

# Safety – Initiative

## 06 Service Avoidance

June 2011

### CONTENTS

1. Objective of the initiative
2. Overview.
3. Implementation
4. Planning
5. Working Practices

#### 1. Objective of the initiative

To ensure that all employees and subcontractors are aware of the risks associated with working around buried services, and implement the necessary controls.

#### 2. Overview.

There have been a few service strikes during excavation work resulting in damage to live power cables and other services on both GBM and GB sites. Fortunately, no one has been injured but every incident had the potential to cause serious injury or worse.

Subsequent investigation has indicated a few contributory causes including:

- Inadequate CAT scans
- Excavating outside the scanned area
- Use of excavators too close to services
- Working to no method statement or not working within the remit of the method statement.

These suggest a combination of unsafe behaviour by our employees / sub-contractors and inadequate supervisory communication / control. Underlying this is a failure to appreciate the seriousness of the hazard.

The main cause of electrical death and injuries is contact with underground services during excavation work. Cables strikes not only place people's lives at risk but also inconvenience local neighborhoods.

Fire, explosion and electrocution from electricity, fire and explosion from gas and high pressure fluid injection and structural failure from high pressure water are all hazards associated with underground service strikes.

Services can not only be hazardous in nature but may be uncharted or laid at the wrong depth. Management of all services on site is essential in order to reduce the risk to a minimal level.

#### 3. Implementation

All sites are to promote this initiative through a toolbox talk and display on the site health and safety notice board.

#### 4. Planning

Pre planning is essential to identifying and controlling the risks.

Plans/drawings should be checked for underground services; location of underground cables and other services by making contact with the local supply companies in the area and requesting schematic diagrams. The area should be checked for features such as nearby sub stations, lighting etc, this forms part of the risk assessment. The ground should be scanned and trial holes dug under a permit to work and method statement. All services identified should be labeled and drawings should be updated to accurately reflect the location of the services identified. Identify the plant and equipment to be used, there should be no mechanical digging within 500mm of a known service, insulated tools should be used when hand digging. A permit to break ground will be required for any ground penetration.

## 5. Working Practices

### Good Working Practice



To minimise the risks, the following precautions must be taken.

- 1 Excavation or ground penetration activities must not start unless a Permit to Break Ground and a method statement has been issued and briefed to the supervisor / operatives involved; and those involved have understood and signed the permit and method statement
- 2 All supervisors and operatives engaged in activities on or near services shall have attended a minimum half day service awareness course.
- 3 Carry out a thorough scan to locate the position and depth of the services using the various CAT modes and the genny where appropriate. The scanned area should exceed the area to be excavated by 2m. The CAT operator must have a valid certificate of training and have passed a competence test.
- 4 Arrange for live services to be isolated if possible.
- 5 Dig trial holes so that identified services can be positively confirmed, label identified services.
- 6 Mark the location of all identified services on the ground and sketch them on the Permit (take photographs for future reference)
- 7 If the expected services cannot be located, seek clarification from the service owner
- 8 Excavations within 0.5m of services must be by hand digging using insulated tools
- 9 Scanning should be continued throughout excavation activities
- 10 Exposed services must be adequately supported and protected from damage
- 11 All work must be adequately supervised to ensure that the permit and method statements are followed.
- 12 Where unexpected services are uncovered STOP WORK until the risk assessment, method statement and Permit to Break Ground has been reviewed and re-briefed.

**Always assume that a service is LIVE unless it has been confirmed otherwise**



Ensure you use these labels on exposed services

## 5. Disturbing an Underground Service.

If an underground service is disturbed you should:

- Stop work immediately.
- Make sure all operatives are safe and not in danger
- Secure the area.
- Inform management and the service provider.

In some cases cable strikes are reportable to the HSE, report the incident to the HS&E department.

## 6. Before Digging.

Before digging starts make sure that you have been briefed and understand the safe system of work, control measures and safe working practices to be used. Ensure that there is a permit to dig in place and that you are aware of the emergency procedures and the responsible supervisor is present.

Ensure that a service locator has been used to either confirm there are no services present or identify as accurately as possible the location of the buried services; marking the ground accordingly.

## 7. During Digging

- Never deviate from the permit to work, risk assessments or method statements.
- Remain vigilant and repeat checks with the locator, if unidentified services are found, stop work until further checks are carried out and it has been confirmed safe to proceed.
- Using insulated tools, hand dig trial holes to confirm the location of services
- Always hand dig near services, never use picks and forks as these are more likely to penetrate cables, use spades, shovels or air powered excavation devices cables. Hand held power tools or excavators must not be used within 500mm of an underground service.
- Treat all services as live unless it is known otherwise; never break or cut a service until it has been made safe.
- Once services have been exposed ensure they are supported and protected from being damaged; never use as foot holds to aid access or egress.
- Report any suspected damage to services.

## 8. After Digging

Ensure the area has been made safe (holes covered/filled), determined whether there are any lessons to be learnt and update service drawings.

## 9. Do's and Don'ts

### Do

- Follow the safe systems of work, using the right tools
- Report any unexpected situation.
- Ensure all services are supported correctly.
- Ensure all work areas are safe e.g. excavations shored and inspected.

### Don't

- Begin work without being briefed on and signing the method statement and permit to work.
- Divert from the permit to break ground or method statement at any time.
- Use power tools or excavators within 500mm of known or suspected services.

