

# Shared Learning

SKANSKA

**The Thameslink Programme**

Issue Date: 13<sup>th</sup> Dec 2016 - For further info contact sharon.fink@networkrail.co.uk

**Issue Number: TLP066 Title: HV Cable Close Call**

## Overview of Event:

Whilst carrying out the final BDU drainage connection works in Corbetts passage (North West of site which links Silwood Street to Rotherhithe new road), a 22KV cable was discovered close to where the sheet piles had been installed. The sheet piles were over 2 metres below the ground level. The services drawing attached to the permit to dig showed a HV cable at a depth of 750mm below road level however the team had not located during their progressive scanning and sheet piling. They had uncovered another cable which was 11kv and thought this was the only HV cable.

In order to fit the pipe into the sewer the operatives cleared the bottom of the trench. It was during this clearance that the team became aware of the 22kv cable. The cable was approx. 20mm from the edge of the trench sheets that had been installed.

## General Key Messages:

- **Service drawings:** where services are indicated on service drawings but not found by those undertaking the works, safe digging practices must be followed until the presence of the services are positively confirmed.

## Photo of Event :



22KV cable found  
Friday 14th Oct

Sheets were  
installed Tuesday  
11<sup>th</sup> Oct

## Actions Taken As a Result of the Investigations:

- The site team was briefed on the significant event.
- Training session held on the Safe Systems of Work whilst excavating in or around underground services.
- BDU team re-briefed on the Health and Safety Executive Publication HSG47 following hierarchy of risk control procedures, Skanska Our Way of Working EHS018 Location and Avoidance of Buried Services.
- Team advised that Utility / Service drawings over six months old may not be used as part of the planning or implementation of the works. The most up to date information must be sourced from relevant Stakeholders ie Distribution Network Operator (DNO), Highways Authority, Ministry of Defence and Network Rail.
- Additional training organised for the use of CAT scanners (RD8000) which included all operatives who undertake this task.

## Causes:

This close call was a combination of systematic failures. The hierarchy for avoiding Underground Services (HSG 47 and Skanska procedure SCE OWOW) was not followed. The incorrect information was given to the team, for what was a heavily congested area thus resulting in the signal from the scanner giving incorrect readings and identifying a cable further away from the one that was almost hit.

## Underlying Causes –

- CAD drawing attached to permit to Break Ground did not identify all cables in the area as it was prepared for trial holes earlier in the year (this work never happened). This drawing should not have been used for the permit to Break Ground.
- Two further 11kv cables in the dig zone plus an additional 11kv outside (London side) were found via the original UKPN drawings but not marked on the CAD drawing meaning the area was heavily congested with cables.
- The 22KV (now 11KV) in question may have been masked by the other cables. In congested areas the potential for the signal to jump from one cable to another a common detection problem.
- The CAT scanner picked up the strongest current via the induction process (about 1.5m from road level) and the team assumed it was the HV cable as per the CAD drawing.
- The permit to dig and CAD drawing indicated an EHV 22KV cable at a depth of 750mm the actual depth of the cable was approx. 2mtrs. (The cable was also in close proximity to the clay ducts containing the two further 11kv cables that were not identified on the cad drawing).