



NJUG CASE STUDY 54: Reducing Underground Utility Strikes to 0.16%

Winner of the 2010 NJUG Avoiding Damage Award

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities on street works issues. The 39 companies¹ we represent work to deliver gas, electricity, water and telecommunications to both individual consumers and UK plc.

NJUG members need to continue to drive forward further improvements. We have therefore developed the NJUG Vision for World Class Street Works, which revolves around six main principles:

1. Safety is the number one priority
2. Utilities deliver consistent high quality
3. Utilities work together and in partnership with local authorities and contractors to minimise disruption
4. Utilities keep the public fully informed on all aspects of works
5. Utilities maximise use of sustainable methods and materials
6. Damage to underground assets is avoided

This case study is an example of NJUG delivering on these principles and turning the vision into reality.

Overview:

In a drive to eliminate underground utility strikes and to avoid damage to underground assets, Laing O'Rourke developed a programme using a threefold approach of training, auditing and investigating. Having used this method, Laing O'Rourke has reduced their average failure rate in London to an impressive 0.16%.



Case Study:

Training

All Laing O'Rourke operatives and supervisors attend a two day induction before being put to work. This includes a bespoke EDF Energy one day course, entitled 'Code of Practice 2 (COP2) – Excavations in the Vicinity of Buried Services', which is based on 'HSG47 – Avoiding Danger From Underground Services'. The main differentiation is that hand-held machine tools must be kept 500mm away from marked services, and mechanical excavators 1000mm away. COP2 gives dispensation to 300mm for both. To go over 300mm increases the risk of other hazards, such as proximity to other utilities and working in the carriageway.

Subjects covered in the COP2 course include: 1) Safe system of work for excavations; 2) How work is issued to site teams; 3) Interpretation of electricity drawings. The course is a competency-based qualification culminating in two written tests and a field assessment. It is backed up with a First Aid Appointed Person course, manual handling training and revalidation and refresher of cable detection certificates using Cat & Genny techniques in a live street environment. Additionally, all excavation operatives must have valid street works accreditation of NRSWA modules 1-6 with reinstatement operatives requiring NRSWA modules 1-9.

¹ NJUG's current members are Energy Networks Association (representing electricity and gas), Water UK (representing all water and wastewater companies), National Grid, Openreach, and Virgin Media. Our associate members are Clancy Docwra, Skanska Utilities, Balfour Beatty, Morrison Utility Services, Morgan Est, Nacap UK, PJ Keary, First Intervention, Carillion, Enterprise, Laing O'Rourke, Amec, SQS and Fastflow Pipeline Services. Including members through trade associations, NJUG represents thirty-nine utility companies, and fourteen utility contractors.

It is compulsory for the team leader in each two man gang to have passed the COP2 training course; the only allowable unqualified operatives are those who fail to pass first time and must work under qualified supervision until their next course. Passing the test within three months of employment is mandatory for all excavation and reinstatement gangs.

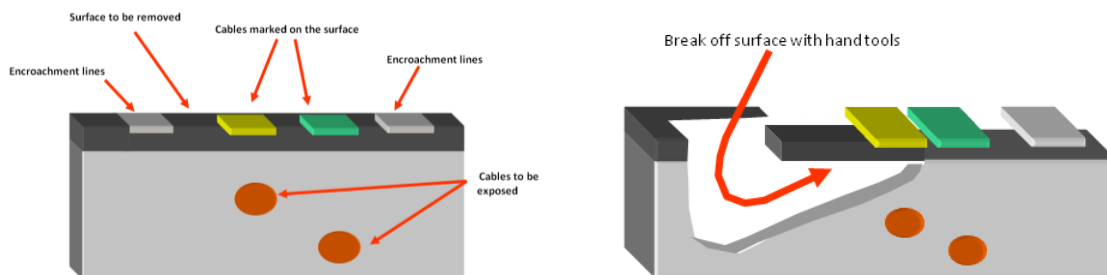
The organisations dedicated training resource has resulted in a 95% first time pass rate. Any operatives not meeting the required standard receive further one-to-one training in conjunction with on-site coaching with a qualified team leader.

Auditing

Recording of failures or “near misses” is actively encouraged and is actioned by completing a Hazard/Near Miss card. Audit scores are analysed and trends identified in working practices which do not meet set standards. Agents, supervisors and managers carry out weekly site team audits, as do their clients and external auditors. All are knowledgeable of electricity distribution safe working practices and score the audits based on Laing O’Rourke’s health and safety culture which is underpinned by their corporate values. Formal auditing is carried out by the H&S team; risks are identified and followed up with recommendations for training and process change to the Project Leader. Directors from other sectors of the business also carry out safety tours on a monthly rotation to provide unbiased observations back to the project leader.

Investigation

When damage takes place, the H&S team investigate every incident to determine direct cause, intermediate cause and underlying causes. This ensures they identify failures and drive change to prevent similar incidents from occurring again. Results of the investigations determine whether further training is required or in the case of complacency, disciplinary action. All damage reports are subject to joint investigation with a client representative. All operatives involved are drug and alcohol tested and lessons learnt from specific incidents are followed up by production of toolbox talks and incorporated into future training and awareness courses. To aid operatives in avoiding utility assets, site surveys are carried out to identify underground utilities and the method of excavating cables. Cable avoidance tools are used before the team leader starts to excavate outside the encroachment lines with hand tools.



Benefits

The COP2 training programme has had proven on-going success as a result of strong leadership driving the behavioural culture throughout our business. Laing O’Rourke has been the groundworks contractor for EDF Energy in London for 22 months, during which time 57,804 notices (permits) have been submitted with only 93 utility strikes occurring. This has resulted in an impressive average failure rate of 0.16%, equal to one utility strike for every 621 excavations.

As a result of the London success, the Laing O’Rourke H&S safety team have developed a customised training course for their E.ON Central Networks Excavate and Lay framework which is based on COP2. The training was delivered to all operatives and agents working on the contract in November 2009. The rate of utility strikes for the six months prior to COP2 training averaged 8.8 per month, in the 6 months following COP2 training the average reduce to 4.8 per month. The training has resulted in a significant ‘instant’ 45% reduction which they have since continued to drive down.

Similar programmes will now be implemented across the country on every Laing O’Rourke utility contract to spread this level of success to ‘business as usual’.