

## THE EFFECT OF TRANSITORY CURRENT ON THE HUMAN BODY

The report describes a brief study into the effect of suddenly earthing a man when he is in an electric field. This situation could arise when someone climbing a ladder in the neighbourhood of energised overhead line equipment suddenly makes contact with earthed metalwork. In this situation a transitory current flow as the capacitance between man and earth is discharged and if there is sufficient energy stored, this discharge could be painful or even directly hazardous to life.

The study concludes that:

- Under normal operating conditions of railway overhead line equipment (energised lines operating at 27.5kV or less) there is no direct danger to human life from the discharge of the man's capacitance to earth.
- A man will experience a painful shock sensation on touching earthed equipment if the energy stored in his capacitance to ground exceeds approximately 0.25mJ.
- The presence of additional earthed metalwork will generally reduce the stored energy.
- The effect of transitory current flow may be minimised by equipping the linesmen with suitable gloves.