

AbstractID: 4356 Title: The use of a commercial QA device for daily output check of a helical tomotherapy unit

Helical tomotherapy radiation therapy units, due to their particular design and differences from a traditional linear accelerator, require different procedures by which to perform routine quality assurance (QA). One of the principal QA tasks that should be performed daily on any radiation therapy equipment is the output constancy check. The daily output check on a Hi-Art TomoTherapy unit is currently performed utilizing ionization chambers placed inside a solid water phantom. This provides a good check of output at one point but does not give any information on either energy or symmetry of the beam, unless more than one point is measured. This also has the added disadvantage that it has to be done by the physics staff. To address these issues, and to simplify the process such that it can be performed by radiation therapists, we investigated the use of a commercially available daily QA device to perform this task. The use of this device simplifies the task of daily output constancy check and allows for this measurement to be performed by the therapists, rather than the physicist(s). This device can also be used to monitor the beam energy and lateral symmetry and can potentially be used to detect errors in the couch movement or laser misalignment.