

Electrical safety - let's be switched on to the dangers



everyone
home safe
every day

Hello everyone,

This week I wanted to write to you about electrical safety, and continue to share some of my personal reflections.

I can still remember the small white name plate affixed to the overhead line stanchion at Ranskill level crossing on the East Coast Main Line. Just like in 1998, the lettering of the identity plate still reads, 'E321'. I was working as a trainee signalling tester on the Ranskill S&C Track renewal going into the evening shift. The overhead line had been fully switched off by the ECO in York and Paul Whitehead, who was part of the Jarvis Rail overhead line, was in the process of attaching the cable clamp to the overhead line, in order to finish the process for the earthing.



Rob Cairns,
Regional Managing Director

Paul, did not account for the huge induced currents that can remain present in the contact wire, despite being fully switched off. He was sadly pronounced dead at the scene as a result of his injuries, which were severe. When the overhead line system is switched off, it no longer has the capability to isolate itself within milliseconds in the way that it does when it is live. This is designed to protect anything that comes into contact with it. The majority of all burn damage to persons in-contact with live overhead line electricity occurs after the 20 millisecond point (e.g. 50-250 milliseconds).

The overhead line system is no safer when switched off, than it is when it is live until the system has been fully earthed. It then has to be re-tested to ensure that remaining current is fully removed from the system.

The safety procedures associated with overhead line work can at times be described as cumbersome, and consuming valuable engineering access time. However, often our safety processes need to be cumbersome to make people, stop and think about what they are doing.

For the many team members reading this who aren't familiar with working on our overhead line systems, we all have a part in supporting and championing the vital role played by our front line staff, who from my experience have a very challenging job, often in really difficult conditions.

I have been in an overhead line basket anchoring the clamp of a contact wire and frankly it was physically difficult and brutally cold. I'm glad I don't have to do it every day and it's with that experience I respect those that do, even more.

We have very little time in which to keep our railways safe, and reliable – and even less time to get access to those parts of it that require the overhead line systems to be isolated. Be in no doubt that this is one of our most specific and difficult challenges to overcome as we continue to run our trains safely, and on time.

This year we are aiming to be the first region that will roll out Optimised Earthing which will mean fixed earths and single earths at your point of work, visible from any work site. This is the largest change in earthing process' in the UK in the last fifty years, and it will make the process safer, and simpler. The new Network Rail magnetic earth has already been trialled by Cardiff DU, so look out for news on how this will come to your workplace, and if you are able, please get involved in helping the implementation.

[Watch here](#)

[Read more](#)

In 2019, 2 members of an overhead line team from Western, suffered serious injuries whilst on site at Kensal Green. Listen to colleagues discuss their experience 1 year on.

If you're interested in learning more about Optimised Earthing, see above.

Stay safe

Rob



Great



Okay



Poor

This update is provided by the Wales and Western Communications team. For any queries, please contact walesandwesterncomms@networkrail.co.uk



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