

Q.A. Collectible

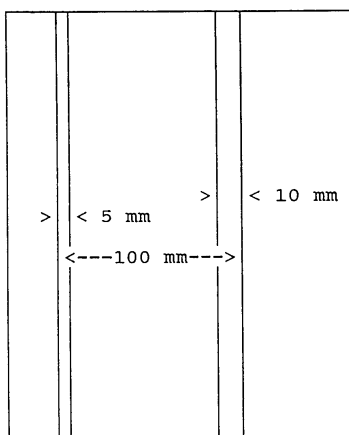
*Sponsored by CRCPD's Committee on Quality Assurance
in Diagnostic X-Ray (H-7)*

CT System Survey "More than just MSAD"

States may wish to make their inspections or surveys of CT systems more comprehensive than just performing an MSAD determination with a phantom. All manufacturers provide a performance phantom with each machine that, with the help of the CT operator, can be set up and scanned in a short period of time. The testing options available in each performance phantom vary, but should include the capability to derive a CT number for water, test the uniformity across the image of the water section, and evaluate high- and low-contrast resolution, noise, and several other Q.C. parameters. The results would then need to be compared to the manufacturer's specifications or the facility's last PM results.

Most performance phantoms also provide a slice width and alignment test tool. With this, you can quickly determine the accuracy of the laser or light indicating the tomographic plane and the width of the x-ray beam. If this feature is not present in the facility's phantom, you can wrap and tape a flexible black plastic cassette containing a sheet of linagraphic paper (or film) around the phantom. Ask the operator to make an exposure with a slice thickness half of the slice thickness that is commonly used, then have the operator move the table 100 mm and make an exposure with the most commonly used slice thickness.

Once the linagraphic paper (or film) is developed, you will be able to evaluate the accuracy of the table incrementation as well as the slice thickness. Near the middle of the images, measure to the nearest millimeter the width of each slice and the distance between the centers of each slice. Compare these with the indicated slice thicknesses and table incrementation. If the differences between actual versus indicated are greater than 1 mm, report this to the facility so they can initiate further action.



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