Instructions for Irradiating the OSLD dosimeters with HDR

Version 3.0 May June 2023

Please find enclosed:

1) One polystyrene mini phantom containing four OSLD dosimeters. The phantom has a single channel with a plastic thumbscrew at its mouth as seen in Figure 1.
2) An HDR OSLD Irradiation Form

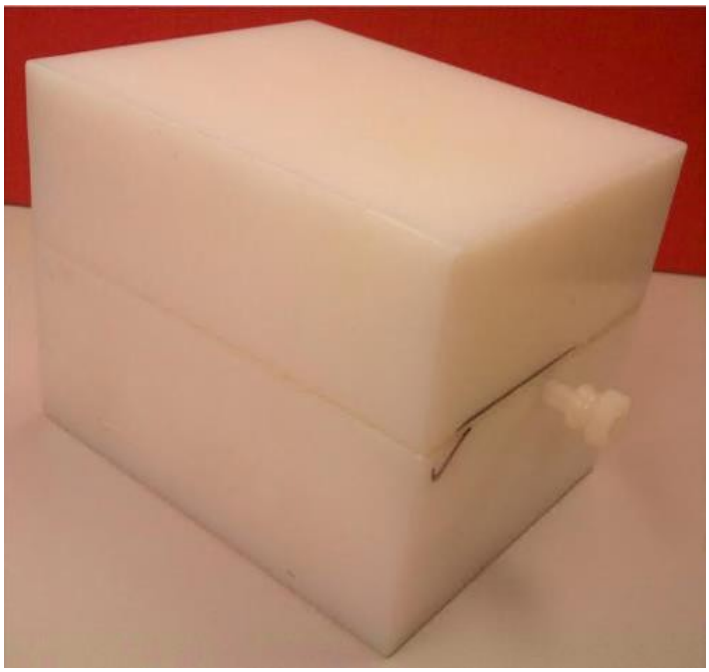

Figure 1: the HDR remote audit phantom

General Audit Instructions

1) Set up, plan, and irradiate the OSLD as Instructed below.
2) The phantom contains sensitive dosimeters. Do not expose it to radiation until ready to deliver the plan described below.
3) Fill out the enclose Irradiation Form. Include a print-out of your treatment plan, showing the 100 cGy isodose line.
4) Return the HDR remote audit phantom, Irradiation Form and plan print-out to the MDADL/IROC Houston in the box. For your convenience, Shipping instructions and label are enclosed.
5) Please try to irradiate and return the phantom within two weeks of its receipt

Setup Instructions

1) The two halves of the phantom should remain firmly pressed together at all times. Do not attempt to separate the phantom or remove the dosimeters.
2) Loosen but do not remove the thumbscrew.
3) Insert a single 2mm-diamenter (6 French) catheter through the thumbscrew and into the channel. The distal end of the catheter should be positioned against the end of the channel. The other end of the catheter should be connected to your HDR unit.

4) Tighten the thumbscrew to secure the catheter in place. The thumbscrew should be snug enough to resist movement of the catheter, but not enough to inhibit the passage of the source. Make sure that the catheter does not get pulled out of the channel as the screw is tightened.
5) During irradiation, the phantom may be placed in whatever orientation is convenient, as long as the two halves remain pressed together and the source can move freely within the catheter.

Planning and Irradiation Instructions

1) Use 10 dwell positions, with 5mm spacing.
2) Using the CT dataset provided from the IROC Houston website (http://irochouston.mdanderson.org), create a plan to deliver 100cGy to a line parallel to the catheter and crossing the center of the volume designed for the OSLD (2cm x 0.2cm x 1xm on each side of the catheter).
3) Deliver the plan only once.
4) Print out copy of the treatment plan showing the 100 cGy isodose line (additional isodose lines may be included is convenient). Include this print out with the irradiation form.
5) Print out and submit a copy of the treatment delivery report.

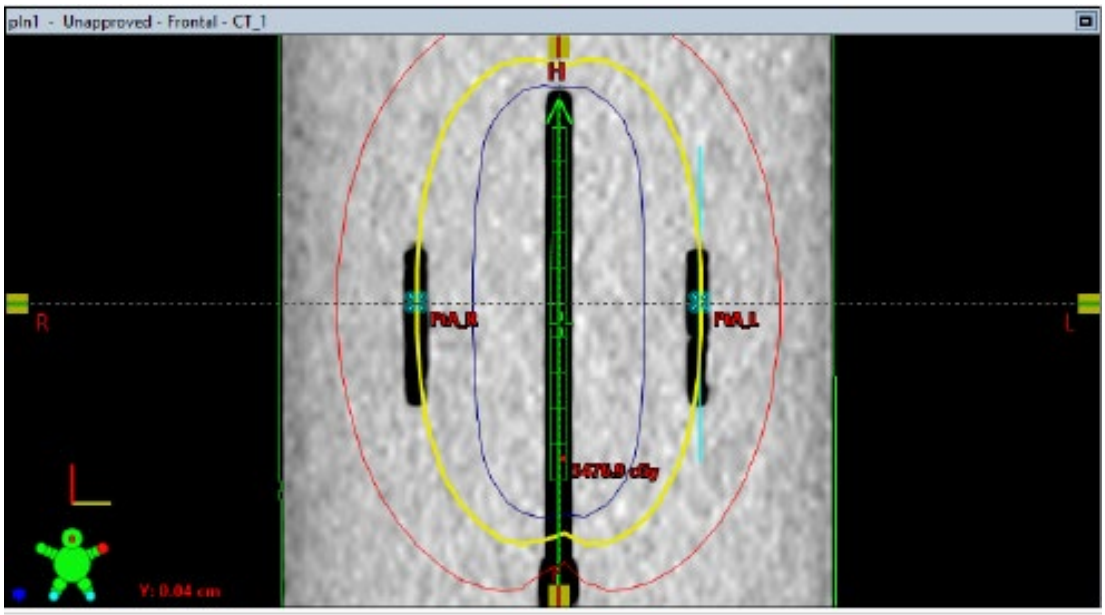

Figure 2: Example isodose lines for the HDR audit are shown above. Dwell times should be optimized to deliver 100 cGy along a line 2 cm away from central channel and uniform over the 4 OSLD. Additional non-100 cGy isodose line are shown for illustrative purposes.

If you have any questions, please contact the appropriate person:

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