

**HACKETTSTOWN REGIONAL MEDICAL CENTER
JOAN KNECHEL CANCER CENTER
SECOND DOSE CALCULATION CHECK**

Effective Date: January 2005

Policy No: ROC TECH 23

Cross Referenced:

Origin: Radiation Oncology

Reviewed Date: 6/09, 12/11

Authority: Medical Director

Revised Date: 6/09, 8/13

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SCOPE:

Medical Physicists and Dosimetrist for the Joan Knechel Cancer Center

DEFINITIONS:

To independently verify dose calculations for individual patients and to comply with the recommendations of AAPM Task Group 40 and AAPM Task Group 53.

POLICY

Systems of independent monitor unit or beam on time either manually or using a second computer has been instituted to verify "beam-on" time for each field. The calculation and the record and verify information are then checked by the responsible physicist on clinic duty and initialed. Monitor Unit tolerances should be within 5%.

PROCEDURE

The medical physicist on clinic duty must check all dose calculations and plans that are due in 24 hours. In such a case, the dosimetrist performing the first calculation must check to ensure that the calculation and the record and verify system are verified and signed by another physicist, dosimetrist, physician available before releasing the chart for treatment.

For treatments which start on weekday evenings (Monday to Thursday) or Sunday, the therapist on-call may need to calculate the MU for the treatment fields. The calculation must then be checked by a physicist the next working day before the start of the second treatment.

For treatments which start on Friday evenings, Saturdays or holiday weekends which the next working day is at least two days away, the therapist on-call may need to calculate the MU for the treatment fields. It is at the discretion of the attending radiation oncologist and the therapist to decide if a dosimetrist or a physicist before the second treatment should verify the calculation.

Thus for MU only treatments, the calculations must have the initials of two people, at least one of which is a Medical Physics staff, before the second treatment.

The MU calculation form is attached. Alternative MU calculation forms can substitute the following form.

**HACKETTSTOWN REGIONAL MEDICAL CENTER
 JOAN KNECHEL CANCER CENTER
 SECOND DOSE CALCULATION CHECK**

Effective Date: January 2005
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MANUAL DOSE CALCULATIONS

PATIENT NAME				M-R-N	
MACHINE	21EX	21EX	21EX	21EX	21EX
ENERGY					
FIELD NAME					
RX DOSE/FRACTION					
FIELD WEIGHT %					
COLLIMATOR X					
COLLIMATOR Y					
EQUIVALENT FS BLOCKED					
SC (OPEN FIELD)					
Sp (EQUIV. BLOCKED)					
DEPTH					
TMR (BLOCKED FIELD)					
SAD FACTOR*					
OFF AXIS RATIO**					
WEDGE FACTOR					
TRAY FACTOR					
MU'S					
Calculated by					
Checked by					
DATE					

*Rx_Dose/Fraction * Field_Weight*
 MU =

$$Sc * Sp * TMR * SADfactor * OAR * WF * TF$$

SADfactor (6x) = 1.032
SADfactor (15x) = 1.056