

Wednesday 7 June 1995

K. Reece

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Minutes of meeting: Radiation Safety Committee, sub-committee.

Date: Wednesday 7 June 1995

Present: I.H. Chiang, C. Gardner, E. Lessard, D. Lowenstein, R. Miltenberger,
A. Pendzick, P. Pile, K. Reece, C. Schaefer.

Subject(s): C target high intensity test.

A new target has been installed (Tuesday 6 June 1995) at the C target station that consists of a solid Platinum target imbedded in and silver soldered to a Copper base. The Copper base is water cooled. There are two thermocouples (TC) in the Platinum target located at the middle-top of the target. A third thermocouple has been drilled through the Copper base and into the bottom of the target, at the boundary between target and base. These thermocouples have shorter time constants ($\sim 0.4\text{sec}$) than the original thermocouples, but confidence in the absolute temperature of the target remains uncertain to a factor of two. There is an infrared (IR) camera that senses the target temperature at a location 0.25" downstream of the two mid-target thermocouples.

The melting point of Platinum is $\sim 1700^\circ\text{C}$.

The melting point of the silver solder is $\sim 600^\circ\text{C}$.

Extrapolating the data collected for the new C target (attached), Thermocouples #1&2 should reach $\sim 850^\circ\text{C}$ @ 25TP and $\sim 1005^\circ\text{C}$ @ 30TP. In this data set, the C telescope may already be reaching a rate limit at 15TP (deviating from linearity). Additionally, the SEC is accepted to be accurate to $\sim 20\%$, (but should still be linear).

C target high intensity test:

1. attenuate the C target telescope and recalibrate at 5TP, 10TP and 15TP (Ctel/CSEC).
2. collimate the C4 secondary beam and re-document the K-flux at 5TP, 10TP and 15TP.
3. keep the AGS SEB spill length the same as normal HEP.
4. re-document the C target temperature vs. C target intensity plot, also including the following:
 1. IR camera data.
 2. new C target telescope vs. C SEC.
 3. thermocouple #3 T(max) and T(min).
 4. C4 K-flux.
 5. TC#1&2 T(max) and T(min).
 6. TC#3 T(max) and T(min).

Note: T(max) = Temp during beam pulse.

T(min) = Temp between beam pulses.

5. step the C target intensity to 20TP and record the data note in #4 above. The C line beam intensity may remain at 20TP for two hours; then be returned to no more than 15TP until the data is reviewed Thursday.

C line intensity may be increased to 20TP

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P. Pile

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NOTE: If during this 20TP test, there is an indication of target damage (reduced C telescope vs. C SEC, reduced K-flux, primary gate contamination, etc.) the test must STOP, beam intensity reduced and the following people notified;

K. Reece

E. Lessard

P. Pile

R. Miltenberger

6. During this test, Health Physics will conduct pulsed radiation surveys from the C primary target gate to the C3 Downstream target gate. They will also take contamination smears at each gate (C target, LESBIII North, LESBIII South, C3 Upstream and C3 target Downstream). These smears should be taken before the test begins (baseline) and each hour to one hour after the test. HP may request the test be terminated on the basis of surveys and/or smear results.

7. EAG (R. Hubbard) should be notified that personnel should not work around these gates during the test.

8. MCR should monitor the C target intensity (C SEC and C telescope) throughout the test.

9. This test may be continued (after review on Thursday) to higher intensities in small increments of intensity. The same conditions noted above apply. The intensity limit must be approved by K. Reece and P. Pile.

cc: RSC
RSC file
MCR

L. Littenberg
K. Li