NEW WIRING RULES. AN EASY GUIDE TO THE CHANGES, ESV INFORMATION SESSIONS, COMPLIANCE.
3 & 27 PLUS A 4-PAGE INSERT

ESV’S PROPOSED POLICY ON SUPERVISED WORKERS LICENCES 4
LUCKY ESCAPE WHEN POWERLINE FALLS ONTO EXCAVATOR 9
PROVIDING THE LIGHTS AND SOUNDS FOR NEW MELBOURNE TOURIST ATTRACTION CENTRE PAGE
GAS TECHNICAL ARTICLES 20, 21, 22, 23
ELECTRICITY TECHNICAL ARTICLES 25, 26
contents.

03 Wiring Rules – when are the changes mandated?
04 ESV proposed policy on changes to the ‘L’ Licence
06 Gas industry identity retires after 51 years
08 89-year-old injured in gas cooker incident
07 ESV assists investigations into fires involving evaporative air conditioners
08 New campaign on “Look Up And Live”
09 Young man’s lucky escape when powerline falls on machine
10 Switching to energy efficient lighting
10 Recalls of electrical equipment
13 Fire at Broadford RSL
14, 15 Working 300 metres up on the 88th floor of the Eureka Tower
16 Prosecutions, Infringement Notice update
17 Safety alert on “live” metallic antenna mounting bracket
18 The Electricity Safety Amendment Act 2007
19 Infringement notices issued over unapproved Christmas lights
20, 21, 22, 23 Gas technical articles
24 Praise for ESV’s electrical Home Safety Inspection Scheme
25, 26 Electricity technical articles
27 New Wiring Rules – information sessions and booking form

The energy safe team for this issue:
Editor David Guthrie-Jones
Contributors Charlotte Roseby, Norm Jackson, Allen Peacock, Darren Margorison, Trevor Hudson, Neil Fraser, Michael Leahy, Terry Clement, Bill te Wierik, Loo Vuong
Editorial assistant Taryn Drewett
Photographers Michael Wearn, Bill te Wierik, Shelley Burnsides, Terry Clement, Loo Vuong
Cartoonist/illustrator Paul Harvey
Design AER Design
Printing Energi Print
Editorial panel Management and staff of Energy Safety Victoria

FRONT COVER: In this issue we look at one of Melbourne’s new tourist attractions, it is the Skydeck or observation platform 300 metres high on the 88th floor of the Eureka Tower in Southbank. It claims to be the highest public vantage point on the Southern Hemisphere. REV Chris Bakes was involved over a considerable time installing power, lighting control, sound and visual effects for this exciting, and possibly scary for some, attraction. You can read about Chris and the project and view some other great pictures in the centre pages of this issue. The front cover photo and some of the others are by Alan Beard.

from the editor.


We hope you like the look of the magazine. Whether you approve or not, please let us know.

Talking about things not staying the same, there are probably some in the electrical trades who wished the Wiring Rules had stayed the same and are now trying to come to terms with the new version, AS/NZS 3000:2007, which has introduced a large number of changes to the way RECs, LEWs and LEIs work.

Because the introduction of the new edition of the Wiring Rules impacts so many in such a large way, we make no apologies for giving the topic some extensive coverage again in this issue of the magazine.

The centrepiece is the comprehensive four-page, easy to read summary of the changes which is presented as an insert in this issue. Hopefully it will be of great use to all who need it. It is printed on thicker stock compared to the rest of the magazine to ensure a longer life. It may even be worth laminating.

We believe this four page insert is the best summary of the new Wiring Rules yet produced. It was prepared by industry experts and first appeared in the Institute of Electrical Inspectors official publication at the end of last year.

Thanks to the Institute for allowing us to publish this essential information.

ESV accepts that coming to terms with the new Wiring Rules and adopting the provisions is not an easy matter. Many readers may by now be aware that ESV in conjunction with NECA has arranged more than 20 information sessions for the trade across Australia over the next few months. We have information on the sessions and the booking form in this issue.

The article on page 3 regarding enforcement of the new provisions is essential reading. The changes came into force when the new Rules were issued in November last year and ESV expects the trade to work to them as soon as practicable, but be compliant by 30 June 2008. ESV will exercise discretion if it detects breaches of the provisions up until then.

Of course there is a lot more reading in this issue. For instance there is an article on the new policy proposed by ESV in relation to the issuing of the ‘L’ or Supervised Workers Licence – the aim being to encourage holders to progress to becoming ‘A’ grade electricians. ESV is currently consulting with industry on the proposed policy.

Recent electricity and gas “events” involving safety are also covered in this issue. For instance a young man is lucky he was not electrocuted when a powerline fell on the roof of a front end loader. Similarly two people – one of them an 89-year-old woman – received serious burns in gas related incidents.

We have a report on the fire which destroyed the RSL hall at Broadford and with it much valuable memorabilia. It is ESV’s conclusion that the fire resulted from an electrical fault.

Recently ESV issued infringement notices against the suppliers of unapproved Christmas lighting products and has been instrumental in recalls of electrical products. We have details in this issue.

There are of course a number of comprehensive articles providing electricity and gas related technical information.

There is now another way of seeing Melbourne and its surrounds – 300 metres up in the Skydeck of the Eureka Tower on Southbank. The story of how the power, lighting control, sound and visual effects were installed on the new observation deck on the eighty-eighth floor of the tower makes very good reading.

Hopefully you will agree that there is something for everyone.

David Guthrie-Jones
dguthriejones@esv.vic.gov.au

advertise now!

For advertising information and bookings contact Barry Telfer of Barry Telfer Media Services on Ph: (03) 9579 7787, Fax: (03) 9579 7782 or by email at btm@patash.com.au

Bookings are now being taken for the next and subsequent issues of energy safe.

Our attractive advertising rates are as follows:
Full page > $5000 Half page > $2500 One third page > $1700 Quarter page > $1500

Authorised by: Energy Safe Victoria Building 2, 4 Riverside Quay, Southbank, Victoria 3006 Ph: 03 9203 9700
Printed by: Energi Print, 2-4 Emily Street, Murrumbeena, Victoria 3163
Copyright: All material appearing in energy safe is copyright. Reproduction in whole or in part is not permissible without the written permission of Energy Safe Victoria, depending on the source of the article.

Liability: Howsoever arising as a consequence of use or reliance upon any advice, representations, statement, opinion or conclusion expressed herein is expressly denied by Energy Safe Victoria and all persons involved in the preparation of this publication.
Ken Gardner, Director of Energy Safety, has reiterated that the new edition of the Wiring Rules – AS/NZS 3000:2007 – will be mandated from 1 July this year.

Ken told energysafe: “When it comes to enforcing the new Rules, ESV’s position must be clearly understood by the electrical trades. “Strictly speaking the new Rules apply from their date of publication, which was November 12 last year. Therefore, ESV expects the trade to work to them as soon as practicable, but be compliant by 30 June 2008.

“We accept that the adoption of the new Rules from a practical and commercial perspective is not an easy task. Therefore between now and 1 July 2008, where breaches of the Wiring Rules are detected, we will exercise our discretion when considering enforcement.”

Ken said ESV was also fully aware that because of changes to clauses and the structure of the new edition, updates have to be made to the current Electricity Safety (Installation) Regulations 1999.

“For instance some of the terms in the regulations do not correlate with the new Wiring Rules. So work is underway at ESV in matching the regulations to the Rules. “Because of the amount of work involved in updating the regulations, the new version will not come into force until next year.”

New Wiring Rules – what ESV is doing about informing the trade about the changes

new edition mandated from 1 July 2008

Director of Energy Safety, Ken Gardner, has re-iterated that the new edition of the Wiring Rules – AS/NZS 3000:2007 – will be mandated from 1 July this year.

Ken told energysafe: “When it comes to enforcing the new Rules, ESV’s position must be clearly understood by the electrical trades. “Strictly speaking the new Rules apply from their date of publication, which was November 12 last year. Therefore, ESV expects the trade to work to them as soon as practicable, but be compliant by 30 June 2008.

“We accept that the adoption of the new Rules from a practical and commercial perspective is not an easy task. Therefore between now and 1 July 2008, where breaches of the Wiring Rules are detected, we will exercise our discretion when considering enforcement.”

Ken said ESV was also fully aware that because of changes to clauses and the structure of the new edition, updates have to be made to the current Electricity Safety (Installation) Regulations 1999.

“For instance some of the terms in the regulations do not correlate with the new Wiring Rules. So work is underway at ESV in matching the regulations to the Rules. “Because of the amount of work involved in updating the regulations, the new version will not come into force until next year.”

ESV information sessions on the New Wiring Rules


Director of Energy Safety, Ken Gardner, told energysafe that while copies of the new Rules have been available since the end of last year, it is 2008 that they will become enforceable from a practical perspective.

“There are of course many changes in the new edition compared to the previous AS/NZS 3000:2000, and ESV accepts that the industry will need both assistance and time to come to terms with all the new provisions.”

ESV is working with NECA in arranging the sessions. Sessions for LElis will last four and a half hours, while the sessions for RECs and LEIWs will last two and a half hours. Details and the booking form for REC and LEIW sessions can be found on page 27.

Both the times of the sessions – first thing in the morning or late in the afternoon - and the venues for them have been arranged so that they are as convenient as possible for the trade.

While ESV has organised the sessions and selected the venues, NECA is taking the bookings and helping to publicise the sessions.

There will be a total of 21 sessions for RECs and LEIWs between the middle of March and late May. The selected venues – up to three sessions are being held at some sites – are Preston, Holmesglen, Ballarat, Bendigo, Geelong, Warrnambool, Bainsdale, Latrobe Valley, Wodonga, Shepparton, Mildura, Swan Hill and Horsham.

The three sessions for LEIs are being held at Preston, Holmesglen and Bendigo.

Ken said: “I would urge everyone involved in the electrical trades to attend one of the sessions which have been arranged to assist everyone who needs to work to the Wiring Rules. “I also want to make it clear that all attendees at the information sessions will need to have obtained their copies of the Wiring Rules and to be reasonably familiar with the contents beforehand.”

There is a nominal charge of $30 per person for each session.

an outline of changes to AS/NZS 3000:2007, Wiring Rules

This edition of energysafe contains a handy, easy to read and digest four page insert which explains the changes that have been made to the new Wiring Rules. It is a must read for everyone involved in the electricity industry.

The article has been prepared by industry experts, and is published by kind permission of the Institute of Electrical Inspectors - http://www.iei.org.au

The article first appeared in the Summer 2007 edition of the Institute’s official journal, ELECTRICAL INSPECTIONS.
ESV probes sales of appliances through eBay

ESV IS CURRENTLY INVESTIGATING THE SALE OF A NUMBER OF GAS COOKERS THROUGH EBAY THAT HAVE NOT BEEN CERTIFIED. WHAT SEEMED TO BE A BARGAIN HAS TURNED OUT TO BE A NIGHTMARE FOR CUSTOMERS WHO ARE NOW AROUND $1000 OUT OF POCKET.

Luckily, observant installers recognised the lack of Australian approval labels and refused to fit the cookers.

ESV has also followed up on uncertified water heaters being offered for sale on eBay as suitable for use with caravans. ESV’s opinion is that they are unsafe and a potential incident waiting to happen. The sellers have been warned off but tend to reappear some months later.

It is ESV’s advice that people in the market for gas or electrical appliances must check that they have full Australian approval. They should also make their friends and relatives aware of the dangers of purchasing unapproved products.

Make sure the seller is properly identified as a company with contact details that are more than an eBay account name working out of a PO Box.

Plumbers and gasfitters engaged to install uncertified appliances should refuse to do so and inform ESV immediately.

ESV consults with industry on new guidelines for issuing “L” licences

ESV HAS COMMENCED A ROUND OF INDUSTRY CONSULTATIONS WITH THE INTENTION OF INTRODUCING A NEW POLICY ON THE ISSUING OF L CLASS – SUPERVISED WORKERS – LICENCES. THE POLICY WILL ALSO REITERATE THAT THE L CLASS IS A THREE-YEAR ONE-OFF LICENCE WHICH IN MOST Instances WILL NOT BE RENEWED.

The L licence is aimed at former apprentices who have not completed their training after the four years but wish to remain in the trade. Because they have not qualified, their work needs to be supervised.

The new guidelines call for the licences to be only issued to former apprentices who demonstrate an aptitude and commitment to becoming an A grade electrician, and have completed some essential safety modules and work requirements.

Continue on next page.

EscoSmart Electricians

The National Electrical and Communications Association’s (NECA) EcoSmart Electricians program is a unique industry training and accreditation scheme for electrical contractors and their electrical staff.

This innovative and ground-breaking program is designed to educate electrical contractors and their staff about energy efficient products, services and technologies. It aims to equip electricians with the latest knowledge and skills to be able to advise customers (domestic, commercial and industrial) on the most energy efficient product and design options available, with a view to influencing their decision-making towards more environmentally-sustainable solutions and reducing greenhouse gas emissions.

EcoSmart Electricians was developed by NECA for implementation initially for Victoria and then nationally but recent developments has seen it released in New Zealand. In Victoria, it has seen an amazing response from contractors wanting to access the rapidly growing sustainability market. Forecast to reach 1000 electrical contractors and electricians, influencing an estimated 30,000 households and businesses by the end of 2010, the currently listed program is filling very fast according to NECA’s Philip Green. “Victoria is leading the way in accessing this market and the results for some of those contractors who have been at the forefront have been very encouraging. Clients are looking for more options these days and it is not simply about money. Many want to actively reduce their carbon footprint and the first place they look is their energy consumption.”

EcoSmart Electricians is unique in content depth and scope, drawing from the technical expertise of major manufacturers and suppliers in the industry as well as government and community groups. The key to the program, as it is described, is that it is a lot more than just a training course. “We have deliberately designed this to provide contractors and their staff with ongoing support and information, not just in products and technology, but with marketing support,” he says. “This last area has traditionally been a weakness and a negative for many contractors because it is not core to their skill set. But what we provide in the program is proving to be a major assistance in helping the contractors with their dealings with their customers.”

Information regarding the program can be obtained by visiting www.ecosmartelectricians.com.au

Or call 03 9645 5533

Training commencement dates and locations for 2008

Sunshine 1 April >Wodonga 2 April
> Mildura 6 May > Berwick 7 May > Warrnambool 20 May South Melbourne
4 June > Book early as Places are limited
During early industry consultation, both NECA and the ETU have indicated support for the policy.

The policy proposes that the following essential safety modules should be obtained before an L licence is granted. These modules are:

- NBB02 Occupational Health and Safety
- NE 172 Electrical Wiring and Equipment 1
- NUE044 Electrical Safe Working Practices
- NUE408 Electrical Installations-testing & Verification

An ESV discussion paper on the policy says that, as an apprentice’s formal training would normally be completed in the first three years of an apprenticeship and they would have had an additional year to catch up and complete modules, it is not acceptable for them to have completed less than 60% of their formal training.

“There is an argument that if a student is that far behind with their studies they either do not have the ability or they are not serious about becoming an electrician.

“A minimum partial completion would be that the applicant has satisfactorily completed at least 15 modules including case units NBB02, NE172, NUE044 and NUE408.

“It is not intended that a supervised worker’s licence be an ongoing licence therefore an applicant needs to supply with the application details of how they will complete all units of competencies within the term of the licence.

2. Existing holders of a supervised worker’s licence will not be issued a new licence unless they comply with the above.

3. This policy will not apply to those who held a supervised worker’s licence as a result of holding a B Class licence under the SEC Act who will be able to continue to renew their licence.

ESV records show that there are approximately 570 L Class licence holders. Of these 49 expire before the end of June 2008, a further 95 expire in the second half of 2008 and the rest expire in subsequent years.

It is proposed to introduce the policy progressively. ESV will write to all L class licence holders and explain the process as it applies to them.

There will be further information on the proposed changes in due course.

Two drivers and a farmer were electrocuted on Victorian farms in 2006 when the trays of trucks delivering lime and fertiliser hit powerlines. The incidents occurred at Woorak West near Nhill, Bena in South Gippsland and at Mudgeegonga, near Myrtleford.

The following tips should be observed at all times:

- Identify all areas where powerlines cross properties
- Obtain a copy of the “No Go Zone” rules and regulations and study them closely;
- Identify all electrical hazards before starting work. If in any doubt contact the local electricity distribution company;
- Monitor weather conditions. Powerlines can sag in extreme heat and sway in strong winds;
- Powerlines can be difficult to see at dawn and dusk;
- Remember that electricity can jump gaps;
- Ensure an ESV registered spotter is on hand when working anywhere near overhead powerlines;
- Never raise the tray of tipper trucks when underneath powerlines;
- Relocate bulk delivery storage sites to a safe area away from powerlines;
- Display “LOOK UP AND LIVE” stickers on any machinery or equipment which is raised overhead.

Bilfinger Berger Services (BBS) is a specialist contractor with a reputation for delivering high quality, cost effective operations, maintenance and augmentation services to owners of major infrastructure assets including power, gas, communications and water.
Allen became a familiar figure around Victoria with his work, on the one hand in his role as the gas installation inspector in Melbourne’s central business district for 18 years and then his travels around the state presenting at training seminars – sometimes as many as 50 in a year.

Allen started work as an apprentice plumber and gasfitter at the Gas and Fuel’s Fitzroy yard in what was a totally different era to that experienced today. He recalls being part of a team of two who used bicycles to travel around North Melbourne installing gas appliances and consumer piping.

They had to take their materials with them on the bicycles, and if they forgot anything they would need to ride back to Fitzroy to get it. What happened when it rained? “We just got wet,” he said.

After graduating to work maintaining gas appliances, Allen was then involved for six months in 1962 converting Castlemaine from towns gas supply to tempered liquefied petroleum gas.

In 1968 Allen joined the Colonial Gas Company in Box Hill as a maintenance fitter and out-of-hours emergency fitter. In those days, the phones were switched to the fitters’ homes and it was often their wives who took calls when their husbands were out on other jobs – and sometimes had to endure customer abuse for their trouble!

Two years later Allen became an installation inspector and when the Colonial Gas Company merged with the Gas and Fuel Corporation in 1972, Allen found himself back where he started – at the Fitzroy yard.

It was then that he became the installation inspector for the CBD. It was a busy time – the oil scare was on and most buildings were switching from oil to gas for heating supplies.

With the split up of the G&FC Allen worked for the northern region and when the chance came to join the newly established Office of Gas Safety as a gas inspector he took it. He became Installation Manager in 2001 and made the switch to ESV in August 2005.

Allen is such an expert in his field that his advice and experience is often appreciated around Australia – for example, recently he was requested to provide training seminars in Darwin.

“I have enjoyed my time and I am going to miss a lot of it. I certainly enjoyed travelling and talking to people at the training seminars – it’s something I have been doing for more than 30 years. It used to get busy on the training side when new codes and standards were introduced. Sometimes we would be conducting more than one seminar a week,” he told energiesafe.

Modest about his sporting achievements, Allen did admit to playing football at a reasonably high level against the likes of Barry Davis and Fraser Evans in their junior days.

Later tennis became a passion and he played to a high standard until just a couple of years ago. He was also in charge of the courts at Viewbank for the Under 16 Australian Championships when it featured the likes of Pat Cash, Mark Kratzman and Elizabeth Minter.

He also admits to being “an old rocker” from way back and is very proficient on the electric guitar. “Bill Haley And The Comets and their ‘Rock Around The Clock’ was my downfall,” he said.

ESV and the gas industry wishes Allen a long and happy retirement, which he richly deserves.

89-year-old receives burns in gas cooker incident

ESV has investigated an incident at Belmont, near Geelong, in which an 89-year-old woman received burns injuries from her cooker on the same day that her time expired gas meter was changed over.

The victim was taken to hospital after her hair caught fire and she received burns to her face, left hand and wrist. She has lived at the property for some 60 years while the upright cooker in question – the only gas appliance in the house – was installed about 45-years-ago.

In a statement provided to ESV, the victim said she had been informed by the gas company that the meter was about to be changed over.

Early in February she found a notice in her mailbox explaining that the work had been carried out.

She said she rang the telephone number printed on the notice and an operator at the gas company explained the process for turning on the valve at the gas meter. After doing so, the victim went back into the house and turned on a gas burner and ignited the flame with a match.

As the burner flame was burning correctly she immediately turned off the gas control knob.

A short while later she placed a lunch pack supplied by the Meals on Wheels service into the oven, and then turned the thermostat to around mark 350. She ignited the oven burner with a match. Later she turned off the thermostat knob and opened the oven door.

It was then that a flame rolled out setting fire to her hair and causing the burns injuries. The victim told ESV she closed the oven door and immediately placed a pack of frozen peas on her face.

She was taken to Geelong Hospital by ambulance and returned home after treatment.

ESV’s investigations are so far inconclusive. Tests have been carried out on the cooker but any similar flame roll out has not been recreated.
ESV assists investigations into fires involving evaporative air conditioners

VICTORIA’S FIRE AUTHORITIES - THE MFB AND CFA - HAVE REPORTED SIGNIFICANT INCREASES IN THE NUMBER OF AIR CONDITIONER AND EVAPORATIVE COOLER FIRES IN VICTORIAN HOMES OVER RECENT MONTHS.

ESV is working with the authorities investigating possible problems with evaporative air conditioners, some of them roof mounted, following increased reports of both fires and incidents where smoke has entered homes.

“While these reports are of concern to ESV and the fire authorities, investigations are at an early stage and we do not have enough at this time to ascertain if there is a significant problem with evaporative coolers,” said Director of Energy Safety, Ken Gardner.

ESV has met with CFA and MFB representatives and agreed to investigate as many of the fire reports as possible. In some incidents, investigators have found that fan motor start/run capacitors have ruptured and produced smoke but not caused fires.

“Meanwhile we appeal to all electricians called out to work on evaporative air conditioners to check the state of capacitors to determine if there is any deterioration and/or damage, and inform ESV of their findings,” said Ken.

“We will of course continue to review the situation and take whatever action is deemed necessary.”

ESV assists investigations into fires involving evaporative air conditioners

A DAMAGED ROOFTOP EVAPORATIVE AIR CONDITIONER EXAMINED BY ESV RECENTLY
A RUPTURED FAN MOTOR START/RUN CAPACITOR DETECTED IN ONE AIR CONDITIONER

New ProTag Optima System

Australia's Most Compact Appliance Testing and Tag Printing System.

The new ProTag Optima System tests portable appliances and RCDs, and prints test tags in a compact system weighing only around 2kg.

No interface cables between the tester, printer and scanner provide maximum mobility on construction sites, factories and workshops.

Light weight, wireless, battery powered and with logging of visual inspections and risk assessments, the Optima System guarantees greater efficiency, huge time savings and a lower cost per tag.

Call EMONA Instruments on tel: 03 9889 0427 email: testinst@emona.com.au or www.protag.com.au
new campaign warns of the dangers of overhead powerlines

AN EXTENSIVE PUBLIC AWARENESS CAMPAIGN WILL BE CONDUCTED BY ESV ACROSS REGIONAL VICTORIA DURING MARCH WARNING OF THE NEED TO “LOOK UP AND LIVE” WHEN IN PROXIMITY TO OVERHEAD POWERLINES. THE CAMPAIGN IS BEING SUPPORTED BY ELECTRICITY DISTRIBUTION COMPANIES, SP AUSNET AND POWERCOR.

There was a similar campaign in 2007 to coincide with the start of the main season for deliveries of bulk supplies of fertiliser, lime and other materials to farms. It followed the three deaths which resulted from vehicles touching powerlines on rural properties in 2006.

Centrepiece of the campaign will be the television commercial produced by ESV in late 2006 and shown for the first time in early 2007 which directly targets truck drivers and farmers. A corresponding radio version will be aired across regional stations.

“Look Up And Live” brochures, stickers and posters are continually being distributed throughout the State to maintain awareness of the dangers when working near powerlines.

The overriding message of the brochure is: “Be Alert, Be Aware – Overhead Powerlines Are Always There.” One of the stickers, which can be placed on the inside of windscreens, details the safe working distances which must be observed between trucks, machinery and power poles.

Supplies of stickers and brochures are available from ESV by telephoning 9203 9700 or 1800 800 158. Alternatively send an email to info@esv.vic.gov.au

Director of Energy Safety, Ken Gardner, told energy safe that everyone involved in the delivery of materials to farms must exercise the appropriate duty of care.

“Farmers and truck drivers need to always ‘Look Up And Live’. But farmers have the added responsibility of ensuring that the drop off point for deliveries is located well clear of powerlines. Similarly if truck drivers have concerns they should refuse to make the deliveries.”

“If as a very last resort there is no alternative but to deliver materials near powerlines, then everybody involved has to be fully aware of the precautions required.

“Responsibility for safety must be extended beyond the farm yard. Suppliers of farm materials should ascertain when orders are taken the location of the delivery point, the proximity of powerlines and what safety precautions are in place should there be powerlines in the vicinity.

“Unfortunately, experience shows that everyone – particularly truck drivers, property owners and farm workers - involved in the delivery of lime, fertiliser and other bulk material to farms is at risk from electrocution because of trucks touching powerlines,” said Ken.
young man’s lucky escape in powerline incident

A young man received a serious electric shock and burn when a powerline fell onto a front end loader at Thomastown recently. He was lucky not to have been electrocuted in the incident.

It was reported that the man and two others went to visit a friend at a work site which was a paddock covered in mud, large mounds of soil and building rubbish.

By all accounts their car got bogged and a front end loader was used to drag the vehicle out of the mud.

A chain was connected to the car and the bucket of the excavator and the operation to remove the car was completed successfully.

The young man in question then removed the chain from the car and went to remove it from the bucket of the excavator.

It was at this point that the excavator started to roll back and in so doing hit a power pole. This caused a 22000 volts conductor to fall and come to rest on the top roof of the excavator.

The victim was taken to hospital by ambulance after he received the electric shock and a burn to the inner thigh on his left leg.

The electrical protective device operated and isolated the fault.

handy safety hint. tell your customers:
Never leave an electrical appliance where it can fall into the bath or basin.
Don’t leave unattended with children. Unplug after use.

AS/NZ WIRING RULES 3000:2007
STIPULATE EARTH RODS NEED TO BE 250 MICRONS COATED.

Unitech® range of Earth Rods & accessories fully comply with the NEW AS/NZ 3000:2007 5.3.6.2 Standards.

Clamps & Accessories

- **EC130** Earth Clamp for 13mm
- **CL602** Earth Clamp for 16mm
- **EC19** Earth Clamp for 19mm
- **CP502** Copper Alloy Coupling
- **DS81** Driving Stud
- **DH2** Driving Head

omega-power.com.au  sales@omega-power.com.au

VIC  (03) 9793 6111  NSW  (02) 9734 9944
GLD  (07) 3216 2799  SA  (08) 8340 9200
WA  (08) 9475 0777
switching to energy efficient lighting

An article supplied to energysafe by the Department of the Environment, Water, Heritage and the Arts.

LIGHTING PLAYS A VERY IMPORTANT PART IN THE DESIGN OF AUSTRALIAN HOMES AND OFFICES. DEMAND FOR BOTH EFFECTIVE AND ENERGY EFFICIENT LIGHTING SYSTEMS BY HOME OWNERS CAN AT TIMES LEAVE ELECTRICAL CONTRACTORS AND ELECTRICIANS WONDERING JUST WHAT LIGHTING PRODUCTS WILL CREATE THE BEST LIGHTING OUTCOME IN THE MOST COST-EFFECTIVE MANNER.

While there are a number of lighting options for today’s consumer, not all of them are cost-effective or the best choice in terms of efficient energy use. One of the biggest energy offenders is the incandescent or General Lamp Service (GLS) (pear shaped) bulb, which is a form of incandescent lamp.

The GLS light bulb has been available for more than 125 years, and while inexpensive to buy, typically fails after only 1,000 hours of use and consumes excessive amounts of electricity, leading to high running costs. In fact almost all of the electrical energy going into these bulbs is converted to heat rather than light.

In February 2007 the Australian Government announced plans to phase-out these bulbs and other inefficient incandescent light bulbs by 2009-10. The initiative is expected to reduce Australia’s greenhouse gas emissions by several million tonnes over the next few years, and cut household lighting costs by up to 66 per cent.

GLS bulbs will be phased-out first with other incandescent lights (including the least efficient of halogen down lights) following in a planned approach of phasing-out inefficient lighting where effective and efficient alternatives are available.

Lighting alternatives include compact fluorescent lamps (CFLs) that use around 20 per cent of the electricity to produce the same light, and last four to 10 times longer than the GLS bulb. Compatibility of CFLs with installed dimmers should be checked carefully. Halogen lights that meet the new efficiency standards will also become available.

The Australian Government will use minimum energy performance standards (MEPS) based on Australian and New Zealand standards, to ensure that only those lighting products that meet the specified energy efficiency levels will be sold in Australia.

Standards for CFLs will also apply to ensure that only good quality products will be sold in Australia. Aspects covered will include: run-up time, colour appearance, mercury content, and lamp lifetime.

It’s also worth noting, that despite popular myths, low voltage halogen down lights are NOT an efficient choice for lighting of medium to large spaces. For example, installing ten x 50 watt down lights will lead to energy consumption of more than 500 watts. In many cases, the same job could be done with CFLs which would use less than 100 watts in total.

It’s clear that using more energy efficient lighting is beneficial on a number of levels: both in cutting energy bills and reducing impacts to the environment (less electricity means less greenhouse gas emissions).

As an electrical professional please remember these considerations when next advising your clients on their lighting needs, ensuring that what you advise and install meets the upcoming Australian Government requirements. For more information about the initiative please visit www.greenhouse.gov.au/energy/cfls/index.html

Keep an eye out for more articles about the lighting initiative in future issues of energysafe.
QuickCable-LT™ is a simple, easy to use cable sizing calculator, with many added functions, including conduit sizing, maximum demand, fault-loop impedance and power factor correction.

$395.00 +GST

QuickCable-LT™ Features

- Maximum Demand to
  AS/NZS 3000:2000
- Cable Sizing to AS/NZS 3008.1
- Conduit Sizing
- Fault Loop Impedance to
  AS/NZS 3000:2000
- Volt Drop Calculator
- Fault Level Calculator
- Circuit Breaker Selection
- Time Current Curves
- Power Factor Correction
- Extensive Reporting
- Internet Support

QuickCable-LT™ provides the practical solution for Electricians – Everything you need to size cables, conduits and check fault-loop impedance for small jobs to AS/NZS 3000 and AS/NZS 3008.1

Quick to learn, easy to use.

PowerCad™ brings you innovative electrical design software through ongoing research and development.
Working in hazardous areas

I refer to the most recent edition of the energy safe magazine, page 24- More Commonly Asked Electricity Questions - c) relating to license requirements to work in hazardous areas.

The response given is correct. However it could have been more specific and added that Australian Standard AS4761:2003 - Competencies for working with electrical equipment in hazardous areas (EEHA) addresses the specific competencies required to perform hazardous area work and specifically that Competencies UTE NES 010B, 012B, 107B and 214B are the minimum knowledge base required for installation and maintenance activities.

I raise this as my work is primarily related to design and supervision of installations in Hazardous Areas and I hold all required competencies. I find that most electricians who have not had formal training to the Competencies stated do not have the necessary skills and knowledge to perform the work to the required AS2381 installation standards and many do not know how to fit off a barrier gland which is fundamental.

Perhaps in the interests of promoting compliance with Australian Standards and encouraging those who would perform hazardous area work to do so safely and to the applicable standards, you could make mention of AS4761 in the next edition.

Thank you for your attention.

David Little

Legal requirements under the O.H.&S. Act

On page 24 of the current issue of energy safe an answer is given to a question about electrical work in hazardous areas. The answer, in part, says ‘Many industries require...... when working in hazardous areas’. Electricians, reading this, could assume that it is an optional requirement/a good idea etc.

I think that some mention should have been made of the legal requirements under the O.H.&S. act. There are two separate requirements:

1. Employers (including contractors and sub-contractors) must ensure that their employees have proven competence.

2. Employees have a legal obligation not to carry out work on equipment/installations unless they are demonstrably competent.

In practice, if an electrician carries out work in a hazardous area without having proven competency, they leave themselves open to prosecution. For their protection could you add something about this in your next edition?

There is another legal pathway to enforcing the use of competent workers.

AS/NZS 3000, clause 7.7.2.4.2 mentions HAW competencies and mandates the use of AS/NZS 2381.1. Clause 1.7 of this standard mandates the use of competent workers.

It may even mention the competencies described in AS/NZS 4761.

Keep up the good work with the magazine - it is really very informative.

Peter Turner

“Keep up the good work with the magazine - it is really very informative.”
THE FIRE AT THE BROADFORD RSL HALL IN JANUARY WHICH RESULTED IN THE DESTRUCTION OF IRREPLACEABLE WAR AND MILITARY SERVICE MEMORABILIA AND WHICH WAS A MAJOR FOCUS OF MEDIA REPORTS AT THE TIME, PROBABLY RESULTED FROM AN ELECTRICAL FAULT, AN ESV INVESTIGATION HAS CONCLUDED.

A preliminary report of ESV investigations said an onsite inspection with a CFA investigator revealed that the northwest corner area of the RSL Club building appeared to be the original source of the fire.

“At this location was situated the incoming electrical service cable – approximately three metres back from the street location. Remnants of SERF type fuses were located below the original switchboard location. A close inspection further revealed that four single 40-watt fluorescent light fittings were also located in the north west area of the structure.

“It is understood that these fittings were originally located within a pelmet structure for the illumination of a memorabilia display located on the north wall. One of the light fittings indicated clear evidence of 1/064 active and neutral copper conductors. Pendulous bulbs of molten copper were clearly visible where they were positioned over the fluorescent’s ballast.

“It appears extremely likely that this may have been the origin of the fire. The insulation afforded the conductors was not able to be verified as all cable insulation were destroyed during the fire – none was evident at this location.

“It has not been established whether the light fittings were energised at the time immediately prior to the time of the conflagration,” said the ESV report.

The Age reported on the day after the fire that the memories of generations had turned to ash in the blaze. Military medals, photos, flags and weapons were among the items destroyed or left blackened by the fire.

RSL sub-branch president Ron Johnson was quoted as saying that the 65 members were devastated by the loss of the hall and its priceless memorabilia. “It’s like losing an old friend,” he said. “It’s real bad.”

Military medals for bravery had been among the pieces on display, their ceremonial ribbons burnt by the flames. Some of them dated back to World War 1.

A report in the Herald Sun said three-quarters of the building was destroyed by the fire with the damage bill estimated at $300 000.
“With rigorous safety procedures, even though we were working 88 floors above the ground, it wasn’t any less safe than working on the ground floor.”

“With rigorous safety procedures, even though we were working 88 floors above the ground, it wasn’t any less safe than working on the ground floor.”

PHOTOGRAPHS BY MICHAEL WEARNE, ALAN BEARD AND CHARLOTTE ROSEBY.

electrician enjoys view from the top
The Eureka Tower is the world’s tallest residential tower and the Skydeck is the highest public vantage point in the Southern Hemisphere.

Chris was involved in the Skydeck project right from the concept stage; in fact it was three and a half years before he stepped on site, and two years before he even saw the drawings. The Skydeck was an ambitious project, with a complex set of highly orchestrated LED sound and vision effects designed by architects and lighting designers to enhance the viewing experience for visitors.

The real fun started when it was finally time to install. The very first challenge for Chris and his team was to get all the equipment up to the site. “There was just a tiny service lift. Any decent-sized switchboards had to be cut up to fit,” says Chris. “We estimated that there was one guy in the lift for five weeks, once we added it all up.”

When they reached the top, the OzSpark team realised they were about to start work, 300 metres up, before the windows went in. “There was plenty of chicken wire keeping us from the edge,” says Chris.

“With the wind and the noise up there, it wasn’t as much fun as it sounds. We worked in August when it was 3 degrees on the ground, and it was about minus 6 up there.”

“With rigorous safety procedures, even though we were working 88 floors above the ground, it wasn’t any less safe than working on the ground floor.”

Installation of the three floors of the observation deck, the retail, café and function areas took 10 months, 6 days a week.

This was such a challenging job, says Chris, because one of the main design objectives was to conceal the complex lighting effects behind ceiling baffles. This meant completing just one section of the room at a time. “There were plumbers, builders, electricians and plasterers all working together, at height,” says Chris.

With 35 large panels, each with 256,000 LEDs, the light shines up at the ceiling and is reflected back down through metallic air ducts and ceiling panels, something never done before in Melbourne. With each light costing around $3000, this was a major expense and a major part of the installation.

“They wanted to keep people guessing,” says Chris. “All the walls change colour, but you can’t see where the colour change comes from.”

The result is a space jam-packed with atmosphere. LED signs that detail interesting facts about Melbourne flash across the walls and floors, propelling you around the 360-degree windows, ogling at the view, the lights seem to follow. Daylight sensors trigger lights where you are standing, making it feel even higher than you really are. The lights are matched by audio effects that echo the sounds of Melbourne so, as you look out at Flinders St, for example, you hear the trains and the crowds at the station and the trams rumbling along Swanston Street.

These effects are run through a computerised system called Dynalight. Light levels are all pre-programmed. The actual power installation was pretty basic, but the computer control was a highly involved process, says Chris. “There was an extra 40 people behind the scenes just to get the lighting right.”

If you don’t feel giddy enough gazing down at tall buildings, then The Edge “ride” is for you: an elevator-like cube moves 3 metres out from the building so you are suspended for a few minutes over the city. Just as you get used to the view, the frosted glass on all six sides of the cube suddenly goes clear, and it appears that there is only a thin layer of clear glass between you and the world below you.

Chris is happy to give away a couple of trade secrets: “The glass is made up with LED panels, so when there is a current running through the glass, it gives the perception that it is cloudy and frosted. When it is de-energised, it goes clear. That was a basic switching program run through the computer.”

“We worked in August when it was 3 degrees on the ground, and it was about minus 6 up there.”

“It was a very simple idea with a very complex execution. A lot of the hard work was done in the drawings and working out the relays.”

This is one project Chris Bakes certainly won’t forget. “The view was incredible and working up there certainly gave us a different perspective of Melbourne. The hot air balloons floating around you was a nice way of starting the morning, and seeing the Commonwealth Games fireworks below us was fantastic.”

Eureka!

> Eureka Tower took 4 years to complete and cost approximately $500 million.
> The tower used 110,000 tonnes of concrete and weighs 200,000 tonnes.
> The top of the tower can flex up to 600mm in high winds. Two 300,000 litre water tanks on levels 90 and 91 help to dampen the oscillations.
> Horizontal white lines on Eureka Tower represent the linear line markings on a surveyor’s measuring staff.
An LEI was charged with two counts of failing to record defects on an inspection certificate. The defendant was convicted, fined $1200 and ordered to pay costs of $2500.

An REC was charged with giving information to ESV that is misleading in a material particular. The defendant was fined $750 without conviction and ordered to pay costs of $2500.

An REC was charged with installing unsafe electrical equipment. The defendant gave an undertaking to be of good behaviour for 12 months, was ordered to pay $750 to the court fund and a further $1500 costs.

An REC was charged with five counts of carrying out work that does not comply with the Act and Regulations. The defendant was convicted, fined $6000 and ordered to pay a further $2740 costs.

An REC was charged with installing unsafe electrical equipment. The defendant was fined $1000 without conviction and ordered to pay costs of $1250.

An REC was charged with eight counts of carrying out work that does not comply with the Act and Regulations. The defendant was convicted, fined $5000 and ordered to pay copsts of $1500.

An LEW was charged with giving information to ESV that is misleading in a material particular. The defendant was fined $750 without conviction.

An LEI was charged with two counts of failing to record defects on an inspection certificate. The defendant was convicted, fined $1200 and ordered to pay a further $2500 in costs.

> An REC was charged with installing unsafe electrical equipment and employing a person who is not a licensed electrical installation worker (LEIW). The defendant was fined $1000 without conviction and ordered to pay costs of $800.

> An REC was charged with two counts of installing unsafe electrical equipment, carrying out work that does not comply with the Electricity Safety Act and Regulations, and failing to have prescribed work inspected. The defendant gave an undertaking to be of good behaviour for 36 months.

> An LEIW was charged with two counts of installing unsafe electrical equipment, carrying out work that does not comply with the Electricity Safety Act and Regulations, and failing to have prescribed work inspected. The defendant gave an undertaking to be of good behaviour for 36 months and was ordered to pay $1300 costs.

> An LEIW was charged with carrying out electrical contracting work whilst not registered, carrying out work that does not comply with the Act and Regulations, and failing to have prescribed work inspected. The defendant gave an undertaking to be of good behaviour for 12 months, ordered to pay $750 to the court fund and a further $1500 costs.

> An REC was charged with five counts of carrying out work that does not comply with the Act and Regulations. The defendant was convicted, fined $6000 and ordered to pay a further $2740 costs.

> An REC was charged with installing unsafe electrical equipment. The defendant was fined $1000 without conviction and ordered to pay costs of $1250.

> An REC was charged with eight counts of carrying out work that does not comply with the Act and Regulations. The defendant was convicted, fined $5000 and ordered to pay copsts of $1500.

> An LEW was charged with giving information to ESV that is misleading in a material particular. The defendant was fined $750 without conviction and ordered to pay costs of $2500.

> An REC was charged with giving information to ESV that is misleading in a material particular. The defendant was fined $750 without conviction.

> An LEI was charged with two counts of failing to record defects on an inspection certificate. The defendant was convicted, fined $1200 and ordered to pay a further $2500 in costs.

ESV HAS RECENTLY TAKEN LEGAL PROCEEDINGS UNDER THE ELECTRICITY SAFETY ACT 1998 AGAINST THE FOLLOWING. UNDER THE PRIVACY ACT, energiesafe IS PRECLUDED FROM PUBLISHING THE NAMES OF INDIVIDUALS CHARGED WITH OFFENCES.

<table>
<thead>
<tr>
<th>Date</th>
<th>REC/LEW/Other</th>
<th>Offence Code</th>
<th>Offence Description</th>
<th>Penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 07</td>
<td>REC</td>
<td>6373</td>
<td>Fail to display number</td>
<td>$1,074</td>
</tr>
<tr>
<td>REC</td>
<td>6373</td>
<td>Fail to display number</td>
<td>$1,074</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6373</td>
<td>Fail to display number</td>
<td>$1,074</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6373</td>
<td>Non complying installation work</td>
<td>$2,686</td>
<td></td>
</tr>
<tr>
<td>Mar 07</td>
<td>Other</td>
<td>6384</td>
<td>Supply equipment not approved</td>
<td>$2,149</td>
</tr>
<tr>
<td>Other</td>
<td>3589</td>
<td>Gas fitting work did not comply</td>
<td>$2,149</td>
<td></td>
</tr>
<tr>
<td>Apr 07</td>
<td>REC</td>
<td>6377</td>
<td>Non complying installation work</td>
<td>$2,620</td>
</tr>
<tr>
<td>REC</td>
<td>6377</td>
<td>Non complying installation work</td>
<td>$2,620</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Fail to have work inspected by inspector</td>
<td>$2,149</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Fail to have work inspected by inspector</td>
<td>$2,096</td>
<td></td>
</tr>
<tr>
<td>May 07</td>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate within time</td>
<td>$107</td>
</tr>
<tr>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6241</td>
<td>Fails to complete certificate</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>Jun 07</td>
<td>REC</td>
<td>6210</td>
<td>Fail to display number</td>
<td>$215</td>
</tr>
<tr>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Fail to have work inspected by inspector</td>
<td>$2,149</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6243</td>
<td>Fails to lodge copy with the Office</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>Jul 07</td>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>$537</td>
</tr>
<tr>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>$537</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>$537</td>
<td></td>
</tr>
<tr>
<td>Aug 07</td>
<td>OTHER</td>
<td>6348</td>
<td>Damages a network asset</td>
<td>$220</td>
</tr>
<tr>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>$537</td>
<td></td>
</tr>
<tr>
<td>Sep 07</td>
<td>OTHER</td>
<td>6253</td>
<td>Supply equipment not approved</td>
<td>$440</td>
</tr>
<tr>
<td>REC</td>
<td>6243</td>
<td>Fails to lodge copy with the Office</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>Oct 07</td>
<td>OTHER</td>
<td>6335</td>
<td>Closer than distance allowed in Table 40</td>
<td>$220</td>
</tr>
<tr>
<td>OTHER</td>
<td>6253</td>
<td>Supply equipment not approved</td>
<td>$440</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6241</td>
<td>Fails to complete certificate</td>
<td>$107</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate in time</td>
<td>$107</td>
<td></td>
</tr>
</tbody>
</table>

**Infringement Notice Summary**

<table>
<thead>
<tr>
<th>Month</th>
<th>Type</th>
<th>Code</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 07</td>
<td>REC</td>
<td>6215</td>
<td>Fail to display number</td>
<td>10</td>
</tr>
<tr>
<td>REC</td>
<td>6373</td>
<td>Fail to display number</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6373</td>
<td>Fail to display number</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6373</td>
<td>Non complying installation work</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Supply equipment not approved</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Supply equipment not approved</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Apr 07</td>
<td>REC</td>
<td>6377</td>
<td>Non complying installation work</td>
<td>20</td>
</tr>
<tr>
<td>REC</td>
<td>6377</td>
<td>Non complying installation work</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Fail to have work inspected by inspector</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Fail to have work inspected by inspector</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>May 07</td>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate within time</td>
<td>20</td>
</tr>
<tr>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6241</td>
<td>Fails to complete certificate</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Jun 07</td>
<td>REC</td>
<td>6210</td>
<td>Fail to display number</td>
<td>20</td>
</tr>
<tr>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6228</td>
<td>Fails to complete certificate within time</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6378</td>
<td>Fail to have work inspected by inspector</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LEW</td>
<td>6243</td>
<td>Fails to lodge copy with the Office</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Jul 07</td>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>20</td>
</tr>
<tr>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Aug 07</td>
<td>OTHER</td>
<td>6348</td>
<td>Damages a network asset</td>
<td>20</td>
</tr>
<tr>
<td>OTHER</td>
<td>6220</td>
<td>Unlicensed electrical installation work</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Sep 07</td>
<td>OTHER</td>
<td>6253</td>
<td>Supply equipment not approved</td>
<td>20</td>
</tr>
<tr>
<td>REC</td>
<td>6243</td>
<td>Fails to lodge copy with the Office</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Oct 07</td>
<td>OTHER</td>
<td>6335</td>
<td>Closer than distance allowed in Table 40</td>
<td>20</td>
</tr>
<tr>
<td>OTHER</td>
<td>6253</td>
<td>Supply equipment not approved</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6241</td>
<td>Fails to complete certificate</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>REC</td>
<td>6242</td>
<td>Fails to give certificate in time</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>
warning from ESV: metering antenna mounting bracket found to be “live”

LATE LAST YEAR ESV ISSUED A SAFETY ALERT AFTER A LICENSED ELECTRICIAN RECEIVED A SHOCK WHILE WORKING NEAR ELECTRICAL METERING COMMUNICATIONS EQUIPMENT.

At the time he was installing cables in a metal duct located next to the electrical metering panel, and made simultaneous contact with the duct and a “live” metallic antenna mounting bracket associated with the metering equipment.

The antenna mounting bracket was fixed to the meter panel with two 23mm self-tapping metal screws.

The screws protruded though the front and the rear of the meter panel and penetrated into the single insulation cables within the metering enclosure, therefore allowing the screws and the metal bracket to become “live”.

This method of installation is contrary to the fundamental safety requirements of AS/NZS 3000:2000 in that the bracket should have been attached with insulated screws.

As a result of the screws penetrating the single insulated cable, the antenna mounting bracket was measured to be “live” at 247.9 VAC.

Warning: metallic antenna mounting brackets fixed with metal screws should be treated as “live”.

ESV estimates there are more than 5000 sites across Victoria where there may be similar installations.

handy safety hint. tell your customers:
Do not use a portable electrical radiator in the bathroom.
A permanently installed heater is much safer.

energy: safe advertorial – an article supplied by Protect

fund administration software a winner

A six month independent research project has documented the importance of Protect’s decision to commission purpose built, leading edge fund administration software.

Rosy Buchanan & Associates draft report sets out the effectiveness of the administration software and the subsequent savings to employers.

In place since July 2006, the administration software allows employers to work online – to lodge both paperwork and payment electronically.

“Information ….. from ….. businesses ….. overwhelmingly endorse the time savings …..”, the report says.

“…… 90% provided feedback that the time spent on monthly returns had been reduced by between 50% - 80%”, the report added.

With both industrial and commercial obligations to provide paperwork and payment within business rule guidelines, the administration software is proving a winner for employers and Protect.

1,250 employers provide monthly contributions for 27,000 employees. The monthly contributions comprise severance, income protection and training levy components which must be provided in a manner allowing allocation to individual employee accounts.

In commissioning the administration software, Protect was determined to make available a program which would provide accurate, speedy and user friendly access.

Rosy Buchanan & Associates report indicates those benchmarks have been well met.

Protect will give detailed consideration to the report in the coming weeks and consider a range of recommendations including the creation of an IT Field Support Officer.

The report indicates the creation of such a position will greatly assist small businesses gather the necessary skills and confidence to fully utilise the capacity of the software.

Investing in even further administration software advances will keep Protect at the top of fund administration and further help streamline the business operations of a large number of employers.

Protect works hard to provide vital financial security for workers in the electro trades when you need it most – if you are sick, injured or out of work.

Electro trade workers know that Protect’s income protection insurance provides a wider range of illness and injury benefits than any other scheme in the country.

To find out more, or to make a claim
Go to www.protect.net.au
or call 1300 134 417
amendments to the Electricity Safety Act to ensure unsafe work is rectified

THE ELECTRICITY SAFETY AMENDMENT BILL 2007 – THE SUBJECT OF TWO ARTICLES ON PAGE 14 OF ISSUE 10 OF energiesafe – HAS BECOME LAW.

The new Act amends the Electricity Safety Act 1998 to:

> mandate submission of and, once approved, compliance with electricity safety management schemes by major electricity companies, namely electricity transmission and distribution owners or operators;

> harmonise the safety management scheme regime in the Electricity Safety Act 1998 with the gas safety case regime in the Gas Safety Act 1997;

> require registered electrical contractors and licensed electrical workers to rectify their defective electrical work that is unsafe;

> improve the representation of the railway and tramway industries on the Victorian Electrolysis Committee.

As a reminder for readers on what the legislation contains, the Act provides that Energy Safe Victoria may, by written notice, require a registered electrical contractor or licensed electrical worker that carried out unsafe work to rectify it at no additional expense to the customer. Penalties apply for non-compliance with a rectification notice.

However, an REC or LEIW can avoid a notice under the bill, and the risk of a penalty for non-compliance, by rectifying unsafe work promptly - as he or she would be contractually bound to do anyway.

By providing for the issue of rectification notices, the Act ensures that defective work that is unsafe is made safe as soon as possible, and regardless of whether the consumer chooses to enforce his or her contractual rights.

Compliance with a notice from ESV to rectify unsafe and defective work is subject to the right of review by the Victorian Civil and Administrative Tribunal.

The rectification work is to be at no additional expense to the customer. Rectification of unsafe defective electrical work may include the labelling of switchboards, the securing and protection in position of cables and the secure installation of equipment, said the Minister.

The Act also makes it mandatory for Victoria’s electricity transmission and distribution network operators to submit electricity safety management schemes (ESMS) to ESV every five years.

An ESMS specifies the assets or operations to which it applies, the hazards and risks to persons and property arising from those assets or operations, and the safety management system to be followed to minimise as far as practicable those hazards and risks.

The benefits include lower compliance costs under the ESMS regime compared to prescriptive regulations and improved safety performance.

By aligning, where appropriate, the gas and electricity safety regimes the Act reduces the regulatory burden for those entities operating in both the electricity and gas industries.

The Act enables ESV to conduct audits to determine compliance with an ESMS.

---

ALL YOUR DOWNLIGHT PROTECTION COVERED

Insulguard Enclosure & Retro Downlight Covers. The simple and effective way to protect downlights.

**Insulguard - Downlight Enclosure**

- Protects downlights & transformers from thermal insulation
- Treated with non-toxic fire retardant
- Made from environmentally friendly recycled pulp
- Complies with wiring rules (AS/NZ 3000:2007) Recessed luminaries - clause 4.5.2.3 method (b)
- Tested to AS1530-Part 2 (Flammability Test)
- Independently heat tested to 600°c
- Packs flat for easy storage
- Pre-cut 70 - 90mm downlight hole

**Retro - Downlight Cover**

- Complies to new electrical wiring rules for downlights
- Retrofit existing downlights
- Small and compact
- Can be placed through existing downlight hole
- Two sizes to cover most downlight installations: 70mm & 90mm
- Metal perforation for air circulation
- Transformer attachment included

---

Omegapower.com.au

<table>
<thead>
<tr>
<th>VIC</th>
<th>NSW</th>
<th>QLD</th>
<th>SA</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>(03) 9793 6111</td>
<td>(02) 9734 9944</td>
<td>(07) 3216 2799</td>
<td>(08) 8340 9200</td>
<td>(08) 9475 0777</td>
</tr>
</tbody>
</table>

sales@omegapower.com.au

Note: does not include transformer or downlight
ESV fines two importers for supplying unapproved Christmas lights

ESV has issued infringement notices against two importers for supplying or offering to supply unapproved Christmas lights. The offences were detected during regular ESV compliance audits at the premises of the parties concerned.

ESV served a $2,202 Infringement Notice against a company and a $440 Notice against an individual - in accordance with Part 11A of the Electricity Safety Act. Both the company and the individual were also required to provide a written statement to ESV advising:

> why these Christmas Lights were being sold without Australian electrical safety approval;
> actions they are taking to ensure that all prescribed electrical equipment without electrical safety approval and any unsafe electrical equipment, is immediately withdrawn from supply;
> detailed list of all retail outlets they have supplied unapproved Christmas Lights to during 2007;
> actions they are taking to retrieve and destroy all unapproved and unsafe Christmas Lights that they and the retailers they supplied still have in stock;
> reason(s) why they should not conduct a recall of the already sold unsafe Christmas Lights; and
> that they understand the requirements of Sections 54, 57(2), 63 & 65 of the Act.

They were also warned that ESV will continue to monitor equipment supplied by them and may issue other Infringement Notices or other penalties for each breach of the Electricity Safety Act 1998.

ESV indicated to both parties that it was particularly concerned that the wiring on many of their Christmas Lighting products did not have adequate insulation thickness for safe operation at 240Vac and could result in the user receiving an electric shock.

In one instance, the individual had supplied about 200 units of one unapproved set of Christmas lights before ESV directed it to stop sales.

Both importers were advised that, under Section 57(2) of the Electricity Safety Act 1998:

“a person must not supply or offer to supply electrical equipment prescribed under subsection (1) unless the equipment –
(a) is approved by ESV and is marked as prescribed; or
(b) is approved by a prescribed authority or, under the regulations, is deemed to be approved; or
(c) is certified in accordance with a prescribed method or prescribed process.”

Decorative Lighting Outfits (including Christmas Lights & Rope Lights) and components (including Plug, Supply Cord and Control Devices) have been prescribed classes of electrical equipment for many years with the most recent prescription being on 7 August 2003 by notice published in the Victorian Government Gazette No. G31, on 31 July 2003.

Both the company and the individual had previously been advised on two occasions by ESV in recent years not to supply unsafe and unapproved prescribed electrical equipment.

Handy safety hint.
Tell your customers:
Even if you consider yourself to be handy around the home, DO NOT attempt electrical work of any kind. ALWAYS get it done by a registered electrical contractor – knowledge and experience of that person is your best protection.

HotShot Thermal Imagers
With In-Camera Data Logging and Next Inspection Route Mode.

Why spend hours collating image files and inspection details from hand written notes when generating reports with a point and shoot camera?

Next generation HotShot Thermal Imagers record all inspection details in-camera. Download thermal and visible light images, inspection details and temperature analyses to generate multi-page reports in minutes.

The next inspection Route Mode even prompts you on which inspection to carry out next. You’ll never use a point and shoot camera again!

Call EMONA Instruments on tel: 03 9889 0427 email: testinst@emona.com.au or www.emona.com.au
Qs and As

Q Can I use two flexible hoses from a copper manifold as consumer piping if each hose connects to one appliance only. The hoses will be installed inside the caravan for protection?

A The answer is no. The use of a hose as consumer piping is only permitted for connecting one appliance.

Q If I can install multi-layer (composite) piping above ground as long as protected from UV rays, why can’t I install UPVC above ground?

A The middle layer of composite piping is metal, and has been accepted for above ground use. UPVC has no metal component and has not been accepted for above ground use. A number of incidents have occurred when UPVC has been used (illegally) within premises and fittings have been snapped off.

Q We wish to install a by-pass around a safety shut-off system in the consumer piping for servicing purposes.

A You would have to formally apply to ESV for acceptance to install the by-pass. Acceptance would only be given in cases where continuation of gas supply is essential, eg in hospitals and some institutions etc.

ESV would require details of

> A written procedure for by-passing the shut-off system.

> The nominated key holders for any by-pass lock.

> Details of safety procedures preventing unauthorised use.

Q I am installing a cooktop and the wall behind is of a material called Caesar Stone. Is this classed as a fire resistant material?

A Caesar Stone is reconstituted stone with a binding compound that does not meet the requirements of AS 5601 Appendix C. A clearance of 200 mm is required from the nearest burner.

Gas Technical Help Line

Calls made to the Gas Technical Help Line (1800 652 663) are now handled by ESV’s Call Centre at Southbank. Details are then emailed to the duty inspector who contacts each caller in turn and answers the enquiry.

Although most calls can be answered quickly, you may be asked to provide further written, faxed or emailed information for more complex enquiries.

UV protection of multi-layer pipe

As explained in last edition of energysafe, gas companies are notifying ESV of installations where multi-layer pipe has not been protected from the effects of UV.

ESV has sent a number of warning letters to offending installers. Generally, the notification applies to the short amount of pipe between the meter assembly and the wall penetration.

Are you feeling the pressure?

THIS ARTICLE WAS WRITTEN BY KEVIN NATHAN, AN ESV TYPE B GAS INSPECTOR.

Pressure test points are one of the gasfitters most useful aids. They provide access to the consumer piping and valve train for the testing of supply pressures, setting of burner pressures and components, such as regulators and low pressure cut-off devices, etc.

The use of pressure points is also essential during commissioning to ensure the correct function of regulators, safety shut-off valves and leakage detection systems etc.

It is important to note that AS 3614 Industrial and commercial gas-fired appliances, Clause 2.12.3 states that -

A gas pressure test point shall be provided with a means of sealing the outlet and, where the operating pressure exceeds 7 kPa, it shall be of a self-sealing type or fitted with a manual shut-off valve.

The following photographs show the correct and incorrect use of test points at pressures greater than 7kPa.

Gas terminology and required action

ESV is using the following terminology for gas installations where there is cause for concern:

> Immediately Dangerous

An installation that, if left operating, will cause injury, death or property damage.

> At Risk

An installation that if left operating is likely to cause injury or damage to property.

> Not to standard

An installation that does not comply with current standards, but is unlikely to cause injury or damage to property. Includes those compliant with requirements at the time of installation but which are operating safely.

Some examples were provided in an earlier edition of energysafe.

Installers or service contractors coming across any Immediately Dangerous or At Risk installations should advise the owner and make safe the installation. If permission to make safe is not given, the details are to be reported to the National Response Centre (NRC) on 9411 3111. NRC will arrange further action.

Are you feeling the pressure?

THIS ARTICLE WAS WRITTEN BY KEVIN NATHAN, AN ESV TYPE B GAS INSPECTOR.

Pressure test points are one of the gasfitters most useful aids. They provide access to the consumer piping and valve train for the testing of supply pressures, setting of burner pressures and components, such as regulators and low pressure cut-off devices, etc.

The use of pressure points is also essential during commissioning to ensure the correct function of regulators, safety shut-off valves and leakage detection systems etc.

It is important to note that AS 3614 Industrial and commercial gas-fired appliances, Clause 2.12.3 states that -

A gas pressure test point shall be provided with a means of sealing the outlet and, where the operating pressure exceeds 7 kPa, it shall be of a self-sealing type or fitted with a manual shut-off valve.

The following photographs show the correct and incorrect use of test points at pressures greater than 7kPa.

Gas terminology and required action

ESV is using the following terminology for gas installations where there is cause for concern:

> Immediately Dangerous

An installation that, if left operating, will cause injury, death or property damage.

> At Risk

An installation that if left operating is likely to cause injury or damage to property.

> Not to standard

An installation that does not comply with current standards, but is unlikely to cause injury or damage to property. Includes those compliant with requirements at the time of installation but which are operating safely.

Some examples were provided in an earlier edition of energysafe.

Installers or service contractors coming across any Immediately Dangerous or At Risk installations should advise the owner and make safe the installation. If permission to make safe is not given, the details are to be reported to the National Response Centre (NRC) on 9411 3111. NRC will arrange further action.

Are you feeling the pressure?

THIS ARTICLE WAS WRITTEN BY KEVIN NATHAN, AN ESV TYPE B GAS INSPECTOR.

Pressure test points are one of the gasfitters most useful aids. They provide access to the consumer piping and valve train for the testing of supply pressures, setting of burner pressures and components, such as regulators and low pressure cut-off devices, etc.

The use of pressure points is also essential during commissioning to ensure the correct function of regulators, safety shut-off valves and leakage detection systems etc.

It is important to note that AS 3614 Industrial and commercial gas-fired appliances, Clause 2.12.3 states that -

A gas pressure test point shall be provided with a means of sealing the outlet and, where the operating pressure exceeds 7 kPa, it shall be of a self-sealing type or fitted with a manual shut-off valve.

The following photographs show the correct and incorrect use of test points at pressures greater than 7kPa.

Gas terminology and required action

ESV is using the following terminology for gas installations where there is cause for concern:

> Immediately Dangerous

An installation that, if left operating, will cause injury, death or property damage.

> At Risk

An installation that if left operating is likely to cause injury or damage to property.

> Not to standard

An installation that does not comply with current standards, but is unlikely to cause injury or damage to property. Includes those compliant with requirements at the time of installation but which are operating safely.

Some examples were provided in an earlier edition of energysafe.

Installers or service contractors coming across any Immediately Dangerous or At Risk installations should advise the owner and make safe the installation. If permission to make safe is not given, the details are to be reported to the National Response Centre (NRC) on 9411 3111. NRC will arrange further action.

Are you feeling the pressure?

THIS ARTICLE WAS WRITTEN BY KEVIN NATHAN, AN ESV TYPE B GAS INSPECTOR.

Pressure test points are one of the gasfitters most useful aids. They provide access to the consumer piping and valve train for the testing of supply pressures, setting of burner pressures and components, such as regulators and low pressure cut-off devices, etc.

The use of pressure points is also essential during commissioning to ensure the correct function of regulators, safety shut-off valves and leakage detection systems etc.

It is important to note that AS 3614 Industrial and commercial gas-fired appliances, Clause 2.12.3 states that -

A gas pressure test point shall be provided with a means of sealing the outlet and, where the operating pressure exceeds 7 kPa, it shall be of a self-sealing type or fitted with a manual shut-off valve.

The following photographs show the correct and incorrect use of test points at pressures greater than 7kPa.

Gas terminology and required action

ESV is using the following terminology for gas installations where there is cause for concern:

> Immediately Dangerous

An installation that, if left operating, will cause injury, death or property damage.

> At Risk

An installation that if left operating is likely to cause injury or damage to property.

> Not to standard

An installation that does not comply with current standards, but is unlikely to cause injury or damage to property. Includes those compliant with requirements at the time of installation but which are operating safely.

Some examples were provided in an earlier edition of energysafe.

Installers or service contractors coming across any Immediately Dangerous or At Risk installations should advise the owner and make safe the installation. If permission to make safe is not given, the details are to be reported to the National Response Centre (NRC) on 9411 3111. NRC will arrange further action.
ESV was called in by the CFA to investigate an incident at Frankston recently after a 70-year-old man received serious injuries when his brand new BBQ erupted into flames.

The victim was taken to Frankston Hospital suffering burns to his right leg, arms and face. He also experienced breathing difficulties after his airways were damaged.

The flames extended up to the roof of an external patio area, while the heat affected hanging plants adjacent to the BBQ.

When interviewed by ESV, the victim said he bought the new BBQ from a store in Frankston and paid an additional $70 for it to be assembled by a specialist company.

The BBQ was assembled and the victim was provided with a brief demonstration on how to operate it. Later in the day he decided to use the appliance, followed the instructions he had been given and activated the igniter.

The BBQ then erupted into flames. The CFA attended to put out the fire and the victim was taken by ambulance to hospital.

During its inspections of the BBQ, ESV found that the POL screwed connection into the cylinder valve was loose. This threaded brass POL connection could be hand tightened into the cylinder valve socket an additional one and one half revolutions.

ESV’s investigations included interviews with representatives of the assembly company and its contractor who assembled the BBQ in question.

Raypak Australia Pty Ltd has issued an urgent nationwide recall notice for pool and spa heaters installed after 1 July 2005.

There are about 5000 of the heaters in question in Australia, 3000 of them in Victoria.

Heaters with a built in control panel as illustrated in the recall notice are likely to be affected. Water inadvertently entering the unit could lead to a partial malfunction of the over-temperature thermostat control resulting in a risk of scalding.

Raypak have provided a toll free number – 1800 063 018 – for consumers. On site service modifications will be carried out to eliminate the potential for the malfunction.

Meanwhile, owners of spas, fully enclosed indoor pools, plunge pools or small lap pools with the units should disable them until repairs are carried out. For other pools, the unit should be turned off and water temperature checked before anyone gets into the water.

See www.recalls.gov.au for Australian Product Recall Information.

Don’t forget to tell us what you would like to particularly see in energy safe. Contact us by fax at (03) 9686 2197, or by email at info@esv.vic.gov.au

Permits for exploring geothermal energy sources were awarded in 12 areas to five companies last year, with a further 19 permits to be offered in April this year, the Minister for Energy and Resources, Peter Batchelor, announced just before Christmas.

He said the five companies already awarded permits had committed to spend more than $64 million over five years, with work already getting underway in Gippsland.

“The next tranche of permits will allow companies to search for geothermal energy potential across more than 154,000 sq km of Victoria previously unexplored.”

“In the last two years, the number of companies exploring for geothermal energy sources in Australia has doubled.

“This second release of permits will help ensure Victoria’s geothermal potential is realised,” said the Minister.

He said the geothermal industry in Victoria had huge potential and was entering an exciting period of growth.

Apart from reducing dependence on carbon emitting forms of electricity generation, producing baseload power from naturally occurring subterranean heat will boost regional communities and the State economy.

“The geothermal industry is still in the early stages of development in Victoria. The State has abundant renewable resources, but at this stage, renewable energy only accounts for around four per cent of electricity consumption,” he said.

In hydrothermal geothermal systems, deep groundwater that has been naturally heated to steam temperatures is brought to the surface and used to turn turbines.

In dry rock systems, water is injected into hot rocks and returned to the surface once heated.
testing for consumer piping

Installers should be aware that ESV Gas Inspectors are no longer testing new consumer piping for leakage. It is the installer’s responsibility to carry out any required test to the correct standard before gas is supplied.

Inspectors will now require verification of an acceptable test before a Gas Supply Approval (GSA) is sent to a gas distribution business. Where a low pressure test (less than 10 kPa) is carried out (eg using a water-filled manometer), verification is by correctly entering the required information in the Test Report Section of the Gasfitting (Compliance) Notice. If the information is not supplied or is incorrect, a GSA will not be issued.

For test pressures exceeding 10 kPa, and where a manometer test is not suitable, a Test Sheet must be completed by the installer and submitted with the Gasfitting (Compliance) Notice to verify that a successful test has been carried out to the appropriate standard (AS 5601).

Test Reports are also required where additional work has been carried out and gas is already available. This will mean that older styles of Gasfitting Notice are obsolete and may not be accepted if submitted without a Test report.

Gasfitting Notices and a sample Test Sheet are available from the ESV web site. Look under the tab ‘For Gas Professionals’, and then ‘Compliance Certificates and Gasfitting Notices’. They are also available at selected plumbing supplies, ESV offices, most PIC Regional Offices.

If further explanation or clarification is required, please call the Gas technical Help Line on 1800 652 563.

gas appliances in residential garages

A number of conditions must be met when installing a gas appliance in a residential garage. The preferred method is to install a room-sealed appliance (one designed to take its combustion air from outside and remove the products of combustion to outside).

For other appliances -

> the burner and any pilot or combustion air intake must be 450 mm above floor level; or
> a permanent, sealed, wall at least 450 mm high must be erected around the appliance. The location of the wall must allow adequate access for lighting and servicing the appliance.

> there must be a warning sign to the effect that that flammable vapours are not permitted within 3 metres of the appliance.

Always ensure that the appliance is protected from vehicle damage.

For further details, refer to AS 5601, Gas Installations, or call the Gas Technical Helpline on 1800 652 563.

---

energy safe advertorial – an article supplied by Safety In Action 2008

A common question is which type of pipe is acceptable for use between an LP Gas cylinder and the regulator.

AS 1596 and AS 5601 require either a flexible hose assembly with an excess flow valve upstream of the assembly, or copper tube with a nominal size of 6 mm and a minimum wall thickness of 1.22 mm.

When a number of cylinders are required, it is normal practice to manifold them. The requirements for copper pigtails apply to the manifold. Manifolds to the correct thickness and size are readily available from reputable suppliers who can verify the standard of the materials.

Manufacturing a manifold from copper tube should only be considered where the use of a commercially available type is not feasible, and after consulting the gas supplier. Type A copper would normally be specified.

Remember too that the cylinder regulator is to be rigidly fixed to an adequate means of support that is independent of the cylinder.

Connecting the regulator directly to the cylinder is only acceptable for cylinders exceeding 400 litres and which are fitted with a lockable dome.

---

safety in action 2008

“for people who make safety happen”

Ahead of April’s Safety In Action workplace safety trade show, WorkSafe Victoria has stressed the need for industry to stay abreast of the latest safety measures.

“Everyone in the workplace should have an interest in health and safety. Safety in Action 2008 will give you the opportunity to learn the latest and stay up to date,” said John Merritt, Executive Director of WorkSafe Victoria.

“Events like this expose you to a hub of expertise and information designed to help you keep your workers and business safe.”

Organiser of Safety In Action and Melbourne Materials Handling, Marie Kinsella, said the practical nature of workplace safety meant that it was important for anyone concerned with safety to be aware of the spread of solutions on offer.

“The bottom line is that you need to be able to demonstrate you’ve taken all reasonable steps to make your workplace safe, which in turn means you can’t afford to overlook new solutions as they come onto the market,” she said. “In practice, staying across everything is a huge undertaking, which is why we get 350 or more safety suppliers in one spot every year at Safety In Action.”

Ms Kinsella said the 12,000 square metres of the Safety In Action and Melbourne Materials Handling shows was allocated to ensure a spread of specialists.

Visit Safety In Action and Melbourne Materials Handling, which run from April 29 to May 1 at the Melbourne Exhibition Centre. The Safety Institute of Australia will host the concurrent Safety In Action conference sponsored by WorkSafe Victoria and featuring 70 speakers including former Telstra chief, Ziggy Switkowski. For more information, phone Australian Exhibitions & Conferences on 03 9654 7773, email safety@aec.net.au or visit www.safetyinaction.net.au
Split system air conditioners are very popular but selecting an appropriate external location can be challenging.

ESV and the gas distribution companies have become concerned at the number being installed adjacent to gas meters.

Generally there is no hazard under normal operating circumstances. However, most gas pressure regulators (located at the inlet to the meter) have a relief function. This means that if a fault condition occurs, an amount of gas will be released to atmosphere. The air conditioner can then act as a point of ignition for the escaping gas.

As a general rule of thumb, an air conditioner must not be installed within 1 metre of a gas meter assembly or its proposed location.

A similar hazard affects LP Gas installations, but a much greater clearance is required, depending on the type of cylinder installed. In-situ fill cylinders require a clearance of 3.5 metres at ground level, and for exchange cylinders it is 1.5 metres.

Failure to observe these clearances could result in gas supply being withdrawn.

Handy safety hint. Tell your customer If an appliance needs adjusting or cleaning, switch off the power and pull out the plug – but not by the cord.

When you need to see in the dark!

Duo Atex

A hybrid headlamp for use in explosive environments. Weight: 32g with rechargeable battery:
- ExII 2G
- Ex II 1G T3
- "Intrinsic" safety mode: reduction to a minimum of the risk of an electrical arc or overheating of the battery case.
- "Augmented" safety mode: reduction to a minimum of the risk of overheating of the lighting unit in the event of it receiving a blow.
- Double light source: one with standard bulb for powerful lighting, the other with a 5 LED unit for energy-efficient close-up lighting.
- Standard light source with adjustable focus to adjust the width of the beam of light.
- Beam adjustment control and on/ off switch are situated on opposite sides of the lighting unit, for easier manipulation.
- On/off switch can be locked to avoid accidental switching on.
- Lighting unit can be directed as required.
- Stainless steel contacts.
- Supplied with standard spare bulb, replaceable rechargeable batteries and charger

Other lights in our extensive range...

MYO 3
The MYO 3 features a main headlamp with a powerful Xenon halogen globe and 5 LEDs housed in a separate reflector for proximity lighting.

Tikka Plus
The Tikka Plus has four LEDs and features three levels of lighting options, a flashing mode and a hinged lamp unit that can be tilted.

Tikkina
The Tikkina is a compact two LED light - lasts up to 120 hours on 3x AAA batteries! Weights 78 gms with batteries!

AMPERE ELECTRICAL MANUFACTURING CO. PTY. LTD.
174-176 High Street Prahran, Victoria, 3181,
PH: (03) 9510 4333, 9510 2428 FAX: (03) 9510 5940
Toll Free: 1800 AMPERE (1800 267 373)

ONLY AVAILBLE FROM

23 SUMMER/AUTUMN 2008 ISSUE 11
electrical home safety inspection brings peace of mind for Victorian couple

The following is an article prepared by ESV for possible publication in specialist newspapers available for Victorian holders of the Seniors Card. It is hoped the article will further promote ESV's electrical Home Safe Inspection Scheme and the $50 rebate available for Seniors Card holders who book and pay for an inspection.

East Doncaster couple, Mike and Bev Ballagh, now have peace of mind that their home is electrically safe thanks to an authorised electrical Home Safety Inspection of their property arranged through Victoria’s electricity and gas safety regulator, Energy Safe Victoria (ESV).

ESV introduced the scheme in 2005 to help address concerns about the poor and sometimes possibly dangerous state of electrical wiring systems and other installations existing in many homes across Victoria.

The electrical Home Safety Inspections are conducted by experts – licensed electricians and/or licensed inspectors who have undergone further training and assessment to become authorised for the task by ESV.

Last year ESV introduced a new initiative – a $50 rebate for Seniors Card holders, who arrange and pay for inspections.

“We read about the scheme in 'The Senior” newspaper and thought it was a great idea particularly for people in our position. We now have a safe home electrically and at our stage of life such peace of mind is very important,” said Mike, a retired Tattersall’s employee.

The couple built their home 38 years ago and to make more room for their three sons, a daughter and an aged mother, who was living with them, they added an additional storey to the property some 15 years later.

They arranged the inspection through the ESV website at www.esv.vic.gov.au

“Receiving the $50 rebate off the cost of an inspection for Seniors Card holders was certainly a bonus as far as we were concerned, and hopefully it will be for others.

“I would strongly recommend that other home owners arrange an electrical Home Safety Inspection. I would even go so far as suggesting that people have a social responsibility to ensure their property is electrically safe.

“We read about the scheme in ‘The Senior’ newspaper and thought it was a great idea particularly for people in our position. We now have a safe home electrically and at our stage of life such peace of mind is very important,” said Mike, a retired Tattersall’s employee.

The couple built their home 38 years ago and to make more room for their three sons, a daughter and an aged mother, who was living with them, they added an additional storey to the property some 15 years later.

They arranged the inspection through the ESV website at www.esv.vic.gov.au

Government inquiries into the Yallourn Mine collapse

In early December last year, Minister for Energy and Resources Peter Batchelor announced two inquiries into the collapse at the Yallourn open cut mine.

The northern wall of TRUenergy’s mine collapsed on 14 November 2007 resulting in the Latrobe River flowing directly into the mine until a diversion could be put in place.

Although the incident disrupted mining and power production at the Yallourn W power station, power supplies to the state were not disrupted.

The Minister said the inquiries would separately investigate the facts and causes of what occurred and compliance with mining licence obligations.

“This was a major incident resulting in potential significant environmental impacts and while no one was hurt, we need to ensure the highest safety standards are in place across the industry.

“It is crucial that we understand what caused this incident, so we can prevent further incidents of this kind.

“Achieving maximum safety and protecting the environment during mining activities is a top priority for this Government, and I know it is also a top priority for the industry,” said the Minister.

The first investigation by Department of Primary Industries’ (DPI) inspectors into TRUenergy’s performance against its mining licence obligations started at the end of last year.

A second inquiry into the facts and causes of the mine wall collapse was scheduled to start early this year. It will be independently conducted by a person with specialist expertise who will be appointed as Mining Warden by the Governor in Council.

“There are two investigations because DPI is responsible for regulation of the mining industry under the Mineral Resources (Sustainable Development) Act and will therefore investigate the compliance issues.

“A Mining Warden, however, has broader powers of investigation including the ability to enter any land, summons a person to give evidence on oath and require the production of documents.

“By setting up this second inquiry we are making sure that all the facts can be thoroughly investigated independently of government. The DPI investigation team will cooperate fully with the mining warden’s investigation,” said Mr Batchelor.

The investigations are expected to be completed during the first half of this year.
**electricity Qs and As**

Q. Is a refrigeration mechanic with a D licence permitted to install 240v interconnect cables for split system air conditioners? Some units are direct wired through an isolator and some units plug into a socket outlet. Under what circumstances if any are the interconnect cables regarded as part of the appliance and able to be installed by a competent person?

A. The installation of interconnect cables that are 240 volts is deemed to be electrical installation work under the Section 3 definitions in the Electricity Safety Act 1999, and is therefore not within the scope of a D licence holder. The person undertaking this work needs to be an A class (formerly E licence) holder.

Q. If I have installed a cover over my extra low voltage (ELV) downlights can the distance be decreased from those that are shown in Figure 4.7 of AS/NZS 3000:2007?

A. The requirements are outlined in Clause 4.5.2.3, which states: “4.5.2.3 Recessed luminaires Recessed luminaires and their auxiliary equipment shall be installed in a manner designed to minimise temperature rise and prevent the risk of fire. The temperature rise at the rear of a recessed luminaire shall be limited to prevent damage to adjacent materials. This requirement shall be satisfied by one of the following methods:

(a) The use of a luminaire specifically designed and certified by the manufacturer to permit—

(i) contact with combustible materials; or

(ii) enclosure or covering by thermal insulation material, as appropriate to the location of the luminaire.

(b) Installation of the luminaire within a suitable fire-resistant enclosure.

(c) Provision of required clearances from combustible and thermal insulating material as specified by the manufacturer of the luminaire.

(d) Provision of the default clearances from combustible and thermal insulating material as specified in Figure 4.7.

Where manufacturer’s installation instructions that specify required clearances are not available, the luminaire shall be installed in accordance with (b) or (d).

NOTE: In the case of a suitably designed luminaire, the installation instructions may specify that no clearance is required.

Recessed luminaires and their auxiliary equipment shall be installed in such a manner that necessary cooling air movement through or around the luminaire is not impaired by thermal insulation or other material.

Where thermal insulation is of a type that is not fixed in position, e.g. loose fill, a barrier or guard constructed of fire-resistant material shall be provided and secured in position to maintain the necessary clearance (see Figure 4.7).”

Therefore if there are no other measurements stated with the manufacturer’s instruction then (b) and (d) are to be applied. With no other information the default measurements of Figure 4.7 are to be adhered to.

Q. On a large site that is multiple occupancy where does the prescribed electrical work end? Do I require more than one prescribed certificate of electrical safety?

A. In the Electricity Safety (Installation) Regulations 1999 the requirements of prescribed electrical installation work are outlined in Regulation 406. When seeking to identify the parts of the electrical installation work that are prescribed electrical work Regulation 406 (a) and (b) provide the answer by stating:

“406. Prescribed electrical installation work

(1) For the purposes of section 45 of the Act, “prescribed electrical installation work” means work on all or part of any of the following electrical installations if they are ordinarily operated at low voltage or a voltage exceeding low voltage—

(a) consumers mains, main earthing systems, consumers terminals connection devices and those parts of main switchboards that are related to the control of installations and the protection against the spread of fire;

(b) sub mains, earthing systems and any distribution boards related to the control of individual occupiers’ portions of multiple installations unless the occupier has immediate and unimpeded access to the main switch or switches controlling the whole of the multiple installation.”

It is important to understand that Regulation 406(b) details the requirements for the distribution boards related to the control of the individual occupiers portions of the installation. This means that the person who owns the individual occupancy needs to be able to have unimpeded access to the main switch or switches otherwise the prescribed electrical work continues to the switch that the individual occupier does control. This is usually the isolating switch contained in the switchboard in their unit/apartment or townhouse, so this is where the prescribed electrical work ends.

With respect to the number of prescribed certificates of electrical safety that are issued, then the Electricity Safety (Installation) Regulations 1998 provides the answer in Regulation 410(3) which in Part (c) requires the address and postcode of the electrical installation. Therefore if the electrical installation address is Unit 3012, XYZ Towers, Melbourne, it would be understood that each unit would require its own prescribed certificate of electrical safety, to accurately record the electrical installation work performed at that address.

---

**ESV reminder on IP 23 light fittings**

**FOR MANY YEARS THERE HAVE BEEN IP 23 RATED LIGHT FITTINGS AVAILABLE FOR USE ON ELECTRICAL INSTALLATIONS AND MANY REGISTERED ELECTRICAL CONTRACTORS AND ELECTRICAL WORKERS HAVE SOUGHT TO USE THEM.**

ESV recently received complaints from some customers about these light fittings and therefore reminds RECs and LEIWs of the following.

When installing any fitting or equipment in an area that requires a degree of IP rating, the installer must meet the fundamental requirements in AS/NZS 3000:2007. Clause 1.7 details the requirements for the selection and installation of electrical equipment and covers the essential fundamentals, installation work practice, equipment selection and damp situations.

The fittings that have been bought to the attention of ESV are a PVC composition and are a batten holder style. The fitting itself is IP rated and when the consumer inserts a standard globe they are finding out that the globe fails when it rains due to the heat of the globe.

These fittings have been installed on the outside of the buildings and used in place of a spotlight or other fitting. Customers experienced the problems during heavy rain experienced on occasions recently.

ESV urges RECs and LEIWs who install these type of fittings on the outside of buildings to reconsider this method and instead adopt the requirement of Clause 1.6 of AS/NZS 3000:2007, which covers the design of the electrical installation, and ensure that any light fitting installed on the outside of buildings functions correctly as intended.
electrical connections for gas appliances

MOST DOMESTIC-TYPE GAS APPLIANCES RELY ON ELECTRICITY TO FUNCTION. THEY ARE GENERALLY SUPPLIED WITH A POWER CORD AND 10 AMP THREE PIN PLUG. A POWER POINT IS REQUIRED ADJACENT TO THE APPLIANCE.

As well as providing the power supply, this method of connection serves as a point of isolation, allowing the appliance to be disconnected or serviced in a safe condition.

It has been brought to ESV’s attention that some electricians are cutting off the plug and wiring the appliance direct to the supply. The only point of isolation may be at a switchboard remote from the appliance.

This is in contravention of AS 5601-Gas Installations and the requirements of AS/NZS 3000:2007, (Wiring Rules), in which Clause 1.7.1 states:

“1.7.1 Essential requirement
Electrical equipment, forming part of an electrical installation, shall be selected and installed to—

(a) operate in a safe and reliable manner in the course of normal operating conditions; and

(b) not cause a danger from electric shock, fire, high temperature or physical injury in the event of reasonably expected conditions of abnormal operation, overload, fault or external influences that may apply in the electrical installation; and

(c) be installed in accordance with the manufacturer’s instructions.”

Some dual-fuel cookers (e.g. gas hotplate and electric oven) do have power ratings requiring direct wiring. It is a requirement of AS 5601, AS/NZS 3000:2007 and the manufacturer’s installation instructions that an acceptable means of isolation be provided adjacent to the appliance.

Industry consultation on ESV’s major review of the certificate of electrical safety and the electrical inspection and auditing systems is continuing. A discussion paper reflecting comments already received is expected to be issued within the next couple of months.

The principle recommendation from the review is that the certificate should be retained for all prescribed, non-prescribed and periodic work, and with some refinements.

Refinements
Here are some of the proposed refinements.

> The introduction of online purchasing, lodgement and reporting of certificates.

A paper certificate of electrical safety will be available to users who do not use computers.

> Conducting a feasibility study aimed at reducing the number of forms required for completion as part of the inspection process.

> Redefining prescribed inspections to concentrate on such components as all sub-mains, earthing systems and distribution boards related to the control of an individual occupier’s portions of multiple installations.

Industry consultation on ESV’s major review of the certificate of electrical safety and the electrical inspection and auditing systems is continuing. A discussion paper reflecting comments already received is expected to be issued within the next couple of months.

The principle recommendation from the review is that the certificate should be retained for all prescribed, non-prescribed and periodic work, and with some refinements.

Refinements
Here are some of the proposed refinements.

> The introduction of online purchasing, lodgement and reporting of certificates.

A paper certificate of electrical safety will be available to users who do not use computers.

> Conducting a feasibility study aimed at reducing the number of forms required for completion as part of the inspection process.

> Redefining prescribed inspections to concentrate on such components as all sub-mains, earthing systems and distribution boards related to the control of an individual occupier’s portions of multiple installations.

Consultation continues on certificate of electrical safety review

A clear example of a dodgy downlight

REC MICK DILLEMA OF WANDIN ELECTRICS TOOK THIS PHOTO ON A JOB RECENTLY AND IT CLEARLY SHOWS THE DANGER OF PLACING DOWNLIGHTS TOO CLOSE TO STRUCTURAL TIMBER IN A ROOF. AND THIS PARTICULAR EXAMPLE COMES FROM THE ROOF OF A CAFE!

Mick is of course our “new face” of electrical safety appearing in the ESV commercial which urges the community to always use a licensed electrician and demand a certificate of electrical safety when the job is finished.

The dangers of poorly installed halogen downlights has been a major issue in recent months with both the Minister for Energy and Resources, Peter Batchelor, and ESV issuing warnings about them. They pose a fire risk if installed close to structural timber or become covered by insulation and ceiling debris.

As reported in recent issues of energysafe, the new Wiring Rules (AS/NZS 3000:2007) cover the question of installing downlights much more explicitly than in the previous edition.

Footnote: The commercial featuring Mick Dillema will be shown on television throughout Victoria as part of ESV’s next public awareness campaign which will run for three weeks prior to the Easter holiday.

Half day seminars on the new rules

The publishers and marketers of the new Wiring Rules, SAI Global, have arranged a series of half day seminars on the new Wiring Rules for Australia’s capital cities and major regional areas. The seminars are scheduled to run for five hours, commencing at 1 pm.

Members of the Wiring Rules EL-001 Committee will be presenting at the seminars. An overview of the sessions says they will explain “what we have to do now” that “we did not have to do before”.

Four sessions are planned for Victoria.

Dates and locations are as follows:

- Tues, 22 April – Melbourne > Wednesday, 23 April – Traralgon > Mon, 2 June – Geelong > Tues, 3 June – Bendigo

There are four ways to register:

- Call 1300 727 444 to register over the phone;
- Visit www.saiglobal.com/training to book online;
- Fax registration form with credit card details to 1300 727 888;
- Mail the completed registration form and payment to: SAI Global Limited, GPO Box 5420, Sydney 2001.

www.energysafe.vic.gov.au
Sessions will be held all over Victoria to allow all Registered Electrical Contractors and Licensed Electrical Workers to attend an overview of the changes that have occurred with the introduction of AS/NZS 3000:2007 Wiring Rules.

Spaces are limited so please fill out the form below and return it to NECA as soon as possible to confirm your place. All bookings must be pre-paid and will be confirmed PRIOR to the event. You will be sent a confirmation by either fax or email (please indicate your preference below) which includes a receipt that can be used as a tax invoice and instructions on the location and venue.

<table>
<thead>
<tr>
<th>Region</th>
<th>Location</th>
<th>Date</th>
<th>Spaces</th>
<th>Session Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Metro</td>
<td>Northern Metro Inst. TAFE Preston</td>
<td>Tuesday 11 March 5:00pm – 7:30pm</td>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wednesday 12 March 5:00pm – 7:30pm</td>
<td>200</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thursday 13 March 8:00am – 10:30am</td>
<td>200</td>
<td>3</td>
</tr>
<tr>
<td>Eastern</td>
<td>Metro Holmesglen TAFE HOLMESGLEN</td>
<td>Tuesday 18 March 5:00pm – 7:30pm</td>
<td>150</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wednesday 19 March 5:00pm – 7:30pm</td>
<td>150</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thursday 20 March 8:00am – 10:30am</td>
<td>150</td>
<td>6</td>
</tr>
<tr>
<td>Ballarat</td>
<td>University of Ballarat Mt Helen Campus</td>
<td>Wednesday 2 April 8:00am – 10:30am</td>
<td>150</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wednesday 2 April 5:00pm – 7:30pm</td>
<td>150</td>
<td>8</td>
</tr>
<tr>
<td>Bendigo</td>
<td>Bendigo TAFE</td>
<td>Monday 7 April 5:00pm – 7:30pm</td>
<td>75</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tuesday 8 April 5:00pm – 7:30pm</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>Geelong</td>
<td>Gordon Inst. TAFE</td>
<td>Tuesday 22 April 8:00am – 10:30am</td>
<td>80</td>
<td>11</td>
</tr>
<tr>
<td>Warmabool</td>
<td>Deakin University</td>
<td>Wednesday 23 April 5:00pm – 7:30pm</td>
<td>200</td>
<td>13</td>
</tr>
<tr>
<td>Bairnsdale</td>
<td>East Gippsland Inst. TAFE</td>
<td>Monday 5 May 5:00pm – 7:30pm</td>
<td>115</td>
<td>14</td>
</tr>
<tr>
<td>Latrobe Valley</td>
<td>Monash University CHURCHILL</td>
<td>Thursday 8 May 8:00am – 10:30am</td>
<td>200</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thursday 8 May 5:00pm – 7:30pm</td>
<td>200</td>
<td>16</td>
</tr>
<tr>
<td>Wodonga</td>
<td>Wodonga TAFE</td>
<td>Tuesday 13 May 5:00pm – 7:30pm</td>
<td>68</td>
<td>17</td>
</tr>
<tr>
<td>Shepparton</td>
<td>Goulburn Ovens Inst. TAFE</td>
<td>Wednesday 13 May 5:00pm – 7:30pm</td>
<td>180</td>
<td>18</td>
</tr>
<tr>
<td>Mildura</td>
<td>Sunraysia Inst. TAFE</td>
<td>Tuesday 20 May 5:00pm – 7:30pm</td>
<td>70</td>
<td>19</td>
</tr>
<tr>
<td>Swan Hill</td>
<td>Employment Works</td>
<td>Wednesday 21 May 5:00pm – 7:30pm</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Horsham</td>
<td>Grains Innovation Park</td>
<td>Thursday 22 May 5:00pm – 7:30pm</td>
<td>50</td>
<td>21</td>
</tr>
</tbody>
</table>

Sessions will be held all over Victoria to allow all Registered Electrical Contractors and Licensed Electrical Workers to attend an overview of the changes that have occurred with the introduction of AS/NZS 3000:2007 Wiring Rules.

Spaces are limited so please fill out the form below and return it to NECA as soon as possible to confirm your place. All bookings must be pre-paid and will be confirmed PRIOR to the event. You will be sent a confirmation by either fax or email (please indicate your preference below) which includes a receipt that can be used as a tax invoice and instructions on the location and venue.

| cost | $30 per person (includes presentation and notes) |
| mail | Wiring Rules Seminars NECA Level 12, 222 Kingsway South Melbourne, Victoria, 3205 |
| or fax | (03) 9645 5544 |

Please confirm my booking by fax or email

<table>
<thead>
<tr>
<th>for sessions number</th>
<th>location</th>
</tr>
</thead>
<tbody>
<tr>
<td>for seats @ $30</td>
<td>total: $</td>
</tr>
</tbody>
</table>

name: licence number

address

company

street suburb post code

telephone fax email

payment
make cheques payable to NECA or fill out your credit card details below

<table>
<thead>
<tr>
<th>credit card type</th>
<th>mastercard</th>
<th>visa</th>
</tr>
</thead>
<tbody>
<tr>
<td>credit card number</td>
<td>/ / /</td>
<td></td>
</tr>
<tr>
<td>expiry date:</td>
<td>/ / amount $</td>
<td></td>
</tr>
<tr>
<td>card holder name</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

signature
ELECTRICAL SAFETY

LOOK UP AND LIVE

WARNING! WARNING! WARNING!

THIS IS AN IMPORTANT WARNING FOR ALL FARMERS, TRUCK DRIVERS AND OPERATORS OF MACHINERY ON FARMS.

» When near powerlines, always Look Up And Live.
» There have been too many deaths in Victoria resulting from trucks touching powerlines.
» Contact with powerlines can end in tragedy.
» Don’t take risks and don’t become another statistic.

VISIT esv.vic.gov.au or call 1800 800 158

A message from Energy Safe Victoria
– the state’s electricity safety regulator