



## Case Study: 33KV Cable Damaged Due To insufficient Separation



The above image highlights the consequences of lack of separation between ScottishPowers 33KV wired armoured cable and the newly installed field drain

The recently installed field drain was designed to solve the problem of local surface water; the lack of separation is clearly a problem if ScottishPower require access to maintain the cable at a later date. However a further problem was caused by installing the waterproofing membrane and gravel which added substantial weight on top of the cable.

Consultation with ScottishPower at the planning stage of the project would have resulted in the client being advised to have a minimum separation between the 33KV cable and the field drain of 500mm.

Prior to any excavations taking place cable records should always be consulted.

All Cable Record enquiries should be addressed to:

### SP Energy Networks (North)

Data Management  
(Correspondence)  
55 Fullerton Drive  
Cambuslang  
Glasgow G32 8FD

t: 0141 567 4155 or 0141 567 4455

e: Requestforplansscotland  
@scottishpower.com

### SP Energy Networks (South)

Data Management  
(Correspondence)  
North Cheshire Trading Estate  
Prenton Way  
Prenton  
Birkenhead CH43 3ET

t: 0151 609 2373

e: Requestforplansmanweb  
@manweb.co.uk

All Cable Deviation Requests /Service Alterations enquiries should be addressed to:

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55 Fullerton Drive  
Cambuslang  
Glasgow G32 8FA

t: 0141 614 9997

### SP Energy Networks (South)

Customer Connections  
PO Box 290  
Lister Drive  
Liverpool L13 7HJ

t: 0151 221 2110

## Emergency contact

In an emergency, or if there is any damage to SP Energy Networks cables or plant, call the appropriate number:

### SP Energy Networks North

Central & Southern  
Scotland

0845 272 7999

### SP Energy Networks South

Cheshire,  
Merseyside  
& North Wales

0845 272 2424





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## Case Study: 33kV wired armoured cable damaged during piling operations



The above image highlights a situation where a 33KV cable was struck while carrying out piling operations.

The damage to the cable could easily have been avoided, the contractors had ScottishPower cable records on site, however adherence to HSG47 was not implemented prior to piling operations commencing. **Trial holes were not carried out at the locus of the cables** to determine line and depth of the cable route. Fortunately on this occasion no operatives were injured. HSG47 is the key to excavating safely, avoiding injuries to operatives and damage to utilities plant.

Prior to any excavations taking place cable records should always be consulted.

All SP Energy Networks cable record enquiries are to be directed to the relevant North or South Data Management team.

Reference: HSE leaflet "Avoiding Danger From Underground Services" HSG47

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## Case Study: Electric service cable found inside gas pipe (ducting)



The above image is an example of poor working practice, a gas pipe being used as a duct for an electricity service cable.

This type of situation can result in operatives being injured due to the incorrect ducting being installed. National Joint Utilities Group (NJUG) recommendations include a colour coding scheme primarily aimed at creating a safer environment for all operators. It is also intended to reduce the cost of damage caused to other plant and to optimise safety of individuals.

**Prior to any excavations taking place cable records should always be consulted.**

**All SP Energy Networks cable record enquiries are to be directed to the relevant North or South Data Management team.**

**It is dangerous to use designated ducting for the wrong application. It is recommended that you never adopt this poor working practice.**

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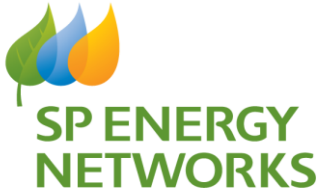
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# Case Study: Increasing The Depth Of Spoil Over ScottishPower Underground Electrical Network



## The above image highlights a situation which occurs in quarries and landfill site locations

The incident was only discovered when on site contractors came into contact with the cable, the high voltage cable was damaged when the landfill site were in the process of carrying out mechanical excavations to cap a cell (seal landfill spoil with plastic sheeting) This mountain of spoil on top of the high voltage cable is not acceptable, the possibility of the cable going into a fault situation could occur, leaving a massive excavation task to access the underground cable.

ScottishPower have recommended depths for the installation of the underground electrical network. This cable route will require to be deviated out with the landfill boundary site to ensure no future conflict/cable strikes occur.

**Cable Routes at Quarries/Landfill Sites should always be identified and pegged out to highlight to all operatives/drivers the route of underground electrical networks.**

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## Case Study: Separation Between Underground Utilities



The above image highlights a situation which can cause problems for all utilities, due to lack of separation between underground networks plant. The electrical cable at this location is a lead covered cable with an old type lead service joint, this type of cable joint will not take the weight of a pipe at the tee joint. The pipe has been laid directly on top of the electrical joint, causing the cable to go into a fault situation. To facilitate the repair a section of the main cable required to be cut out and the service cable extended. Separation between all utilities plant is imperative to ensure asset owners have access to their apparatus and more importantly that dangerous incidents to all underground networks are avoided. For guidance on the position of underground plant consult National Joint Utilities Group (NJUG)

**NJUG Guidelines on the Positioning and Colour Coding of Underground Utilities' Apparatus**

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## Case Study: Separation Between Underground Utilities(2)



The above image demonstrates a situation where lack of separation between two utilities has occurred. The 33KV (0.3) underground cable has gone into a fault situation due to the pressure of the pipe being installed in close proximity to the underground electrical network. The damaged cable is a wire armoured cable with a lead sheath below the armours. It can be extremely difficult to adhere to National Joint Utilities Group (NJUG) guidelines in city centre locations; however every effort is required to engineer a way around difficult situations to ensure asset owners have access to their networks.

**WHAT IS NJUG? As The UK's Only Trade Association For Street Works Issues, We promote Best Practice Self Regulation And A Two-way Relationship With Government And Other Relevant Stakeholders**

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## Case study - Constructing extension's over the underground electrical network



The above image highlights a situation which takes place on a regular basis. Architect has designed the required extension and placed the responsibility of procuring underground utility records with the contractor. Foundation excavations took place only for the contractor to discover, that utility services were running through the proposed extension footprint of the building. Contractor had no electrical service cable records on site, fortunately on this occasion no damage to the electricity network took place.

Failure to seek SP Energy Networks cable records prior to ground works commencing may well result in an operative coming into contact with a live electrical cable. To prevent cable strike incidents – possible injuries to operatives with this scenario the whole project requires to be planned professionally with a detailed investigation into the possibility that underground utilities may be present, in or close to the footprint of the proposed works at the planning stage of the project.

Plan The Project.

**No Cable Records No Excavations**

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