

A Virtual wedge was recently installed on our Siemens linear accelerators. The Virtual Wedge, [VW], creates a wedged field by moving the appropriate asymmetric jaw across the field during treatment. The dose rate is varied so that the "wedge factor" is = 1.0 for the VW, and the output is the same as the corresponding open field. The VW eliminates the insertion of a physical wedge during treatment. The field size for the VW is limited by the range of motion of the asymmetric jaws and has fewer field size limitations than a physical wedge. Wedging of an asymmetric field, i.e. half beam field, is also possible.

Commissioning the Virtual Wedge required the following measurements:

1. Measurements to verify VW wedge factors = 1.0 for square and rectangular fields.
2. Measurement of output factors with VW for square and rectangular fields to verify VW output factor is same as open fields.
3. Measure isodose curves for VW and verify wedge angles.
Film was used for these measurements.
4. Measure output at off-axis points for asymmetric fields to verify calculation of VW WOAF.
5. Verify hand calculation of point doses with VW versus measured values for square and rectangular fields.
6. Implement virtual wedge on [Render] planning computer.
7. Verify MU calculation for VW.
8. QA methods.

Results of the commissioning will be presented.