AbstractID: 11443 Title: 3 years of data collection and analysis of film flatness and symmetry using Vidar/ RIT software from different centers nation wide.

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Purpose:

To analyze accuracy and dependability of RIT software / Vidar Scanner in film flatness and symmetry measurement nationwide.

Method and Materials:

EDR and V films were exposed to 200 MU 6X & 15X radiations at depth of 10cm in solid water phantom, 100cmSSD with filed size of 20x20cm. Measurements were repeated with different phantom orientation, phantom of different vendors, and different packs of films, different processor, and different linac machines. Water beam scanning was done with PTW water tank at the lowest speed, central axis and at steps of 3cm off axis. Profiles were analyzed using Memphysto software. Exposed films were scanned at different 90' intervals and flipped in each orientation for comparison.
Measurements were repeated at different centers with different linac and different RIT software and Vidar Scanner

Results:

RIT's film flatness scanning shows an area of increased intensity on the left hand side of the scan regardless of using different Linac machine, Vidar scanner or the orientation of the phantom being used. No mirror images were obtained in RIT when the flatness film was scanned flipped or if rotated at different angles. Results of 'Scan info' test performed weekly on Vidar scanner for three months showed no failure and passed the overall performance and water beam scanning profile collected by PTW showed persistent uniform symmetry and flatness using TG –45 guidelines.

Conclusions:

None of the mentioned effects were seen while scanning a patient's QA film. Only in scanning of flatness film, one would notice the above effects. RIT believes that a systemic scanner bias (within Vidar production specifications) may be causing this effect and is working on methods to compensate for any systemic scanner bias.