

Underground service strikes

Best practice guidelines for construction companies



An underground service strike can lead to injury or loss of life and the costs to your business can be substantial. To help you minimise the risk and to demonstrate how to deal with an incident, Zurich, Berrymans Lace Mawer and Cunningham Lindsey International Ltd have produced a management best practice guide.

Counting the cost

On average there are 12 deaths and 600 serious injuries attributed to contact with the electricity network per year.

In addition to the human cost, the financial impact to contractors can be significant. In some instances the repair costs can amount to many thousands of pounds.

Whilst your insurance policy may cover the cost of the damage to the underground services and legal costs attached to a claim, it will not extend to cover the cost of

investigation, loss of contracts, insurance excesses, penalties and reduced bonuses.

The HSE estimates that the average cost of these and other uninsured losses can be 10 times the amount of insurance premium paid for the same period.

In addition, each time an incident occurs there is an impact on your reputation as a competent contractor.

Reviewing site processes and staff training can help you to manage the risk of an underground strike. Below is a list of key questions that should be considered as part of your risk management strategy.

Management best practice

- 1 Are all staff competent and do they all hold current competence cards eg. CSCS, GWINTO, CTA?
- 2 Are sufficient staff NRSWA trained to provide project cover?
- 3 Is equipment appropriate and well maintained?
Is specific equipment or PPE required eg. flash proof clothing, insulated tools?
- 4 Are CATs / Gennys subject to regular calibration?
- 5 Are checks on equipment and contents of vans/site cabins made regularly and recorded? (Including staff training and competence).
- 6 Are staff trained and competent to use CATs/Gennys?
- 7 Are written on-site records used to record pre-work checks eg. on-site risk assessment or permit to dig?
- 8 Are subcontractors subject to the same procedures, qualification and control?
- 9 Are company risk assessments and method statements briefed out to the workforce and signed for?
- 10 Are regular toolbox talks carried out and records kept?
- 11 Are there emergency procedures in place and supporting information including contact details for service owners, method statements and supervisors' details?
- 12 Have non-standard works been assessed?
Risk factors include remote location, difficulty of communication, mobile phone coverage, emergency services coverage and response.
- 13 Are internal emergency response procedures in place, and do they cover all types of work including out of hours?
- 14 Do corporate emergency response procedures include liaison with service providers, emergency services and public/press?
- 15 Are health and safety inspections/audits of site works carried out?

Acting on the above will assist in minimising the risk of injury to employees and of damage to property.

Furthermore, whilst your Public Liability insurance should provide you with an indemnity in respect of accidental damage to third party property, it is also essential that you have in place clear reporting lines to notify your insurer promptly of any event that may give rise to a claim.

In addition, when considering excavation it is common for insurers to include requirements within the Public Liability policy that reasonable steps are taken to locate underground services prior to commencing work. The following section covers practical steps that ought to be considered prior to any work commencing.

Site – best practice

Developing management best practice is an essential element of risk management but it must also be implemented locally. The following should be considered every time excavation on site is necessary.

Before starting work

- 1 Obtain all relevant utility plans.
- 2 Are the plans clear and include all relevant services? Remember plans cannot be guaranteed as 100% accurate.
- 3 Are employees trained to read and understand plans?
- 4 Have you correctly identified the scale of the plan?
- 5 Use the correct cable locating device. Scan on metal and radio frequency. Is transmitted input from a signal generator ('genny') required to locate or positively identify a particular service?
- 6 Are the cable locating devices properly maintained and calibrated?
- 7 Has evidence of maintenance and calibration been logged?
- 8 Make use of any available 'dial before you dig' service.
- 9 Is there any external evidence of services, eg. gas meter service connection boxes, telephone boxes, street lights, old trench work, manhole covers?
- 10 Are hand dig trial holes necessary to confirm the position of services?
- 11 Clearly mark all identified services with waterproof paint/marker.
- 12 Is emergency information available on site?
- 13 Ensure that risk assessments/method statements have been briefed out and signed for.
- 14 Is there a copy of HSG 47 on site?
- 15 Are you familiar with and have you complied with HSG 47?
- 16 Are emergency telephone numbers clearly displayed on site?

On starting work

- 1 Obtain all relevant plans.
- 2 Have you located all the services in or expected to be in the area?
- 3 Have services been correctly identified?
- 4 Adopt safe digging practices, eg. hand digging where services are anticipated in the area.
- 5 Continue to use cable locating devices to locate any missed services during digging. Rescan every layer or, at least every half metre of depth.
- 6 Continue to look for external signs of the presence of services as work continues.
- 7 If at all possible do not excavate above existing services.
- 8 Do not assume that the depth of cables will be correct – ground levels can alter over time.
- 9 Do not use any handheld power tool within 500 millimetres of a marked electricity cable and avoid use below surface level.
- 10 Make sure all exposed cables/pipes are suitably supported.
- 11 Do not hold onto or stand onto exposed services to stabilise yourself or pull yourself out of the excavation.
- 12 Do not handle exposed services.
- 13 If cables are exposed and have not been identified treat as a live electricity or gas pipe until it is confirmed otherwise.
- 14 Use appropriate backfill material once works are completed – do not use flint, concrete or similar hard materials. If in doubt contact the service owner for advice on appropriate backfill.
- 15 If services are exposed and found to be damaged, identify and notify the owner of the services immediately.

Service strikes – immediate action to be taken

First aid

- Do not move a casualty unless they are in direct danger.
- Take care not to touch exposed cables or tools and equipment which could be live.
- Any electrical burn or electric shock injury must be given medical attention however minor it may seem.
- Call an ambulance if necessary.

Gas strikes

- Call national emergency number 0800 111999.
- Evacuate workers and others to a safe distance.
- Warn local residents and businesses.
- No smoking or naked flames.
- Keep vehicles and members of the public away from the area.
- Warn service users if a service connection has been disturbed as this may result in a leak within the building.
- Co-operate with and assist gas supply company, police and fire authority.

All strikes

- Do not attempt repairs.
- Inform utility supplier/service owner as soon as possible.
- Report all damage, even if leaks or loss of power are not evident.
- Inform service users.
- Inform owners of adjacent services if there is a risk of gas or water ingress or contamination.
- Keep members of the public away and post warning signs.

Electric cable strikes

- Avoid all contact.
- Do not try to disentangle cables from excavator buckets.
- Do not attempt to leave the excavator involved unless assured that the cable is no longer live.
- Evacuate workers and others to a safe distance.
- Keep vehicles and members of the public away from the area.
- Contact service owner and emergency services as appropriate.
- Co-operate with and assist cable owner and emergency services.

After the event – anticipating the claim

Post incident there is likely to be a claim by the service provider for damage to their equipment.

As mentioned earlier in this guide, the cost can be significant, not only in respect of the physical cost of the replacement equipment but also the labour charged and the management expense incurred, all of which will be included in the claim against you.

Whilst your Public Liability insurer is there to protect you in respect of such damage it is essential that sufficient information is retained and subsequently provided to your insurer to allow prompt investigation and determination of your legal liability to compensate the service provider.

Often the claim will not materialise for several weeks, months, or even years after the event. Witnesses to the event will have moved on to other sites.

Retaining all the information listed in the Pre-works on-site checklist is an excellent starting point in determining whether there is a legal obligation to pay for the damage.

In addition the following simple tasks can prove useful when the claim is submitted.

- 1 Obtain all relevant plans.
- 2 Are the plans clear and include all relevant information and have you complied with HSG 47? Taking photographs of the scene to include the damaged utility and if possible evidence the depth of the utility. If a ruler or measure is not available use something that can provide a sense of scale, for example a mobile phone or a piece of equipment that can be measured at a later date.
- 3 Record names and contact details of witnesses.
- 4 Get witnesses to provide a brief written statement of what occurred.
- 5 Record the details of any subcontractors who are involved.
- 6 If you are on site when the utility provider attends to repair the damage record how many personnel attend, how long they remain on site and if you are aware, how much material they use to repair the damage – i.e. length of cable.
- 7 If damage is significant, preserve equipment (ie. mole) as this may provide useful evidence in subsequent forensic examination.

When the claim is received this should be passed on to your Public Liability insurer without delay.

At the same time as informing your insurer of a new claim, provide all of the above information. This will assist your insurer in investigating the claim and determining liability. An early decision on liability has the added benefit of potentially reducing the time taken to settle the claim and associated legal costs.

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