Invitation of Quotation: Fabrication of the Dosimetry Phantom for Establishing Nationwide Quality Audit Network in Advanced Radiotherapy

Brief Description:

The dosimetry phantom will have main phantom body and dosimetry slot. The dosimetry slot should contain C-shaped planning target volume (PTV) mimicking the tumour region and organ at risk (OAR) structure mimicking the spinal cord. The phantom has two parts, Part 1 is the outer body of the phantom; Part 2 will consist PTV, OAR along with dosimeters and can be fitted into Part 1 to make a complete phantom. The dosimetry slot will have provisions to place thermoluminescent dosimeters (TLDs) and gafchromic film for point and planar dose verification.

Phantom body and dosimetry slot specifications:

1. The phantom body will be made up of ABS (density: 1.05 g/cc) having a dimension of 16 x 16 x 16 cm³.
2. CT uniformity of the materials should be within ± 40 HU
3. The dosimetry slot will be cubical in shape, having dimensions of 10 x 10 x 10 cm³, and made up of Perspex.
4. It should contain tissue equivalent inserts for PTV (Material: ABS plastic, off-white colour, density: 1.05 g/cc) and bone equivalent inserts for OAR (Material: Delrin, density: 1.43 g/cc). The PTV will be a C-shaped structure made of ABS that surrounds OARs, mimicking the spinal cord, having cylindrical shape of radius 1 cm and length 6 cm.
5. The gap between the OARs and the PTV should be 0.5 cm. The inner arc of the PTV is 3.5 cm in radius and width & length of PTV will be 5 cm and 6 cm, respectively.
6. The PTV and OAR should have provisions to accommodate 09 and 03 disc of TLDs, respectively for point dose verification. Further, the dosimetry slot should accommodate 10 x 10 cm² Gafchromic film for 2-D dose verification and must have fixing arrangement (e.g. slots) for reproducible positioning.
7. The cross-hairs should be marked on the surface of the phantom, representing the center position of the phantom.
8. The carrying suitcase accommodating the phantom should be provided for safe transport.
Vendors may discuss with users for any clarification about understanding of phantom design. Vendors need to get users approval on their final fabrication drawing before fabricating the phantom.

Place of Delivery: Room No. 404, CT&CRS, Anushaktinagar, Mumbai 400 094

Due Date: 13-11-2020

Please send your quotation for the above fabrication & supply in a sealed envelope super-scribed “Quotation for Fabrication of Dosimetry Phantom for Establishing Nationwide Quality Audit Network in Advanced Radiotherapy” so as to reach the undersigned on or before 13-11-2020. Rate(s) shall be typewritten only.

Please note that quotation should be on letter head/ quotation format and should have Goods and Service Tax Identification number (GSTIN) and PAN number. The quotation should be delivered by registered post/ speed post through Indian Postal services.

Quotations should be addressed to:

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