

MINUTES OF THE LINAC-PSB COORDINATION MEETINGHELD ON FRIDAY 14 JANUARY 72

Present: F. Block, C. Bovet, G. Brianti, G. Gelato, H. Haseroth, H. Koziol
U. Kracht, G. Nassibian, K.H. Reich, T.R. Sherwood, C.S. Taylor,
P. Têtu, I. White.

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1. Operational double pulsing of Linac

The extent to which the beams to the CPS and PSB can be adjusted independently was summarized as follows.

i) Intensity

Slits are available on both the CPS and PSB injection lines.

ii) Pulse length

Tail chopper is available.

iii) Adjustment of injection conditions

Independent adjustment, radially and vertically, of position and angle, is available for both CPS and PSB.

iv) Matching

Matching for the CPS is done by adjusting lenses situated in the common part of the line. However, this adjustment is fairly stable and the CPS operators might accept to leave the settings fixed for longer periods. The change of beam optics caused by adjustments to these lenses can be compensated (within limits) for the PSB by adjustments to the lenses in the Booster part of the line, though frequent changes are not convenient (recalculation of settings on central computer).

v) RF levels

At the moment RF levels in the tanks are set by three potentiometers under CPS control. The long term hope is to achieve a standard condition satisfactory for both CPS and PSB.

For the present it is planned to have three supplementary potentiometers under PSB control, with pulse to pulse switching. This facility is considered of great importance for the PSB running in.

vi) Repetition rate

A repetition period of 0.6 s has been specified from the beginning (ensuring "triple pulsing" under all conditions). Linac people feel, for the moment, that repetition rates in excess of ~ 1 p.p.s. may impair the reliability of some components and should be avoided as far as possible.

At present the CPS cycle time is 2.4 s and is expected to remain at this value for several months. Double pulsing should therefore not be a problem and it was agreed that for the PS start up, the Linac should be adjusted for double pulsing as the standard mode of operation.

Pulsing at triple rate, while desirable as a standard feature would be used sparingly if necessary for the sake of the life of Linac components.

2. Operational use of long pulse

Operational experience is limited, but has shown that changes of phase, as well as tank levels occur, having effect on beam quality. For a 100 μ s beam of ~ 60 mA intensity, 35 mA were within the specified ± 150 keV.

After the shut-down the modulators will run at 100 μ s and tests will be resumed. Linac reemphasize that a 100 mA, 100 μ s beam within ± 150 keV remains the goal, to be reached as soon as possible.

3. Choppers

i) Switching chopper

The amplifier for the switching chopper is working in the laboratory and it will soon be installed. The reaction of the tank levels to gaps in the beam will be verified.

ii) 3 MHz chopper

This is not yet ready, but it is hoped to have it by the end of the shut down.

iii) Tail chopper

This will be completed shortly.

4. Debuncher performance

The debuncher has been ready for some time. The spectrometer hardware is generally satisfactory but difficulties were experienced with the detector so that precision measurements were not yet possible. They are, however, on the programme with high priority.

5. Current transformers

- i) The 4 stack transformers are ready.
 - ii) All transformers are being modified for 100 μ s operation. In some cases extra shielding will be needed due to magnetic pick up from pulsed magnetic elements.
 - iii) Provision is being made for computer acquisition.
 - iv) It was pointed out that the provision of integrated signals as previously agreed, is of most interest for the PSB running in. U. Kracht may be able to use an integrator developed by M. Rabany. He hopes to have the system working for April 1972.
6. Next full meeting will be held in the middle of March (date to be fixed later). In the meantime informal contacts will be reinforced.

G. Nassibian

Distribution (open)

Persons present
R.I.C.
D. Dekkers