TT2.

Electronic Developments; Septum Magnets

1. Electronics

Design and production of major electronics systems for the CPS. Immediate tasks :

- finishing the CODD system
- extension of the DTS
- design and implementation of the ejection computer system
- design of computer control systems for Auxiliary Magnet and Radio-Frequency systems in collaboration with the persons responsible for these systems
- design of the "power amplifier" system for the new poleface windings

2. Septum Magnets

Responsible for the maintenance and development of the ejection septum magnet systems (including power supplies) in :

- ss 16 (for FE and SE 16; FE 16 exclusively later on)
- ss 58 (for FE 58)
- ss 62 (for SE 62, later : ss 61 + 62)
- ss 74 (for FE 74)
- ss 85 (for SE 16 and 62; may be displaced later on).

Fast Kickers

1. Maintenance and development of the fast kicker systems in the P.S.,
i.e. :

- FK 30 (single turn injection at 50 MeV)
- FK 45 (single turn injection at 800 MeV)
- FK 13 and 97 (fast ejection)

and those resulting from the projects below.

2. Design and manufacture of new fast kicker systems, in particular

the Full Aperture Kicker project and
the Stepping Kickers for continuous transfer.

Project under study : a rapid beam dump system.

Installation Coordination

1. General responsibility and liaison with SB division concerning the Ring Building and utility systems (power, water, air, crane, fire alarm, etc.).
2. Coordination concerning the installation of equipment in straight sections.
3. Planning and coordination of work executed during shut-downs and maintenance stops.

Instrumentation

1. Maintenance and development of instrumentation installed in the P.S.
in particular :

- the electrostatic pick-up electrodes and the closed orbit measuring system
- the wide-band intensity and position pick-up electrodes
- the Q-measurement systems
- the mean radial position measuring systems
- the momentum spread measurement system.

2. Close collaboration with the beam measurement computer team (CO Group).

Radio Frequency

1. Maintenance and development of the RF equipment :
 - the new acceleration system
 - two units of the Marelli system
 - the beam control system including phase and radial pick-up electrodes.
2. Special developments of RF devices as may be required in connection with higher intensities and beam equipment interaction studies.
3. Definition (in collaboration with experts) and take-over of the satellite computer envisaged for the RF system.

RF Projects

1. Design, in collaboration with the Radio-Frequency Section, of the final tuning circuit for the new R.F. system.
2. Writing of a general report and of notes on various aspects of the new P.S. R.F. system.
3. Improvement and rebuilding of the Linac RF system. The extent of this project will be defined before mid 73.

Ring Magnet; Electrostatic Deflectors

1. Electrostatic Deflectors

Maintenance and development of :

- particle separators for the P.S. experimental areas
- electrostatic septum deflectors

Design of a 2m separator for SIN and of new electrostatic deflectors as required.

2. Ring Magnet

Maintenance and development of the P.S. ring magnet and its associated equipment, in particular :

- surveillance of the irradiation level of the magnet
- planning of the long term provision of repairs and spares
- construction and installation of spare magnet units
- design and acquisition of new poleface windings
- detailed investigation of the magnetic properties of the ring magnet
- temperature interlock circuit and cooling problems
- B-pulse generator.

Distribution : SR Scientific Staff
PS Group Leaders