

RPC WEBPAGE NEWSLETTER

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Why does the RPC change my beam energy?

We don't actually change beam energies, of course, but on occasion we will change the nominal photon beam energy reported on a TLD form.

Specifically, when an institution reports the high beam energy of a Varian Clinac 18, 1800, 2100 or 21EX to be 23 MV, we document it on our TLD reports as "18 (23) MV". This is to ensure that we apply the appropriate correction factors for the TLD calculations, and that the beam is grouped with similar beams when our "standard data" are calculated. This procedure also retains the institution's beam designation.

What are the RPC "standard data"? A complete description will appear in a future newsletter, but a summary is as follows: When the RPC visits an institution, we make a number of measurements of beam characteristics, including field size dependence, off-axis ratio, wedge transmission factor, and percent depth dose. Following the visit, and after the measurements and calculations have been carefully reviewed by another RPC physicist, the photon beam data are classified by machine make, model, and energy, to generate a table of average values. These data sets cover beam energies from ^{60}Co to 25 MV, and most of the machine models that have appeared in US clinics over the last 35 years.

See, for example, our recent AAPM poster describing the photon beam standard data sets, at <http://rpc.mdanderson.org>, (click on "recent postings"). Also, see our publication on electron beam data: Followill DS, Davis DS, Ibbott GS. Comparison of Electron Beam Characteristics from Multiple Accelerators. *Int. J. of Radiat. Oncol. Biol. Phys.* 59:905-10, 2004.

Should you have questions, please do not hesitate to contact the RPC at (713) 745-8989 or email at rpc@mdanderson.org.

Previous issues of this Newsletter and answers to many questions can be found at our [FAQ](#) page.