



Office of **Energy**

Office of *ENERGY* WA

Electrical **FOCUS**

New Strategy for Service Cables

The Minister for Energy, Mr Barnett, told a Local Government conference in early August that a new strategy to connect new or renovated homes in established Perth suburbs to underground power would be put into place from October this year by Western Power.

Cables from the main overhead power line would be laid underground to the service pillar on the house property, and then the service lead from the pillar to the meter box will be placed underground.

“Underground cables offer homeowners a number of benefits not the least being the opportunity to grow trees without worrying about interference,” Mr Barnett said.

Mr Barnett said the new arrangements would apply to newly built homes in established area, not including the Perth hills, or significant renovations which required the disconnection of power supplies for a lengthy period of time.

The cost to lay the power cables underground from the overhead lines to the service pillar as part of the new initiative will be \$560. The cost to lay underground cables from the pillar to the meter box will remain part of the homeowner’s contract with their builder.

Electrical Installation Matters

Wiring of Meter Panels

Some electrical contractors have reported confusion with Figures 3-9 and 3-10 on page 3-11 of WA Electrical Requirements. The diagrams are details on how to wire up THREE-PHASE meters, NOT single-phase meters. There is concern that the diagrams are being followed to wire up single-phase meters, in which case the meters will be connected AANN instead of ANNA (A=active conductor and N=neutral conductor).

The meter panel layout diagrams are for three phase meters. On the wiring diagrams, the three small slashes on the active conductors denote that conductors are three phase.

Fixing Screws for Meter and Switchboard Panels

Self-tapping screws are widely used to fix meter panels and switchboard panels into enclosures. It is important that the screws are of the correct length. If the screws are too long, there is a risk they will pierce the insulation of cables, resulting in a hazardous situation.

Installation of Tariff Metering Equipment in Low Voltage Switchboards

Where a 415 volt switchboard is manufactured or assembled at switchboard manufacturers’ premises for use in installations supplied by Western Power, Western Power staff will fit the tariff metering equipment into the boards at the switchboard manufactures’ premises. This will involve the fitting of meter panels, current transformers and associated wiring.

It is the responsibility of the electrical contractor or the switchboard manufacturer to arrange a mutually acceptable time for this work to be carried out.

Western Power staff will install the associated tariff meters on-site when the switchboard has been connected into the electrical installation.

Unmetered Electricity Supplies

Unmetered electricity supplies taken from underground pits will be connected via two fuses in series. One fuse will serve as the disconnection point for Western Power and the second fuse as a disconnection point for the customer. Unless the unmetered installation is double insulated throughout, the installation will be treated as a normal one and will require a main switchboard, complete with main switch, neutral link, earth electrode and MEN connection.

For further information on any of the above, please contact Western Power, telephone (08) 9411 7846.

Western Power's New Connection Process

In Electrical Focus No. 13 (February 1999), we advised readers of a new, optional electrical connection process introduced by Western Power.

The scheme is now being introduced into non-metropolitan parts of Western Power's South West Interconnected System. Electrical contractors and registered builders who are based in Kalgoorlie, Geraldton, Bunbury, Albany and Northam should now have

received information outlining the arrangements, should they want to participate. If any electrical contractors or builders have not received information, they should contact Western Power, as shown below.

Metropolitan Contractors

Phone: 9411 7888

Non Metropolitan Contractors

Fax: 9479 1130

PROSECUTIONS FOR BREACHES OF THE ELECTRICITY (LICENSING) REGULATIONS 1991 1 November 1998 to 30 June 1999

Breach	Name (and suburb of residence at time of offence)	Licence No.	Fine & Court Costs (\$)
Unlicensed electrical work Regulation 19	R Bailey (Karrinyup)	NLH	620.00
	D Berry (Neerabup) [2 offences]	NLH	825.00
	G Challenor (Lathlain)	NLH	650.00
	J Coxhead (South Hedland)	NLH	1 175.70
	R Filear (Stoneville)	EW 127251	605.00
	A Mawdsley (Marmion)	EW 123529	700.00
	R McDavitt (South Hedland)	EW 128286	525.00
	E Tiefenbacher (Scarborough)	EW 127310	1 572.00
	M De Montille (Kelmscott)	NLH	716.00
	S Nepia (Morawa)	NLH	1 050.00
	W Stevens (Bunbury)	EW 107060	385.00
G Walker (Heathridge)	NLH	565.00	
Carried on business as an electrical contractor without a licence Regulation 33	C McConnell (Mandurah)	EW 117066 EC 002868	750.00
Advertising without displaying their electrical contractor licence number Regulation 45	Mark Burgess T/A Burgess Electrics (Atwell)	EC 002854	386.00
	David Marsh T/A Envirolec (Doubleview)	EC 005507	463.00
	Philip Parker T/A PB Parker Electrical (Duncraig)	EC 002144	350.00
	John Timms T/A Leonora Electrical (Leonora)	EC 005852	570.00
Substandard electrical work Regulation 49	M Ashrif (Huntingdale)	EW 132426	600.00
	S Atherton (Gosnells)	EW 118450	1 315.00
	P Baker (Mount Barker)	EW 130396	685.00
	C McConnell (Mandurah)	EW 117066	1 255.00
	D Dierckx (Merriwa)	EW 122527	550.00
	D Jones (Neerabup)	EW 118031	863.00
M Reid (Craigie)	EW 115408	1 085.00	
Failed to submit a Notice of Completion Regulation 52	Brendan Sheehan T/A BW Sheehan Electrical Services (Currabine)	EC 003811	255.00
	David Pilling T/A David Pilling Electrics (Bicton) [2 offences]	EC 001176	365.00
Engaged, employed or instructed an unlicensed person to carry out electrical work Regulation 53	Garland Ellis Taylor P/L (Osborne Park)	EC000947	1 755.00
	Ian Earl T/A Cowaramup Electrics (Cowaramup)	EC 000742	395.00

NLH No Licence Held

Note: There were two other prosecutions finalised in this period. The details of these prosecutions are not included above as they resulted in either a spent conviction order or a conditional release order being issued.

GUIDELINE

Construction Electricity Supplies to Residential Sites

The following Guideline is issued by the Director of Energy Safety, under the authority of Section 33AA of the *Electricity Act 1945*.

This Guideline may be used by Inspectors to assess whether or not a construction power supply installation is safe. If it is determined to not be safe, an Order may be issued to disconnect the supply and/or make the installation safe.

It is the responsibility of the electrical contractor to ensure that the temporary supply installation satisfies or exceeds (in safety terms) either of the following practices:

Recommended Practice

Use of Temporary, Independent Switchboards

If a power supply is required for construction purposes, it is recommended that one or more temporary construction supply switchboards be installed. These boards must be physically independent of the building under construction. The main electricity supply to the board(s) is to be arranged to normal standards as set out in the *WA Electrical Requirements*, via service pole or pillar, as appropriate.

Care must be taken with regard to the position, marking and physical protection of the switchboard(s) and supply cables thereto, to avoid electrical safety concerns and damage during the construction of the building works.

To avoid electrical safety concerns, no part of the permanent electrical installation for a building is to be:

- used for construction purposes; or
- energised prior to the basic completion of the building's roof, ceiling, walls and plumbing/gas installation.

Alternative Practice (subject to special conditions)

Use of Permanent Installation

Parts of the permanent electrical installation may be used to provide an electricity supply for construction purposes, subject to all the following conditions for electrical safety reasons:

- 1) the permanent incoming supply (including service equipment such as meters etc.) is to be installed to the permanent main switchboard;
- 2) the location of the incoming service cable and consumers mains cable routes are identified, either by the use of temporary warning signs or by marking on a sketch fixed inside the meter enclosure;
- 3) the on-site incoming supply pillar (if one exists) and main switchboard are to be clearly identified externally as being 'Live';
- 4) the supply for construction purposes shall be made available to various trades via one or more socket outlets installed on the main switchboard and not via any permanent circuits leaving the main switchboard (although a temporary submain to a temporary construction supply switchboard is acceptable);

- 5) the 'Live' main switchboard must be adequately protected from ingress of water, either:
 - by being installed in a portion of the building already covered by the permanent roof; or
 - by having an adequately weather-proofed enclosure (meaning that only circular TPS cables fitted through water-tight cable glands may be installed into the top or sides of the enclosure and that all other [non-removed] 'knockouts' are made waterproof by the use of an approved sealant, eg. silicone) with cable entry via bottom;
- 6) the electricity supply is not to be connected, or to remain connected, to an installation or portion of an installation, unless the latter complies with the above requirements;
- 7) submain and final sub-circuit cabling forming part of the permanent installation shall not be brought into the 'Live' main switchboard enclosure until the basic construction of all internal/external walls, roof and ceilings, as well as the installation of plumbing and gas services have been completed;
- 8) the termination of permanent outgoing cables at the 'Live' main switchboard should be carried out with supply disconnected or switched off and secured, and if any components within the main switchboard remain 'Live' during that phase of work, particular precautions shall be taken to ensure safety (WARNING: any work by apprentices or trainees near 'Live' equipment must be supervised in accordance with the *Electricity (Licensing) Regulations 1991*);
- 9) permanent circuits outgoing from the main switchboard are not to be energised until they have been checked and tested, and the dwelling is at the stage of being suitable for occupancy;

- 10) once the permanent circuits have been energised, a duly completed 'Notice of Completion' must be forwarded to the supply authority within 3 days, under the provisions of the *Electricity (Licensing) Regulations 1991*; and
- 11) these conditions may be varied where appropriate, to apply to occupied dwellings that are being extended or modified, to provide for similar standards of safety.

***Issued by the Director of Energy Safety
Office of Energy
August 1999***

Note: In addition to the above, all *use* of electricity on construction sites **must** comply with statutory requirements administered by WorkSafe WA (e.g. protection of circuits by RCDs, testing of protective devices, tagging of cords etc) and, in particular, Regulation 3.65 of the *Occupational Safety and Health Regulations 1996*.

Regulation 3.65 of the *Occupational Safety and Health Regulations 1996* states:

"Connecting electricity to construction sites

3.65 The main contractor at a construction site must ensure, if it is practicable to do so, that by the time when work on the site has reached plate height or the equivalent, electricity has been supplied to the site from a supply authority's service line or service cable by way of a temporary or permanent connection.

Penalty: \$10 000."