

Lessons Learnt from a Significant Event



Date: 2nd April 2013

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Issue Number: TLP004

Title: Southwark substation, Electrical flashover – 7th January 2013

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Overview of Event

At approximately 12:00 on 7 January 2013 at Southwark Substation, a UKPNS Commissioning Engineer received 1st degree burns to his left hand as a result of an electrical flashover. The flashover was generated when a test lead he was using created a short circuit between a terminal on top of a buffer amplifier, which was energised at 750V DC, and the earthed frame of the DC Circuit breaker housing.

The team were on site to reprogram the Relays on three Siemens DSG circuit breakers. The work was to be carried out with the protection circuit wiring isolated.

Pictures(s)



(i) Circuit Breaker housing



(ii) Flashover damage to equipment



(iii) Burns and swelling to engineer's hand

Underlying Causes:

There are a number of underlying factors that contributed to the accident: -

- Manufacturers Procedures for isolating and altering protection relays were not followed in that test links that would have isolated the equipment were not removed
- Inappropriate test equipment used
- There was a lack of evidence regards the competency and training of commissioning staff
- Work Package Plan was too generic for the works
- Task Briefing was not produced
- Site specific test document outlining process to isolate and undertake protection changes not produced
- Point of Work Risk Assessment not undertaken
- Construction Phase Plan was out of date and CDM Arrangements not clear for undertaking snagging works
- First Aid kit not available to deal with burns

Key Messages:

- Never assume equipment is isolated – always test before touch.
- Always test before applying earths to electrical equipment.
- Always follow the manufacturers instruction and your companies safe system of work arrangements.
- Always have a valid permit to work where required
- Accurate Work Package Plans, task briefings and appropriate test documentation must be in place for the work
- If at anytime the work cannot be undertaken safely, STOP and speak with your Supervisor or Manager