

- 18 A positive charge of $2.6 \times 10^{-8} \text{ C}$ is in a uniform electric field of field strength $3.0 \times 10^5 \text{ N C}^{-1}$.

How much work must be done on the charge in order to slowly move it a distance of 4.0 mm in the opposite direction to the direction of the field?

A $-3.1 \times 10^{-2} \text{ J}$

B $-3.1 \times 10^{-5} \text{ J}$

C $3.1 \times 10^{-5} \text{ J}$

D $3.1 \times 10^{-2} \text{ J}$