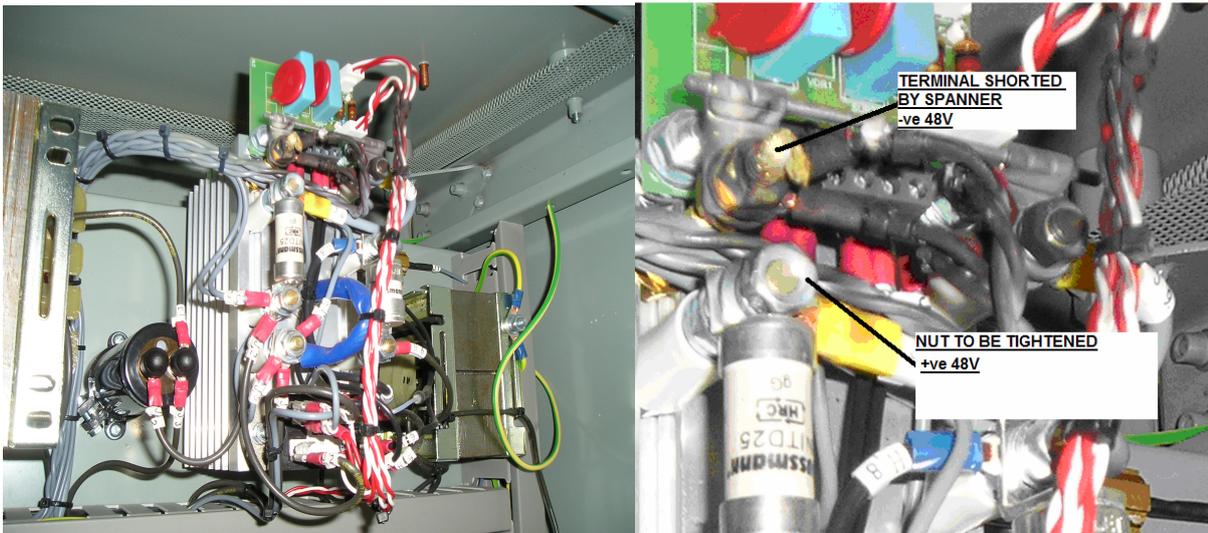


## Incident Investigation Summary

Responsible Manager Andy Brook Delivery Manager NE2, MDE - Substations  
Incident Reference No: 13708/09/NG

### BURNT HAND FROM CONTACT WITH 48V TERMINALS INSIDE BATTERY CHARGER



Whilst replacing a blown 48V 25 A HRC fuse, contact was made across two terminals with an uninsulated spanner. This was done with the 240 AC supply isolated but with the battery connected. The installation had no further means of isolation and the exposed terminals had no shrouding or insulation. The replacement fuse, although the correct rating, was of a different style to the original and whilst the main body was longer the distance between the mounting holes under the nuts was exactly the same. This small change in detail prevented the use of an insulated spinner or socket to carry out the work and unfortunately for the individual the uninsulated spanner bridged the gap between the terminals which were at opposite polarity. Bridging the two terminals caused an arc between the spanner and the two terminals which led to burns and a cut on the right hand index finger from the heat of the arc and with the rapid withdrawal of the hand causing the finger to catch on the terminals and components in the vicinity. The injured person required treatment for his injuries at the local hospital A&E department.

#### Learning points

Staff to be reminded of :

- The dangers of exposed live terminals inside equipment, even LV, and that whilst contact with 48V D.C. by the person does not in itself lead to great risk, if contact is made across the positive and negative terminals with a metallic object then large currents WILL flow leading to arcing and burning as had occurred here.
- The requirement to work insulated wherever practicable.

The issues with the poor design of the charger involved are being taken up with the suppliers of these types of equipment to obtain design improvements and additional insulation, screening and warning notices.

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For further information regarding this bulletin please contact the Responsible Manager detailed above.