

24 April, 2002

Independent Pricing and Regulatory Tribunal of NSW
Post Office Box Q290
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Submission – Undergrounding electricity cables in NSW

Introduction

Dial Before You Dig is a non-profit association of organisations with underground assets in NSW. The service provides a single number – 1100 – that excavators can call from anywhere in Australia. The details of work are recorded and members with assets in the area are then notified. This single referral service provides a convenient way for all excavators to obtain details of any underground assets before starting work.

The service aims to:

- Reduce the risks to excavators and the community from accidental hits to underground mains and cables.
- Limit the damage to members' underground assets caused by excavators.
- Limit the disruption to essential services that occurs when members' networks are damaged, and
- Save both members and excavators from the cost and inconvenience that occur when underground networks are damaged.

Our long term mission is to create a culture where an inquiry precedes every excavation. To achieve this, we are working constantly to promote the service, sign up new members, and improve call answering and reply times.

General Comments

The Dial Before You Dig service understands the advantages that can accrue when networks are located underground. But it must be understood that proper excavation practices have the potential to add significantly to the cost per household of placing electricity cables underground.

As the Manager of the service in NSW, I have been very concerned about the content of the public debate that particularly relates to the ease with which networks can be bored under the ground using horizontal directional drilling techniques.

The following quote from ABC TV's Stateline program on Friday 5 April 2002 gives an indication of the statements that are being made in this regard:

“...horizontal drilling technology developed from the oil industry in the US is revolutionising the burial of powerlines and cables. The technology does away with trenches altogether. It can burrow under footpaths, roads, driveways, around tree roots and go under creeks and even rivers. Once the hole is drilled the conduit containing the powerlines and cables is pulled back through the cavity.

“...with [a] digital tracker bouncing signals from what's called a SONT or sonar in the drillhead, [a contractor can] drill up to a metre under two buildings, two roadways and



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a paved area to come out at a precise location 60 metres away. The surface remains undisturbed”.

The following comments were made by Peter Downey of Sydney Cables Downunder at the public hearing on Friday 19 April:

“The technology is galloping ahead at a tremendous pace at the moment. It costs very little extra to go through rock these days than it does to go through clay and it's easier to go through clay than it is to go through sand....

“Along with this equipment what normally happens is as one guy is setting up his machine, you've got another guy who goes down with a laptop and a hand held ground piercing radar and he can plot where all the obstacles are and put that into the laptop. When he's finished he then goes back and gives it to the operator or the driver of the machine.

“They are directional, you can steer the thing underground, but when he gives that to the driver he puts down his ground piercing radar and he picks up a sonar device and he walks his way along tracking the cutting head. The technology is advancing at a tremendous rate and it is possible to go around all those obstructions that we talked about earlier, which a backhoe can't do”.

My concern is that these statements significantly understate the danger that such excavation techniques can pose to existing underground networks in the location where the work is taking place.

Utility services are increasingly located underground for both protective and aesthetic reasons. As a result many excavations in the larger cities and towns of NSW, including most excavations in the footpath in the Sydney region, are likely to encounter a buried pipe or cable. And with the introduction of new operatives into utility markets, there is an increasing amount of new plant being added.

Experience has demonstrated that the only way to avoid damage to pre-existing pipes and cables when trenching or boring is to follow these steps:

- Organise plans through the Dial Before You Dig service and have them on site
- Locate traceable cables such as copper and steel to determine their orientation
- Pothole (or soft dig) to positively identify the depth and location of all networks potentially under threat
- Strap, guard and suspend uncovered networks to protect them from damage
- Proceed with due caution, taking note of any other requirements the asset owners may have.

These steps are time-consuming and ultimately expensive, but they are the only sure way to guard against damage to existing networks on site.

These costs must be taken into account at the conceptual and budgetary stages of a project such as this. Otherwise unrealistic deadlines and costings will burden subcontractors and force them to cut corners – sometimes with devastating results.

Failure to take these steps may result in catastrophic damage to existing networks with consequent danger to excavators, cost of repairs and loss of community amenities such as electricity, gas and communications.

As an example, in December 2001 a work crew operating a directional drill caused severe damage to Telstra optical fibre cables in southern NSW. There was a wide loss of Telstra services across the Riverina including fixed and mobile telephones. The 000 emergency number was inaccessible for some days.

In the instance above, there was a risk of serious injury to the contractor had natural gas or electricity services been on site. As it was, the incident created enormous inconvenience to towns such as Wagga Wagga, Griffith and Narrandera with the loss of EFTPOS, ATM and e-mail mobile services. Similar damages in the past have caused commercial losses in the tens of millions of dollars.

Even if damage is not sustained, utility owners often have legislative powers to halt projects that pose a threat to their existing networks. There are also criminal and financial penalties for damaging networks or exposing employees to danger. Samples of these sanctions are set out in the Appendices.

There have been many instances where utilities have used the powers at their disposal to shut down work sites. Any shut downs would make it difficult for a project such as this to meet deadlines.

Conclusion

Thank you for providing the opportunity for our Association to comment on the proposal for placing electricity cables underground in NSW.

The Dial Before You Dig service is not opposed to placing electricity cables underground. We are, however, concerned that unless proper protective practices are built into the project from the beginning, that there will be disruptions caused by damage to existing underground pipe and cable networks.

If you require any further assistance, please contact me at any time.

Yours sincerely



Dominic Puiu
Manager

Appendix 1 – Sample punitive legislation

<p>Pipelines Act (NSW) 1967</p>	<p><i>Section 64: Damaging etc pipelines etc</i> A person who unlawfully damages a pipeline or interferes with the operation of a pipeline shall be liable: (a) upon conviction before a Magistrate sitting alone as a court of summary jurisdiction to a penalty not exceeding 20 penalty units or to imprisonment for a period not exceeding one year or to both such penalty and imprisonment, or (b) upon conviction on indictment to imprisonment for a period not exceeding five years.</p>
<p>Gas Supply Act (NSW) 1996</p>	<p><i>Section 66 – Interference with gas works</i> A person must not interfere with a network operator's gas works unless authorised to do so by the network operator. Maximum penalty: 200 penalty units (in the case of a corporation) and 50 penalty units (in any other case).</p>
<p>Crimes Act (C/Wealth) 1914</p>	<p><i>Section 85ZG</i> (1) A person shall not knowingly or recklessly manipulate, tamper or interfere with, any facility operated by a carrier in such a way as to hinder the normal operation of a telecommunications service hired by the carrier. (2) A person shall not knowingly or recklessly use or operate any apparatus or device (whether or not it is comprised, connected to or used in connection with a telecommunications network) in such a way as to hinder the normal operation of a telecommunications service supplied by a carrier.</p> <p><i>Section 85ZJ</i> A person shall not knowingly or recklessly tamper or interfere with a facility belonging to a carrier</p>

Appendix 2 – OHS Regulation 2001 (NSW)

Section 64: Electricity particular risk control measures

- (1) An employer must ensure that any risk of injury from electricity at a place of work is eliminated or, if elimination is not reasonably practicable, the risk is controlled.
- (2) An employer must ensure that:
 - (d) if excavation work is to be carried out at a place of work, all available information concerning the position of underground electrical cables is obtained and disseminated to persons at the place.

Section 241 Potential risks arising from excavation work particular risk control measures

- (3) An employer must ensure that, in relation to excavation work, an adequate system of safety is in place to control risks to health and safety arising from unplanned contact with electricity cables, gas mains and other utility services.

Maximum penalty: Level 4