

Notes on the Linac Running-In Committee Meeting No 13

July 28th, 1959.

Present : H.G. Hereward - M. Hine - P. Lapostolle - B. Marsicanin -
P.H. Standley - U. Tallgren - C. Taylor -

1. Instruction Notices

- (a) The Vacuum notice has been translated.
- (b) Instructions for the handling of radioactive targets has still to be done (BV).

Waiting for Vosicki's coming back from holidays a temporary notice will be issued (PHS).

2. Operation

- (a) The doors for the space behind the pulsed quadrupole racks are due this week.
- (b) The suspension device for the radiation barrier interlock system is in course of installation. The notice for the system will be prepared. (PHS).
- (c) Relative humidity in the Faraday Cage should be measured (BM).
- (d) The ignitron in tank I modulator has died. It first missed a few pulses and it had been necessary to increase the voltage; and then to increase it more and more.
- (e) The ignitron of one of the pulsed solenoid supplies is also giving signs of illness : it starts giving erratic firing (multiple ones).
- (f) Tank II has been put to air for repairing a shut off valve. It is out of operation for two days.

- (g) Because of the shortage of staff during the holiday period one of the two operators may, until further notice, work in his laboratory when he is not required in the Linac wing. He must leave his telephone number at the Control Position and must not leave his laboratory during his shift.

3. Progress

- (a) The report on emittance measurements is ready for typing.
- (b) Acceptance measurements could not be done. The pick up from the Siemens modulators is still too high.
- (c) Focusing in Tank I.

Since the beam is centered at the input of tank I it has been possible to increase the output current from 2,5 mA to 3,5 mA for about 20 mA out of the source.

Another step has been to change the polarity of half the quadrupoles in tank I to improve the transition between tank I and tank II focusing and to increase the overlapping acceptance in the horizontal and vertical directions at the input of tank I (acceptance of ellipses in the overlapping areas are 28 and 69 mm x mrad for antisymmetry and symmetry planes for $q = 0,75 \varphi_s = 30^\circ$).

With this change on the 23rd July the current measured at the end of tank I without aluminium foil increased from 3,5 mA to 4,2 mA. With a further adjustment of the solenoid focusing this current was increased up to 5 mA.

The corresponding 30 MeV currents at the output of tank II were 2,8 mA (out of 3,5 mA at the end of tank I) and 3,8 mA (out of 5 mA).

(d) Multipactoring - Breakdown

Multipactoring has been last week down to 2,5 to 6,5 o/o.
Breakdown is not more than one tenth of that. No long period of breakdown has occurred as the week before.

A recorder has been installed which counts breakdown and multipactoring pulses.

It is not impossible that the improvement in the focusing at the input of tank I is a reason for the improvement in the multipactoring situation.

The curious instability mentioned at the meeting No. 10 appears to be due to a short term (about 20 μ sec) multipactoring. This phenomenon is not understood but it can be prevented by a careful adjustment of the timings.

(e) Health Physics

A run was made on Thursday evening 23rd with currents up to 3,8 mA of 30 MeV protons in order to measure the energy of neutrons.

(f) Low power measurements on tank III.

Tank III is on frequency. Q is all right (larger than 50.000). The tank is in course of being flattened.

4. ProgrammeI. - Week 27/31.7.1959.

- (a) Tank I multipactoring and breakdown (CST).
- (b) Focusing experiments in tank I (output beam shape) (CST).
- (c) Ion source emittance measurements (BM).
- (d) Short pulse check (UT).
- (e) Low power measurements on tank III (FHJ).
- (f) Tilting experiments on tank III (FHJ).
- (g) Final cleaning finishing and closing tank III (PES).

II. - Week 3/7.8.1959

- (a) Tank I multipactoring (CST).
- (b) Focusing experiments in tanks I and II (CST and BWM)
- (c) Tilting experiments (FHLJ).
- (d) Pumping tank III (PHS).
- (e) Acceptance measurements of tank I (BM).
- ? (f) High power in tank III (CST).
- (g) Low power measurements on Debuncher and Buncher (FHLJ).

III. - Week 10/14.8.1959

- ? (a) Acceleration up to 50 MeV.
- (b) Tests with 30 MeV beam in the inflector area (BWM and BV).
- (c) Low power measurements on Debuncher and Buncher (FHLJ).

IV. - Week 17/23.8.1959

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5. Next meeting

On Tuesday 4th August, 1959 at 10.00 a.m.

PL/ei

Distribution : (closed)

Parameter Committee

Machine Operation Committee

Linac Group

(Linac Control Centre File).