



Case Study: Removing Mature Trees From Building Sites:



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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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



The above image demonstrates a situation which can occur on regeneration building type projects.

The task for the demolition contractor was to demolish the existing properties and to clear the site. The demolition contractor attempted to pull the tree from the ground; however the tree roots were entwined around a high voltage wire armoured cable. During the attempted operation to remove the tree the HV cable was brought close to the surface, fortunately no actual damage to the cable took place. To prevent this type of incident occurring, cable records should always be consulted and trial holes undertaken to establish line and level of underground cables in relation to tree roots prior to undertaking operations to remove trees. Always assume cables are present.

Plan the Project



**SP ENERGY
NETWORKS**

Case Study: Planting trees on top of ScottishPower cable routes



The above image highlights a situation where trees were planted on top of the route of an electricity cable.

ScottishPower would advise against this type of action, trees and tree roots will grow and in some cases can damage the underground/overhead cables. It must be highlighted that the current owner of a property may not have planted the trees. In this scenario the customer was proposing to cut the trees down and build a wall on top of the cable route to prevent flooding to the property. The customer was advised to move the proposed wall to another location away from the cable route or apply for a cable deviation. Before undertaking any projects in the garden, cable records should always be consulted prior to the removal and planting of trees or undertaking construction excavations. Cable record enquiries are to be directed to ScottishPower Data Management section on the telephone numbers opposite.

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.

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SP ENERGY NETWORKS

Case Study: Cable strike to 33kV oil-filled cable with JCB



This damage caused major Environmental Issues

The above Image highlights the consequences of lack of planning when a JCB came into contact with a 33,000 volt oil filled cable.

The task was to install a metal post into the ground to support a gate at the location of ScottishPower underground apparatus. JCB proceeded to damage the cable with oil from the cable leaking into the surrounding excavation. To facilitate the repair to the cable a mature tree also had to be removed from the locus. The environmental issues highlighted and the cable strike could have been avoided if the correct planning processes had taken place. To avoid contact with ScottishPower underground plant adherence to HSG47 is strongly advised.

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: Tree Stump Grinding In Proximity To Electrical Networks



The above image demonstrates a situation which can be found on footpaths up and down the country. The lime trees were found to be diseased and the local authority took the decision to cut the trees down to stump level, with a view to stump grinding the remains of the trees. Good practice enabled the local authority to ascertain that a low voltage cable was running extremely close to the tree stumps. The local authority had implemented a policy of cat scanning the area prior to stump grinding operations taking place. Local authority contacted ScottishPower who advised that there was a real possibility of contact with the electrical network if stump grinding operations were implemented and advised that stump grinding at this location should not be undertaken. In an effort to eradicate the tree stumps: tree stump rotting chemical was applied to aid the decay of the existing stumps.

Prior to Stump Grinding Taking Place, Use Of a Cable Avoidance Tool In Conjunction With ScottishPower Cable Records Is Strongly Recommended.

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Case Study: Underground Utility Networks In Obscure Location



The above image demonstrates that utilities can be found at unusual locations, prior to excavations taking place it is prudent to always assume that utilities are present until proven otherwise.

Utilities can be located in obscure locations including woodland, forests, country parks, golf courses, football pitches, fields and on hills. Trial excavations as per HSG47 should always be undertaken to establish the line and level of utilities at all locations in conjunction with ScottishPower EnergyNetworks cable records.

**Contact ScottishPower EnergyNetworks to
procure Cable Records:
Plan the Project:
0141 567 4455 (North)
01516 092 373 (South)**

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Case Study: Removal of Tree Stump in Proximity to High Voltage Underground Cable



The above image demonstrates a situation where a tree has been installed on top of a high voltage cable. The task for the contractors was to remove the tree stump to enable drainage pipes to be installed beneath the cable with a view to also forming a new carriageway entrance in the future.

To ensure safety from the underground electrical network in this type of scenario, a risk assessment and method statement (RAMS) require to be forwarded to and approved by SP Energy Networks prior to works commencing to remove the tree stump. Construction companies could possibly fail to realise that a tree had been planted on top of an electrical cable, communication with utility companies and interpretation of cable records prior to site works commencing is crucial to avoiding utility strikes.

Communication with utilities prior to work commencing is the key to avoiding cable strikes

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**RAMS Generic Guidance For Exposing SP Energy Networks Underground Distribution
Electrical Cables In Proximity To Tree Stumps:**

33KV - High Voltage – Low Voltage Cables:

1. Ensure all machine operators/site traffic drivers/operatives/visitors to site are made aware of all cable routes on construction site at initial site induction.
2. Ensure operatives carrying out excavations – cutting away tree root vegetation have relevant excavation qualifications and experience required for operating around the underground electrical network.
3. Ensure correct Personnel Protective Equipment (PPE) is relevant to task to be undertaken (hard hat / high visibility vest / fire retardant overalls / visors - goggles / gloves etc)
4. Would recommend utilisation of an air lance with insulated round mouthed shovels to carry out required task.
5. Prior to works commencing, works area shall be marked/highlighted (install signage at excavation location) to ensure all operatives are aware of the presence of the underground electrical network in the works area, this information also to be promoted continually throughout the remainder of the onsite works. (Task specific tool box talk also required prior to works commencing to ensure everybody understands the scope of works to be undertaken around the underground electrical network, their collective/individual roles to be clearly defined ensuring the required task is completed in a safe environment)
6. Procure SP Energy Networks cable records (UMV System: Utility Map Viewer)
7. Excavations as per HSG47 hand excavate to uncover all electrical cables/utilities in vicinity of proposed works.
8. Trial holes (by hand excavations only) to be excavated with caution 1m from either side of tree stump to locate electrical cable, proceed to excavate along existing cables/utilities toward tree stump to prove line and level of cables/utilities. No mechanical excavators to be utilised whilst excavating to prove line & level of cables.
9. A continuous assessment will be required on when to introduce mechanical support to the tree stump to ensure the tree stump shall be continually supported/lifted clear of the underground electrical network/utilities at the excavation locus. (This assessment will be crucial in ensuring that contact with the underground electrical network/utilities will be avoided)
10. Cable records indicate no joints on cables at locus of proposed excavations, however if cable joints are located at locus of tree stump, excavation works to cease immediately and SP Energy Networks to be contacted for further guidance.
11. When the underground cable/utilities routes have been confirmed throughout the tree stump, excavate a track 500mm parallel to the outer most utility on one or both sides of the tree stump. (Dependent on site conditions) Ensure track is wide/deep enough to ensure operatives can work comfortably. Hand excavate towards the tree stump cutting root vegetation with appropriate insulated hand cutting tools.
12. Great care to be taken when excavations are taking place in proximity to the cables that contact with the electrical network is avoided. (removing tree root vegetation is time consuming and will require patience)
13. No graph shovels or pinch bars to be utilised at tree stump location.
14. Electrical cable shall not be prised against when attempting to remove spoil or root vegetation.
15. No sudden movement of cables or tree stump to take place.
16. When certain that all tree root vegetation has been identify and removed from around the electrical network, and when safe to do so, remove tree stump with caution, ensuring contact with the underground electrical cables/utilities are avoided.
17. Caution to be taken when backfilling excavation around the existing cables, backfill to underside of cable, sand cables with 150mm of sand, install marker tape.

18. Continue to backfill with caution.

Tree stumps on top of SP EnergyNetworks cables are not to be removed at any time without contacting SP EnergyNetworks. Contractors proposing to remove tree stumps in proximity to the underground electrical network are to produce a risk assessment - method statement to formalise the advice described above to demonstrate to SP EnergyNetworks that risk assessments/method statements/safe systems of work will be implemented to ensure a successful conclusion to this stage of the project. The risk assessment/method statement shall be passed to SP EnergyNetworks for review/approval prior to tree stump removal works commencing on site.