Fact sheet for applying for an Electrical Worker's Permit for Ground Geophysical Survey Equipment

Electrical Transmission Equipment for Ground Geophysical Surveys

Typically the equipment consists of a portable generator connected to a frequency-shift/transmission device that produces both variable frequency and voltage with an associated current flow dependent upon the resistivity of the ground path.

Attached to the transmission device are two cables (generally 2.5mm² flexible cable) installed over the ground and terminated at two electrode pits separated by some distance, generally 1 to 5 kilometres. The voltages generated by the frequency shift device can be up to 3000 Volts, well in excess of the internationally accepted safe limit of 50 Volts at 50Hz.

If your company is involved in the above survey activity using equipment as described above, then the following electrical regulatory requirements apply to the safe installation and operation of the equipment.

Deploying the generation and transmission equipment, associated cables and electrodes for ground geophysical surveys within Western Australia comprises an electrical installation, is electrical work as defined under the Electricity (Licensing) Regulations 1991 and is subject to regulation.

Recognising the characteristics of the work, equipment used and location, this office will consider an application of either of the following arrangements to satisfy legislative requirements:

1. Alternative Electrical Licensing Arrangement – Permit Scheme

A permit scheme (Ground Geophysical Survey Equipment Permit) for company employees is available whereby a company submits an application form certifying the competence of suitable employees to perform work in accordance with a Safe Work Procedures document certified by a chartered electrical engineer.

The company is to perform the following:

i) Electrical Safe Work Procedures

Electrical safe work procedures for the installation and protection of the electrical equipment (generator, transmission equipment, cables and pit-electrodes) are required.

ii) Certification of Electrical Safe Work Procedures

The above safe work procedures are to be certified by a professional electrical engineer on the National Professional Engineer Register to ensure the safety of persons, livestock and property against dangers and damage that may arise during installation and reasonable use and reasonable expected misuse of the above equipment. The company is to keep the original copy of the certified procedures and ensure they are observed in practice.

iii) Completed Electrical Permit Application Forms

In conjunction with the above certified documents, an application by selected company employees for an electrical permit is required. The company is to maintain a register of permit holders deemed competent to perform the certified safe work procedures.

Licensing Services is to be advised when permit holders either leave the company or are no longer competent in the work.

Following receipt of the completed permit application forms, Licensing Services will assess and advise the company accordingly.

2. Installation by Licensed Electrician

A licensed Electrician may install the equipment, but must observe the certified Electrical Safe Work Procedures mentioned above. In this case a permit or notification to this Building and Energy is not required.

To provide a transition period, during which employers and employees were able to implement the procedures to meet the above requirements, the Director of Energy Safety determined that the requirements would not be mandatory until 1 January 2003. From 1 January 2003 full compliance with the certified electrical safe working procedures by permit holders or an Electrician has been required.

Under the Electricity (Licensing) Regulations 1991 permit holders and their company must report electrical accidents to the Director of Building and Energy (toll free telephone number 1800 678 198). This regulatory requirement is applicable to all persons and includes electrical accidents associated with this equipment.