

Answer on Question #61986-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

$$\text{effective dose} = \text{absorbed dose} \cdot \text{RBE}.$$

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

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

Answer: 1.368 Sv.

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