









# NETWORK RAIL MINIMUM ARC FLASH PPE REQUIREMENTS



| Activity  | Minimum Arc Flash Rating Required     | Underclothes  | Minimum Main Layer Requirements   |   | Other Arc Flash PPE Requirements  |
|---|---------------------------------------|---|---|---|---|
| <p><b>6.6 kV to 33 kV Indoor 3-Phase Switchgear (including non-traction)</b></p> <p>Application of HV test bushings or test adaptors into 3-Phase HV switchgear circuit or busbar spouts / test points (where the circuit or busbar spouts / test points are not inter-locked with CB position)</p> <p><b>25 kV Switchgear (Classic &amp; Autotransformer)</b></p> <p>Application of HV test bushings or test adaptors into 25 kV traction switchgear circuit or busbar spouts / test points (where the circuit or busbar spouts / test points are not inter-locked with CB position)</p>   | <h2>41</h2> <p>cal/cm<sup>2</sup></p> | <p>Any underclothes <b>MUST</b> be either natural 100% cotton or approved flame retardant items</p> |  <p>Approved Arc Flash Waterproof Jacket <b>and</b> either Salopettes or Over-Trousers</p> |   |  <p>Approved Arc Flash Helmet / Visor and Arc Flash Gauntlets</p>  |
| <p><b>6.6 kV to 33 kV 3-Phase Indoor Switchgear (including non-traction)</b></p> <p>Racking in and out any 3-Phase HV withdrawable switchgear rated up to 33 kV.</p> <p>Where you are required to manually apply a test instrument (i.e. live line Tester) in the breaker cell before carrying out the earthing procedure.</p> <p>Application of a busbar or circuit main earth via an earthing device attached to 3-Phase HV withdrawable switchgear rated up to 33 kV.</p> <p><b>25 kV Switchgear (Classic &amp; Autotransformer)</b></p> <p>Testing, Application and removal of Portable Earthing on the following 25 kV equipment (includes under SFT conditions): GEC XE2, X82, X82S VCB internal busbars, South Wales / HSS H25, HV25 VCB internal busbars, GEC K11 busbar and circuit chambers, Siemens ASG25 switchgear, 25 kV CAIS internal busbars.</p> <p><b>25 kV Ground Mounted Transformers</b></p> <p>Application of Test before Touch on the internal transformer winding connections following the removal of the transformer lid and where the external HV connections of the transformer cannot be readily tested for DEAD</p> | <h2>16</h2> <p>cal/cm<sup>2</sup></p> | <p>Any underclothes <b>MUST</b> be either natural 100% cotton or approved flame retardant items</p> |  <p>Approved Arc Flash Boiler Suit</p>  |   |  <p>Approved Arc Flash Helmet / Visor and Arc Flash Gauntlets</p> |
| <p><b>6.6 kV to 33 kV HV 3-Phase Transformers (including non-traction)</b></p> <p>Application of Test before Touch on the internal transformer winding connections following the removal of the transformer lid and where the external HV connections of the transformer cannot be readily tested for DEAD</p>  | <h2>6</h2> <p>cal/cm<sup>2</sup></p>  | <p>Any underclothes <b>MUST</b> be either natural 100% cotton or approved flame retardant items</p> |  <p>Approved Arc Flash Placket Shirt</p>   |  <p>Approved Arc Flash Combat Trousers</p> |  <p>Approved Arc Flash Helmet / Visor and Arc Flash Gloves</p>   |
| <p><b>Distribution &amp; Plant Maintenance, Works Delivery and Projects Personnel only</b></p> <p>Inspection / Maintenance / Faulting / Renewal of Distribution Equipment within a traction or HV non-traction Distribution location</p> <p><b>Isolation &amp; Earthing Activities</b></p> <p>Isolation &amp; Earthing Activities on traction or non-traction HV Switchgear (where task specific Arc Flash PPE requirements are not mandated i.e; 25 kV SMOS, 33 kV Outdoor HV Switchgear, Indoor 3-phase HV Switchgear / 25 kV switchgear with integral disconnectors/earth switches)</p> <p><b>DC Traction Withdrawable Switchgear (Open Frame)</b></p> <p>Racking in and out of withdrawable DC Open Frame (where the breakers are not contained within a panel) Switchgear</p>  | <h2>Class 1</h2> <p>(4 kA)</p>        | <p>Any underclothes <b>MUST</b> be either natural 100% cotton or approved flame retardant items</p> |  <p>Approved Arc Flash Polo Shirt</p>  |  <p>Approved Arc Flash Combat Trousers</p> | <h2>NOT REQUIRED</h2>   |
| <p><b>Access &amp; Egress to Traction and non Traction Distribution Locations</b></p> <p>Access &amp; Egress including visual survey of equipment by non-Distribution &amp; Plant Maintenance, Works Delivery and Projects Personnel</p>  | <h2>N/A</h2>                          | <h2>Arc Flash PPE not required</h2>   |   |   |   |

Notes:  
 1/. The requirement for the Arc Flash outer layer and the helmet/balaclava, gloves may be removed if an equipment specific risk assessment is provided and **approved by the RAM E&P and the Route H&S Manager**. The RAM E&P is then responsible for the submission of a derogation against Network Rail Risk Control Manual NR/L3/MTC/RCS0216.