Answer on Question #60148-Physics-Other

What is the effective dose for an external source in a case where the absorbed dose is 760 J/Kg for an external source in a case where the radiation is in the form of beta particles assuming a RBE value of 1.8?

Solution

$$effective\ dose = absorbed\ dose\ \cdot RBE.$$

$$absorbed\ dose = 760\frac{J}{Kg} = 0.76\ Gy$$

$$effective\ dose = 0.76\ Gy\ \cdot 1.8 = 1.368\ Sv.$$

Answer: 1.368 Sv.