Authorization and Inspection of Linear Accelerators Used in Radiotherapy

Day 1, Exercise 1 – Beam Calibration
IAEA TRS-398, "Absorbed Dose Determination in External Beam Radiotherapy"

1. Photon Calibration Exercise
    a. Complete the photon calibration worksheet with the following information
    b. Assume this information was gathered in a water tank greater than 30x30x30 in dimension at 100cm SAD using a 10x10cm2 field and delivering 100MU.
    c. Assume the ion chamber is a model PTW 30001 calibrated at +300V, 20°C, and 101.3kPa.
    d. Use a water density of 1g/cm3

Energy	ND,W	TPR20,10	zmax	Temperature	Pressure	Pelec	+300V	-300V	+150V
6MV	5.4E7Gy/C	0.69	1.5cm	21°C	100.6kPa	1.0	12.64	12.60	-12.62

2. Electron Calibration Exercise
    a. Complete the electron calibration worksheet with the following information
    b. Assume this information was gathered in a water tank greater than 30x30x30 in dimension at 100cm SSD using a 10x10cm2 field and delivering 100MU.
    c. Assume the ion chamber is a model PTW 30001 calibrated at +300V, 20°C, and 101.3kPa.
    d. Use a water density of 1g/cm3

Energy	ND,W	R50	Temperature	Pressure	Pelec	+300V	-300V	+150V	PDD at zref
18MeV	5.4E7Gy/C	7.5cm	21°C	100.6kPa	1.0	12.64	12.60	-12.62	97.5%