

## AbstractID: 7915 Title: AAPM TG-51

The report of Task Group 51 on a "Protocol for Clinical Reference Dosimetry of High-Energy Photon and Electron Beams" was published nearly 8 years ago (Medical Physics **26** (1999) 1847 – 1870) and according to the RPC has been adopted by about 80% of all clinics.

This talk will review how the various factors in TG-51 were calculated, including a derivation of the relevant equations and a discussion of the sources of physical data used. The rationale for the choice of beam quality specifiers will be given and the role of the lead foil explained.

The talk will conclude with a review of some of the published experimental data which confirms the calculated  $k_Q$  values used in TG-51 and review some of the post-TG51-publication research which has an impact on the physics in the protocol. The protocol should continue to be used as written.

Educational Objectives:

- 1) To review the basic physics and sources of data underlying TG-51
- 2) To derive the equations used to calculate  $k_Q$  and  $k'_{R50}$
- 3) To review some experimental verifications of TG-51 quantities, especially  $k_Q$
- 4) To discuss the implications of more recent dosimetry research and its effects on future dosimetry protocols.