59. If the relative difference between the proton and electron charges (in absolute value) were

$$\frac{q_p - |q_e|}{e} = 0.0000010$$

then the actual difference would be $q_p - |q_e| = 1.6 \times 10^{-25}\,\text{C}$. Amplified by a factor of $29 \times 3 \times 10^{22}$ as indicated in the problem, this amounts to a deviation from perfect neutrality of

$$\Delta q = \left(29 \times 3 \times 10^{22}\right)\left(1.6 \times 10^{-25}\,\text{C}\right) = 0.14\,\text{C}$$

in a copper penny. Two such pennies, at r = 1.0 m, would therefore experience a very large force. Eq. 21-1 gives

$$F = k\frac{(\Delta q)^2}{r^2} = 1.7 \times 10^8\,\text{N}.$$