WARNING: DON'T TAKE YOUR GAS BBQ FOR GRANTED

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Did you know that you can now receive energy online in an e-book format?

The introduction of the e-book is one of a number of initiatives undertaken by ESV to reduce our impact on the environment.

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Apology

The wrong phone number for ESV’s licensing section was published on the address sheet provided with issue 13 of the magazine. The correct phone number is 1800 815 721. We apologise for any inconvenience resulting from the publication of the wrong number.

From the editor.

IT IS TIME TO WISH ALL OUR READERS A HAPPY AND SAFE CHRISTMAS AND NEW YEAR. MOST IMPORTANTLY WE ENCOURAGE EVERYONE INVOLVED IN THE ELECTRICITY, GAS AND PIPELINE INDUSTRIES TO MAKE SURE “HAPPY AND SAFE” ARE THE OPERATIVE WORDS!!! FOR THE FESTIVE PERIOD AND WELL INTO THE FUTURE AS THEY GO ABOUT THEIR LIVES.

Unfortunately some people have not been safe or happy in recent months and have experienced severe injuries to prove it. As reported in this issue of the magazine, some alarming trends have become apparent across electricity and gas safety recently – in particular serious electric shocks received by young workers and a high rate of incidents and injuries involving domestic BBQs.

ESV together with other authorities is investigating the electricity related incidents to determine how they happened and whether there was carelessness and inexperience on the part of victims or whether there was a lack of proper supervision by the people responsible for the safety of apprentices and young workers.

A young electrician working on his own for virtually the first time spent a week in hospital after receiving a severe shock. He was working in a restaurant and tells his own story of how he acceded to pressure from the customer and decided to wing it and work “live”. He has essential advice for everyone in his position.

ESV has been very busy raising awareness of the issue of gas BBQ safety. Our BBQ safety commercial was the centrepiece of our most recent three week long public awareness campaign involving metropolitan and regional areas. A new ESV brochure on the issue has also been printed.

Energy and Resources Minister Peter Batchelor also warned about the dangers of poorly maintained BBQs, particularly the POL connection between the LPG cylinder and appliance, at a media event two days before the Melbourne Cup. Unfortunately a woman was badly burned in a BBQ incident on Cup Day itself. She either did not hear the advice or ignored it.

We report these incidents in this issue of energy safe but as usual we have a whole lot more. For instance we commence a regular series featuring your questions, with the answers, on a whole range of electricity installation issues. We also bring the gas industry up to speed on the changes contained in the new version of Standard AS 1596.

Enjoy Issue 14 and remember to be happy and stay safe.

David Guthrie-Jones
dguthrie-jones@esv.vic.gov.au

www.energy-safe.vic.gov.au

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FORWARD COVERAGE: ESV is concerned at the high rate of incidents and injuries involving domestic BBGs. During 2007/08, 29 incidents involving BBGs reported to ESV were directly attributable to the connection and disconnection of LP gas cylinders or at the appliance. More than half of gas-use injuries sustained by Victorians involve domestic barbecues. Energy and Resources Minister Peter Batchelor hosted a media event two days before the Melbourne Cup where firefighters demonstrated how easily a gas BBQ can erupt in flames thanks to poor maintenance and carelessness. The issue of gas BBQ safety is covered extensively in this edition.

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Bookings are now being taken for the next and subsequent issues of energy safe.
Minister warns Victorians on the need for gas BBQ safety

THE ISSUE OF GAS BBQ SAFETY WAS THE FOCUS OF MEDIA ATTENTION IN EARLY NOVEMBER WITH ENERGY AND RESOURCES MINISTER PETER BATECHOR WARNING VICTORIANS OF THE NEED TO TAKE CARE WHEN THEY FIRE UP THEIR APPLIANCES – PARTICULARLY IF IT’S THE FIRST TIME FOR MONTHS.

At a joint ESV/Metropolitan Fire Brigade event for the media two days before the Melbourne Cup, firefighters set alight a BBQ to demonstrate how easily a poor connection between a cylinder and appliance can cause fires and burns injuries.

“Barbecues are a great Aussie tradition, but each year result in injury and property damage that can be avoided,” said the Minister.

“More than half of gas-use injuries sustained by Victorians involve domestic barbecues and in the last three years more than 400 fires from portable/outdoor barbecues have been reported in Victoria.

“Just in metropolitan Melbourne, the MFB attended 47 barbeque related fires last summer, while the Victorian Adult Burns Service at The Alfred admitted 15 people as a result of outdoor fire and barbeque activities.”

Unfortunately not everyone heeded the advice with a woman receiving burns injuries when attempting to light a gas BBQ on Melbourne Cup Day itself. There was was another incident in mid October in which another woman was injured when a “fierce” fire shot from a cylinder as she was about to cook the evening meal on her BBQ.

ESV has produced a new brochure on gas BBQ safety with extensive details of what can go wrong with them when left idle for a time, and how the problems should be fixed. Our television commercial on BBQ safety was also the centrepiece of ESV’s most recent public awareness campaign.

The Minister said the 2 November media event was part of ESV’s latest public safety campaign which, in conjunction with the MFB, Country Fire Authority (CFA) and The Alfred Hospital, is warning people to take care when using gas barbeques.

“With the Melbourne Cup on Tuesday and recent warmer weather, many Victorians are firing up their barbeque for the first time in months.

“Poorly maintained gas hose connections or loose connections are often the cause of barbeque fires. Properly maintaining and checking your barbeque before use will help reduce risks.

“By following some simple safety precautions, we can help reduce the number of burn injuries and the damage to property as a result of barbeques.”

Simple precautions people should follow include:

> Check the barbeque and gas cylinders are in good condition.
> Check connecting hoses between the cylinder and appliance are not damaged or leaking – use soapy water to check for leaks.

> Ensure hand-tightened cylinder connections are as tight as possible – in the case of other fittings use a spanner if possible.
> Do not drink too much alcohol when in charge of a barbeque. It can impair judgement and delay appropriate safety activities in cases of emergency.
> Never leave a barbeque unattended and only allow children near a barbeque when well supervised.
> Keep barbeques clear of flammable material such as vegetation.
> Never use barbeques or other outdoor appliances inside the house.
> Seek medical attention if a burn occurs.

For more information on barbecue safety visit www.esv.vic.gov.au

Melbourne Cup Day incident

Unfortunately it appears that some failed to heed the advice with ESV receiving reports of a Mount Eliza woman being injured on Melbourne Cup Day in an incident involving a 9Kg LPG cylinder.

The CFA reported that the woman received burns to her body when attempting to light a burner on an LPG barbeque. She was taken by ambulance to Frankston Hospital.

According to a CFA officer, the cylinder valve was loose and had probably been leaking. ESV is investigating the incident.

For more on gas BBQ safety including information on ESV’s new gas BBQ safety brochure see page 12.

Reminder on ESV opening hours over Christmas and the New Year

Here is a reminder that ESV will be closing its three offices – Southbank, Nunawading and Ballarat – from close of business on Friday, 19 December 2008, and reopening at normal business times on Monday, 5 January 2009.

Warning to electricians – you must be an REC to offer to carry out electrical work

It appears the global financial crisis might have a detrimental affect on the rate of new large scale construction jobs undertaken across Victoria.

At such times in the past, as large construction jobs come to a close, there can be the temptation for electricians affected by such downturns to do electrical work for acquaintances, or even offer to do such work for others as they wait for the next job to start.

While ESV has every sympathy for electricians affected by circumstances beyond their control, they must be advised that before they can offer or carry out electrical work for profit or reward, including bartering, they must first become a registered electrical contractor (REC).

Individuals are subject to a fine of over $5,000 for carrying out or even offering to carry out electrical work while not an REC. To qualify as an REC one must hold the necessary liability insurance cover.

In addition people who only have a supervised electrical workers licence (Class L or ES) and work unsupervised face an additional fine of over $5,000.

Electricians who carry out electrical work when not an REC face huge penalties if they are not registered. In such circumstances, protection normally provided by liability insurance will simply not apply.

It is proposed that the next edition of energysafe will provide details on how to become a registered electrical contractor.

Those who cannot wait that long should obtain details on how to become an REC from the ESV website, www.esv.vic.gov.au
ESV concern at spate of injuries to apprentices

ESV is concerned that some of the recent incidents is it investigating involved apprentices or young workers. In two of the incidents, the apprentices needed to be revived after their hearts stopped.

There are reports in this issue concerning:

> The heart of a 20-year-old electrical apprentice stopped after receiving an electric shock working on a switchboard at Ringwood’s Eastland Shopping Centre. He was revived by a security guard using a defibrillator.

> A first year electrical apprentice, also aged 20, received a severe electric shock while changing a light fitting at a major Melbourne hotel.

> A 17-year-old carpentry apprentice received a severe shock performing non-electrical work at a community hall in Melbourne. He needed to be revived after receiving the shock.

> A 25-year-old electrician working solo for just about the first time and about to change over a circuit breaker at a busy restaurant in a northern suburb of Melbourne decided it was safe to perform the work “live”. He spent almost a week in hospital afterwards.

The incidents virtually coincided with the start of a new campaign by WorkSafe Victoria targeting young workers aged between 15 and 24, their families and employers in a bid to reduce the rate of workplace injuries involving what is termed Generation Y.

WorkSafe Victoria’s Executive Director of Health and Safety, John Merritt, said that despite Victoria having the best workplace safety record in Australia, figures show that the likelihood of younger workers admitted to hospital emergency departments compared to their older counterparts is close to double.

Mr Merritt said that research conducted by WorkSafe, the Australian Bureau of Statistics and the Department of Human Services shows:

> In the last five years 15 young workers (aged 15-24) had been killed at work.

> Young males under 24 have the second highest rate of injuries of all age groups by gender, only second to males aged 45 to 54.

> Although females have lower rates of injury compared to males, young females (24 and under) have the highest.

> Young males (aged 15 to 19) in regional Victoria are 4 times more likely to be hospitalised compared to workers of the same age and gender in the city.

> Younger workers have a lower rate of claiming workers compensation, but it is believed that the figure is under-represented.

New research conducted by WorkSafe involving 1600 young workers also found that younger workers are less likely to be consulted on safety in the workplace, don’t have the confidence to raise issues, may not understand or know their rights and alarmingly don’t consider workplace safety as important as road or public safety.

ABS statistics show that most young workers in Victoria are concentrated in a few industries including retail, construction and manufacturing for men 15-24 years of age. The most rapid growth in concentration of young workers is related to health and community services for women 15-24 years of age.

The new campaign involving television commercials and posters features young workers in a variety of occupations sustaining traumatic injuries loosely based on real accidents investigated by WorkSafe Victoria.

WorkSafe said that it will be commencing an enforcement campaign involving inspections of industries with a high concentration of young workers including retail, hospitality, construction and manufacturing across the state.

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

energy safe adveritial – an article supplied by NECA

Doing Business Better

The current world wide financial situation brings an immediate focus to contractors as where they will be in the next twelve months and beyond. It is clear from what the Rudd Labor Government is saying that business will become tighter over the coming period.

What in real terms does that mean for contractors and their staff? Essentially it highlights a number of critical issues. Primarily businesses that are not structured correctly will come under risk. Providing your business with the best opportunities means that a number of key areas should be addressed. The simple basics of business should be addressed. Good financial management is key, starting with basic cash flow and continuing through correctly estimating work then managing the project or job to ensure that the simple things such as variations are documented, approved and correctly charged. Ensuring that you have the correct risk management processes in place is extremely important. A viable and active OHS system is paramount. Without this, the potential for unexpected financial impact is greatly increased.

Getting the right advice, support and information has never been more important. The past ten years has seen unprecedented economic growth and contractors have reaped the rewards. Many have never experienced the harsh realities of an economic downturn of this kind. Not since the late eighties have we seen the potential market scenarios that we now face.

NECA Victoria CEO Philip Green said that he believes those businesses who recognise their situation early and act will make the most of the opportunities offered.

“There are a few key areas that require attention as they will have the potential for the greatest impact. Financial management is paramount. Our experience shows that once work gets tight, the first thing that sufferers is the charge out rate as people try to buy work. Ensuring that work is estimated accurately is even more important in this scenario. We have been offering free estimating courses to new members to assist them in understanding the basics. In addition we have a raft of other support material and programs that will further assist the contractor in hopefully making the right decisions in their business.”

Things such as the use of the Security of Payment legislation, credit checks, debt recovery, legal advice are all part of the many services that NECA offers through its key alliances.

“The OHS system we have was developed specifically around our industry needs. Importantly it is supported with free advice from our OHS advisor who can work directly with the contractor and his staff on specific issues.”

NECA, he says can and does, provide contractors with one of the best options to ensure a successful future in today and tomorrow’s marketplace.
Four injured when butane gas cooking range explodes

ESV is investigating an incident at a Chinese restaurant in Bulleen in which staff received serious facial burns when a small, portable butane gas cooking range exploded.

Two of the cooking appliances were located at the restaurant. They were placed on top of a freezer cabinet in what is referred to as the “cold kitchen” at the premises.

At the time of the incident a cast iron fry pan was being used on one of the cookers to sear scallops. According to ESV investigations, the second cooker was later turned on but left unattended for some 30 minutes.

Three people, including the restaurant’s chef, were in the “cold kitchen” when they heard a noise after the lever knob used to engage the propane cylinder into the appliance, dislodged and fell onto the metal freezer. They had their backs to the cooker at the time.

After hearing the noise, the chef turned towards the two cookers and picked up the one from which the knob had been dislodged. As he lifted the appliance, the explosion occurred.

The chef and his two co-workers, both women, received serious burns to their faces. A fourth person received minor burns as he walked into the area. They all required hospital treatment.

ESV has identified two possible theories for the explosion – that the appliance had failed to ignite when turned on by the chef, or whether the gas canister located within the cooker had not properly engaged with it. Both scenarios would have resulted in an escape of gas causing the explosion.

The AGA certification for this appliance is that it is a camping and leisure product.

WorkSafe placed a prohibition order on the restaurant not to use this type of appliance in its commercial kitchen area. The authority is also investigating whether the gas canisters used with the cookers comply with the appropriate Australian Standard.

ESV’s direction to gasfitters when locating unflued domestic heaters

ESV will make a direction to licensed gasfitters who detect a brand of unflued space heaters, which may be up to 50 years old, to immediately isolate them from the gas supply, and arrange for them to be removed and destroyed as soon as practicable.

The direction is being prepared following the recent discovery by ESV of three “immediately dangerous” unflued space heaters at a small block of flats in Caulfield. The dangerous condition was due to excessive carbon monoxide in the combustion products.

ESV was alerted to the issue by the owner of one of the flats after being advised by his plumber that the space heater in his property was unflued and may be dangerous. The owner replaced the heater, and because of concern that similar heaters were located in some of the other flats, contacted ESV.

ESV Gas Inspectors then visited all the eight flats at the block and located three Braemar space heaters. While it was not possible to clearly identify the models in question, ESV believes that they are identical to Braemar space heaters models 64/L653, 63 as described on page 474 of the former Gas and Fuel Corporation’s Natural Gas Appliance Conversion Manual.

For safety reasons all three heaters, which would be approximately 50-years-old were tagged with ESV warning labels. The occupants were advised by ESV that the heaters were unsafe and not to be used.

ESV subsequently received confirmation that the three heaters in question had been removed. One of them was made available to ESV for further inspection.

A report of the investigation said: “Fortunately ESV was notified of the unflued heaters before anyone was adversely affected. The subsequent inspection located 3 unflued space heaters, with 2 of the space heaters being used regularly by the flat’s occupants.

“After combustion testing the heaters, ESV deemed the appliances to be immediately dangerous and took immediate action to make the situation safe. ESV’s request to have the appliances removed has been carried out.”

It is now ESV policy that Braemar unflued space heaters models 64/L653 have passed their serviceable life cycle and are unsafe in any condition.
Heavy fine for company charged with tampering with a gas pipeline

The lifting of a high pressure gas pipeline from its position and then tying it to some wooden stakes with blue nylon rope has proved to be very costly for the company found to be responsible.

Ciccone Constructions Pty Ltd, a civil contractor, was charged in the Werribee Court with uncovering a gas pipeline without the consent of the owner and with knowingly tampering with a gas pipeline. The prosecution was brought by ESV.

The company was convicted, fined $20,000 and ordered to pay costs of $2,800.

The court was told that in August 2007 ESV received a complaint from SP AusNet alleging interference to its 180mm high pressure gas main pipeline running along Mt. Derrimut Road, Laverton North.

The pipe had been laid in 2006 as part of a gas supply extension program in the area.

ESV alleged that the defendant company had been engaged by project engineers working for a housing developer to provide an entrance to the development from Mt. Derrimut Road. The work involved excavations in Mt. Derrimut Road between St. Leonards Avenue and Foley Road.

It was alleged that an employee of Ciccone Constructions Pty Ltd lifted the high pressure gas pipeline from its position to the top of a trench and tied it to some wooden stakes with blue nylon rope.

SP AusNet provided the “Dial Before You Dig” service with details about the location and depth of its gas assets some years before the new works commenced.

The court was told that another employee of the company had telephoned the “Dial Before You Dig” service on three occasions in relation to the position of gas pipes in Mt. Derrimut Road.

One inquiry was specifically about the location of gas assets at the junction of Derrimut Road and Foley’s Road. This was the site of the alleged removal of the high pressure gas pipeline from its position.

A senior representative of the company said in a record of interview that his company had been directed to lift the pipeline and that the direction was in writing. There had been no evidence to support this as documents had not been provided.

The court was told it was clear that Ciccone knew where the pipeline was located and that it chose to lift it without any approval whatsoever from the owner of the pipeline.

In doing so the pipeline was damaged and was in a potentially lethal condition until SP AusNet replaced the whole pipeline.

Despite being given the opportunity to do so, the defendant failed to produce any evidence of permission to interfere with the high pressure gas pipeline.

Prosecutions for breach of an undertaking

By ESV’s prosecuting solicitor, John Murphy

During 2008, ESV has launched a number of prosecutions against defendants for breaches of undertakings given to magistrates’ courts. Recently an electrician ended up with two convictions and fines and costs totalling almost $4,000 after a promised payment to the court fund did not eventuate.

The Sentencing Act 1991 provides some sentencing guidelines for courts. When a defendant who has no previous convictions and pleads guilty at the earliest opportunity, then courts can ask the person in question to provide an undertaking that they will be of good behavior for a set period of time.

Sometimes there is an additional imposition placed on the defendant to make a payment to the court fund. The fund is a last resort pool of money from which people in desperate need can be given vouchers to help with buying food or paying for short term accommodation.

What is important is that the person is asked by the magistrate if they will promise to pay an amount to the court and be of good behaviour.

Heavy fines for unregistered electrical contracting company

A company charged with holding out to be an REC when unregistered and carrying out contracting work when unregistered used the Australian Business Number (ABN) of another person on its tax invoices, a court has heard.

Local Home Improvement Services Pty Ltd, an unregistered company at the time of the offences, was convicted of the offences in the Broadmeadows Court and fined $15,000. In addition, costs of $3,616 were awarded to ESV which brought the prosecution.

Sentencing the company, the magistrate said that the use of another person’s ABN on its tax Invoices was a significant factor in her decision to convict the company and impose the penalties.

ESV told the court that Local Home Improvement Services Pty Ltd is the owner of a business name “Local Home Electrical Services.”

The business name was registered on 20 March 2007, with the company itself being first registered on 24 November 2006.

The court was told that the company began holding itself out as a registered electrical contractor by at least April 2007. It did so through:

> Advertising in a local Werribee newspaper,
> Issuing numerous tax invoices in its business name but displaying the Australian Business Number of another person and not that of the corporation.

Once the person agrees the order is made, if the payment is not made within the allocated time frame, the court notifies ESV and “breach” charges are laid. If a person commits any further offences during the period of the undertaking then too will trigger further “breach” proceedings.

Recently an electrician was charged with over 70 offences spread over 2 sets of charges issued at different times. The court, after receiving the electrician’s promise to be of good behaviour, imposed “undertakings” for both sets of charges. One of the undertakings included a promise to make a payment into the court fund.

The payment was not made and the consequences were to say the least extremely serious for the electrician.

Breach proceedings were commenced which resulted in the original undertaking being set aside and heavy fines imposed, both for breaching the undertaking and for the offences for which the original undertakings had been given.

Defendants are advised that undertakings made in these circumstances amount to a promise to a court, and not ESV. As can be seen, courts act decisively against those who break their promises and the consequences can be severe.

> Having a van painted with the name of the business and used in the course of business by an employee electrician.

Using its coercive powers ESV recovered certificates of electrical safety and associated invoices from Local Home Improvement Services Pty Ltd. The invoices were in the name of Local Home Electrical Services and quoted an Australian Business Number 42 995 422 039. That number belongs to another person.

A search of the ABN public register showed that the other person listed himself as a “Sole Trader” and had been trading as Universal Property and Garden Care from 01 July 2005 until at least the date of ESV’s internet inquiry on 14 March 2008.

The court was told that electrical contracting is a class of work described in Regulation 107 of the Electricity Safety (Installations) Regulations 1999. Section 30 of the Electricity Safety Act 1998 prescribes multiple offences, one of which is holding out to be registered and another is carrying out electrical work when unregistered.

Section 30 provides that only a Registered Electrical Contractor (REC) may hold out, offer to carry out or carry out electrical contracting work. Registration requires that the REC comply with a number of conditions including obtaining public liability insurance of no less than $5,000,000.00 per claim.

Since the offences, Local Home Improvement Services Pty Ltd has been registered as an REC.
ESV requires company to trace caravans and make them safe

ESV has issued a direction to a caravan company requiring it to trace all vehicles manufactured since 1 May 2007 and arrange checks to ensure all gas fittings in them are tight and safe.

In early June this year ESV received reports of a fire in a vehicle at a caravan sales depot in Wodonga caused by a gas leak at the connection to a hot water service. The caravan in question had been manufactured by Windsor Caravans Pty Ltd around May and June 2007. A number of Windsor Caravans at various sales locations in Victoria were pressure tested and further gas leaks were found.

The direction issued under section 78 of the Gas Safety Act 1997 by the Director of Energy Safety Ken Gardner requires Windsor Caravans Pty Ltd at its own expense to undertake the following in respect of every caravan manufactured by it on or after 1 May 2007:

1. Ensure that all caravans held by dealers, if not already tested for gas tightness, are tested, and
2. Instruct every dealer who has sold or supplied caravans to which the order applies to send a notice to each customer that they should, at Windsor Caravan’s expense, arrange for testing of the caravans for gas tightness by a licensed gasfitter.

The direction also requires that caravans found to be not gas tight must be rectified at Windsor Caravans’ expense.

Ken told energysafe that the issue relating to Windsor Caravans has been evolving over a number of months and each stage has been addressed appropriately and timely by ESV to ensure vehicles manufactured by the company are safe as far as the gas fittings are concerned.

He said that Windsor Caravans agreed in June this year to trace all vehicles held in stock by dealers around Australia that may be at risk of leaking LP gas and arrange for safety checks to be conducted by licensed gasfitters.

According to information supplied to ESV, some 165 caravans have been tested so far with 11 instances detected of gas piping not being tight. ESV has not been advised of any further reports of gas leaks in caravans in the field or any related warranty claims made by owners to Windsor Caravans, said Ken.

It is estimated some 1600 caravans in total require testing.

“We will continue to monitor the situation to ensure the direction is complied with and take whatever follow up action is required,” said Ken.

Development of online certificates on schedule for 2009

As previously flagged, ESV is currently reviewing and updating our capability for certificates of electrical safety to be purchased and lodged online.

The current Interactive Voice Response (IVR) system will remain unchanged; however ESV will provide an enhanced capability for electricians and businesses who desire to use online services.

The upgrade is on schedule to be delivered in mid 2009.

The proposed features include:

> Ability to purchase COES numbers on line and lodge those COES online
> Ability to print off, email or fax the lodged COES to the customer
> The ability for online lodged COES to pre-fill with contact details data
> Ability to notify Retailers/DBs that a certificate has been lodged
> If the certificate is lodged online a copy of the certificate will not have to be posted to ESV

In addition, as part of the review into the certification system, ESV is also reviewing the actual COES form. This will also apply to the paper certificates purchased through our agents. Paper certificates already purchased will still be able to be used, however all certificates purchased from mid 2009 will be in the new format.

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www.bbsaa.com.au

As part of the process the regulations and legislation related to lodgment of certificates are being reviewed to reduce the regulatory burden on external stakeholders.

Consultation with external stakeholders has been identified as a crucial part of this review in order to gain acceptance of the new processes and as such consultation will occur on the following functions and interfaces:

> COES Form
> Purchasing Online interface
> Lodging Online interface
> Email/Fax interface

Bilfinger Berger Services

A 25-YEAR-OLD ELECTRICIAN WORKING SOLO FOR JUST ABOUT THE FIRST TIME, AND ABOUT TO CHANGE OVER A CIRCUIT BREAKER AT A BUSY RESTAURANT IN A NORTHERN SUBURB OF MELBOURNE, DECIDED IT WAS SAFE TO PERFORM THE WORK “LIVE”.

He admitted he was under some pressure to “keep things going as much as possible”. As it happened, he was lucky not to be killed in the recent incident – or at the very least blinded. But, he spent almost a week in hospital recovering from his injuries and fortunately has made a good recovery.

The electrician – we are not revealing his identity or that of his employers because he has been through enough – agreed to provide his own description of what happened to him during his recovery process when I had realised how lucky I really was.

*As the restaurant was operating at the time I mistakenly decided that I could do the job without interrupting the operations of the restaurant and leave the switchboard live whilst doing the work.*

*I was under some pressure to keep things going as much as possible and in the heat of the moment decided not to turn it off.*

*As I put the breaker into the board it was slightly misaligned so I tried to realign the insulated part of the busbar with my insulated screw driver but as I touched the busbar the insulation failed and the two phases shorted out and it just exploded in my face.*

*I received flash burns to my face and arm and was rushed to hospital. It also shut the restaurant down for the day and also cost a fair bit to fix the damage to the switchboard.*

*I was extremely lucky not be blinded by the flash or be killed which only really hit home for me during my recovery process when I had realised how lucky I really was.*

*“I wrote this story to remind the younger generation of sparkies that no matter what the pressure is to keep something live, it is never worth risking it. No job is worth risking your life for. Take it from someone who now knows. Do Not Work Live. Ever.”* That was his story.

**Unapproved travel adaptors remain a concern**

ESV continues to be concerned about the range and variety of unapproved and possibly unsafe travel adaptors available in Victoria. Some of them have been proven to be not only unsafe but dangerous.

It is understood the unapproved adaptors are being sold in markets, on-line, at discount and variety stores in addition to outlets specialising in travel goods. They are often supplied with unapproved and unsafe overseas products sold at the above outlets.

Nothing much appears to have changed since ESV issued a public safety alert some three years ago about unapproved adaptors.

The warning said that there have been instances where the casing of some travel adaptors has separated into two halves, exposing users to contact with live 240 Volts and therefore potential electric shock.

Another problem is that because of poor contacts in the devices, there have been cases of overheating. As the warning stated this could lead to fires and possible loss of life.

The particular travel adaptors pictured in the public safety warning were marked 10 250V, but like the others also pictured here did not have the required approval number and do not comply with Australian Standards.

“*The design is such that it does not prevent the insertion of one pin of the plug while the other pin(s) are overhanging the socket outlet, nor does the design prevent the insertion of an earthing pin into a live contact,“* the warning stated.

“There is even the chance a user may contact the 240 Volt contacts which would result in an electric shock being received.

“These unsafe travel adaptors also don’t have a round plug face or insulated plug pins and some are marked with incorrect active and neutral polarity. As the warning stated: “Do not put yourself or your family at risk. Check your travel adaptors now and dispose of any of the ones pictured – or any that don’t have an approval marking.”

To say the least, the advice in the public safety warning remains extremely relevant.

New travel adaptors were required to be fitted with insulated live pins from 3 April 2006.
Investigations continue into death of lineworker

ESV and WorkSafe are continuing investigations into the incident at Croydon in August, in which lineworker Paul Seden was seriously injured and subsequently died.

As reported in the last issue of energy safe Paul and a colleague were working on a project to upgrade the local distribution network and provide power supplies to a new development. They were in the process of correcting HV phasing on a substation when the incident occurred.

Witness statements have been taken for the investigation which is focusing on how the incident on what is a standard installation involving an experienced lineworker happened, and the planning undertaken beforehand.

ESV has issued a Safety Alert for all lineworkers following this incident and the other lineworker fatality earlier this year stressing the importance of always taking extreme care when working on or near electric lines.

Paul and his colleague were employed by Jemena and were part of what is called a “travelling crew”. On the day in question they were travelling to Morwell and were diverted to Croydon on the way to carry out more work on a job in which they had been engaged about two weeks earlier.

Paul was in an elevated work platform when the incident occurred

Paul’s death followed that of 38-year-old Allen Pearson, who was electrocuted while restoring power supplies in Mornington on 3 April – the day after wild storms struck Victoria.

Director of Energy Safety, Ken Gardner, said in the Safety Alert: “It is tragic that Victoria has lost two experienced and well respected lineworkers in the space of just a few months. ESV and WorkSafe are investigating the incidents.”

“While investigations into the deaths are ongoing, it is appropriate to warn all lineworkers that safety must never be compromised in their work. Operations need to be continually reviewed and modified where necessary to ensure only the safest work practices are followed.

“Lineworkers should remember that their last line of defence when something goes wrong is proper procedures, appropriate safety protection gear and safe work practices. They are essential at all times.”

The Safety Alert stresses that lineworkers must:

> Perform a detailed safety assessment;
> Use appropriate personal safety gear and protective equipment and tools;
> Cover all live conductors within reach; and,
> Comply with the Code of Practice of Electrical Safety for Working On or Near High Voltage Electrical Apparatus.

Ken said: “Lineworkers should not proceed with any project if there is the slightest doubt about their safety and that of the public. Even routine jobs can go wrong.”

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Apprentice came back from the dead, says local newspaper

ESV and WorkSafe have concluded their investigations into a serious incident at a community hall at Wodonga in which a 17-year-old carpentry apprentice reportedly stopped breathing after receiving a severe electric shock.

ESV has concluded that the victim, Damien Harper, was undertaking non-electrical work in the roof space of the Department of Human Services property when he received the shock from contact with a live toggle bolt at a potential of approximately 240 volts.

The electric shock was received between the toggle and the aluminium backed insulation roofing sheet.

Damien Harper has told the local media that he remembers nothing about the afternoon he received the shock. He had yelled out that he had been bitten or stung. His employer checked that the apprentice was all right. Damien went back to work but it was soon realised there was a problem and he was found in the roof space turning blue.

His work mates called an ambulance and started resuscitation, which ambulance officers took over when they arrived. Wodonga ambulance station officer, Mike Fuery, told the media that Damien “was clinically dead”. He was not breathing, had no pulse and officers had to defibrillate six times.

It took between 16 and 20 minutes to get his heart to start beating again, Mr Fuery told the Border Morning Mail.

Damien spent seven days in the Albury Base Hospital, including two days in a coma, before being transferred to the Royal Melbourne Hospital for five days, where tests to see if he had an underlying heart condition, came back normal.

If a residual current device or safety switch had been installed it would have protected the circuit and serious injury would have been avoided.

Unapproved lights detected after apprentice receives shock at Melbourne hotel

ESV is investigating how a first year electrical apprentice, aged 20, received an electric shock while changing a light fitting at a major Melbourne hotel in late September.

While the incident and the injury were serious enough, investigations made by ESV turned up another serious issue – the fact that some 2000 non-compliant lights were being installed at the hotel as part of a major retrofit project.

As far as the injury to the apprentice is concerned, ESV is investigating a number of causes including whether a lack of required supervision contributed to the incident. Another issue is whether the apprentice failed to adequately isolate the switch for the light he was working on.

ESV understands the new light fittings were imported directly from China. Directions are being provided to the hotel and the contractors for the retrofit project to ensure the light fittings comply with Australian requirements.
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- clause 2.5.5.3 arcing fault clearing capacity of protective devices for feeds of 800amps and above.
- clause 2.5.7.3 supply circuit discrimination, with option for checking protective devices less than 250amps.
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- clause 5.7.4 earth system impedance check at 0.4s and 5 sec disconnect times

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New ESV brochure urges: don’t take your gas BBQ for granted

With more than half the injuries sustained by people in Victoria from gas use each year involving domestic barbecues (BBQs), ESV has developed a new brochure to hopefully prevent people from being hurt, and even killed.

ESV is concerned at the continuing rate of incidents and injuries attributable to gas BBQs. As the brochure points out the principal culprit for the problems with gas BBQs is the left hand thread connection, often known as the POL connection, between the gas cylinder and the appliance either being in a poor condition or not tight enough.

The brochure also advises that because the checks which must be made to ensure the safe operation of BBQs are so important it maybe worth engaging an expert – a licensed gasfitter – to conduct the checks and carry out any maintenance or repairs which are needed.

The brochure advises that while BBQs are sitting idle over the winter months, things can go wrong. Here from the brochure are some examples and what can be done about them.

- Insects and other bugs can make their home in the burners restricting their proper functioning.
- The advice: Carefully clean the burners externally with a wire brush. Clean the inside of each burner with a venture brush. If the burners are removable, wash them under a tap and allow to dry before reinstating.
- The on/off controls are tight or cease functioning correctly.
- The advice: This is specialist work and should only be undertaken by a licensed or registered plumber/gasfitter.
- I have connected to my gas cylinder and have found a small gas leak when testing with soapy water.
- The advice: Turn off the gas at the cylinder, disconnect the POL and check the faces are clean. Most small leaks occur due to misalignment so take care when assembling and reconnecting the POL. (Check connections for leaks with soapy water using a small (15 mm) brush to apply.)
- The hoses connecting the gas cylinder and the BBQ deteriorate and split.
- The advice: Replace worn or leaking hoses with a new product that is designed for Liquid Petroleum Gas (LPG).
- The important “o” ring which is found on many POL connections, between the hose assembly and gas cylinder, is damaged.
- The advice: Replace the connection with new.

Buying new BBQs

Injuries also happen because new BBQs have not been assembled correctly. Again it’s the result of the connection between the appliance and the gas cylinder not being tight enough. All mechanical connections should be checked with a soapy water solution.

The brochure advises:

- When assembling a new BBQ, carefully follow the manufacturer’s instructions and ensure the connections are tight. Check all mechanical connections with a soapy water solution.
- Even if the BBQ has been assembled by a specialist company, make absolutely sure the connections are tight. Check all mechanical connections with a soapy water solution.
- Whether a new or existing BBQ, the connections should be checked regularly for leaks. Use a soapy solution to do so.

Copies of the brochure are available from ESV.

ESV’s Technical Information Help Line – 1800 652 563 – can also advise on general safety and remedial action.

Gas BBQs – follow these safety tips

- Keep BBQs in good condition, and have them serviced regularly
- Ensure hose/pipe connections are in good condition, unblocked and fit snugly
- Use only parts (such as hoses) that are designed for LPG
- Never use home-made BBQs or connections
- If gas fails to light properly, turn off the supply and leave for three minutes to allow unburnt gas to disperse
- Always ensure adequate ventilation when using LPG appliances
- Gas cylinders should not be left on the transit hook when a BBQ is in use
- Never disconnect a cylinder without checking that it is turned off
- When reconnecting or exchanging a cylinder, check that the rubber O ring, if fitted, is in position
- Check for leaks with a soapy water solution (never use a match) – if bubbles form, there is a leak. Better still, call in an expert
- If fire extinguishers or fire blankets are available, make sure they are in good condition
- Dispose of out-dated or empty cylinders responsibly
- Ensure location of cylinder is below portable BBQs
- Store LPG cylinders outside, upright and away from sources of heat
- When transporting LPG cylinders, store them in a secure, upright position

Handy safety hint.

Do not dry clothes too close to the heater.
ESV’s new DVD promotes safety near overhead and underground assets

PRODUCTION IS UNDERWAY ON A NEW INSTRUCTIONAL DVD AIMED IN PARTICULAR AT PREVENTING INCIDENTS AND INJURIES INVOLVING CONTACT WITH OVERHEAD AND UNDERGROUND POWERLINES AND GAS PIPES ON RURAL PROPERTIES.

The DVD is being produced for ESV by Backspin, which also produces the ESV gas and electricity safety television commercials. In some ways the production is an update of a version made in NSW some years ago but with a new script, film footage and animation explaining what can go wrong.

The DVD is being produced in direct response to the continuing number of incidents involving trucks and equipment hitting overhead powerlines and underground assets in Victoria. There is hardly a day that passes without an incident involving contact, particularly with above ground powerlines, not being reported to ESV.

While the vast majority of these incidents fortunately do not result in injury, that was not the case in 2006 when two drivers and a farmer were electrocuted as trucks hit powerlines on farms. This year there was a serious incident at Mildura involving a scissors lift and powerline. The victim in this incident lost a leg and a foot among the horrific injuries he suffered.

During their discussions with ESV following the incidents, the widows and families of the two drivers who died in 2006 suggested ESV produces such a DVD believing that it will have a significantly positive impact on those most at risk in such circumstances.

While not identified in the DVD, the widows’ thoughts and emotions which they experienced at the loss of their loved ones do form a small but significant part of the production. ESV appreciates their help and support in the preparation of the DVD.

ESV and Backspin are working to complete the production before the end of the year with it becoming available in early 2009 ahead of the traditional busy time for the delivery of bulk loads of materials to farms.

ESV envisages distributing the DVD through as many avenues as possible across the State, in particular organisations and individuals whose work activities bring them into close contact with overhead and underground assets. ESV will also seek to co-brand the production with other authorities, asset owners and companies.

Appointment of new CEO of Jemena

PAUL ADAMS HAS BEEN APPOINTED THE NEW CHIEF EXECUTIVE OFFICER OF DISTRIBUTION COMPANY, JEMENA LTD. HE STARTED IN THE ROLE ON 10 NOVEMBER.

Paul has over 25 years experience in the Australian energy sector where he has held a range of senior technical and commercial positions.

Formerly general manager of TXU Networks, and most recently general manager, network services at SP AusNet, Paul’s experience covers the management of gas and electricity transmission and distribution networks.

Paul is well known and regarded in the gas and electricity industries and is a director of the Energy Networks Association (ENA).
Warning to take care with Christmas lights

ESV and Victoria’s fire authorities propose to issue their customary warning urging the community to take extreme care when installing and using Christmas tree lights or other decorative lights over the forthcoming festive season.

Importantly, they will also warn against buying cheap decorative lighting products which have not been approved for supply by Australia’s electrical safety regulatory authorities.

There will be a warning that unapproved lights can be dangerous with the potential to start fires in homes and cause people to receive electric shocks.

The community will be advised that Christmas tree lights and other electrical products are only approved for sale in Australia once they have been exposed to rigorous testing by accredited test agencies.

The following advice will be provided:

> Always ensure decorative lighting products have been approved for use in Australia;
> Always follow the manufacturer’s instructions regarding assembly, installation and globe replacement;
> If using the same lights from year to year, make sure they are in good condition and there is no exposed ( uninsulated) wiring before installation. Also, make sure they are dismantled and packed away carefully after use;
> Do not use damaged or faulty decorative lights;
> Never purchase Christmas lights which have not been approved for use in Australia; be particularly vigilant when shopping online.
> Never use decorative lights outdoors unless they are specifically designed for such use. Similarly make sure extension cords are suitable for outdoor use;
> Do not cover or modify decorative lights;
> Always switch off and unplug decorative lights when unattended or when watering a Christmas tree;
> Observe and monitor the correct operation of decorative lights when unpacked and initially used; and
> In households with infants and young children, consider using extra-low-voltage (less than 50 Volts AC) decorative lights supplied from an approved transformer.

People who are aware of unapproved products being offered for sale are asked to contact ESV on (03) 9203 9700 or 1800 800 158.

The community will be further advised that hazards associated with unapproved Christmas lighting products include:

> Light sets designed for overseas voltages less than 230 Volts;
> Plugs incompatible with Australian socket outlets;
> Dangerously thin electrical insulation on the flexible leads;
> Incorrectly rated globes that may overheat and cause surrounding materials to catch fire; and
> Inadequately attached cords that may pull out of lamp holders.

ESV investigates home handymen organisations

ESV has recently investigated “home handymen” organisations after claims that some of their franchisees have been undertaking electrical installation work when unlicensed.

It is understood that franchisees have been under the misapprehension that they can lawfully lay cables and other electrical work provided licensed electricians complete the actual connections.

ESV wishes to make it quite clear to the home handymen organisations, and RECS and LEWS, that electrical installation work includes cable laying and it can only be carried out by licensed people.

There might be a temptation for RECS to condone cable laying by unlicensed workers. But they must not be a party to another person’s unlawful electrical installation work by signing a certificate of electrical safety for work they have not actually done themselves.

ESV has prosecuted RECS and LEWS for such practices in the past and the penalty can be as high as $13,400.00.
ESV Annual Report – recording a busy but successful year

ESV’s third annual report covers the organisation’s operations and activities for 2007/08, but also looks ahead to the challenges which have been set to further improve electricity, gas and pipeline safety in the years ahead.

In his foreword to the report, Director of Energy Safety, Ken Gardner, writes: “Once again it has been a busy year for everyone at ESV but it has been a successful one. Apart from successfully meeting our roles and responsibilities, much has been done preparing the ground work for meeting the challenges of the key corporate strategies we have set ourselves.

“Successfully meeting these challenges will go a long way towards improving energy safety for all Victorians, whether they work in the industries concerned or are members of the general community.

“While we can be pleased with what has been done in 2007/08, we cannot be complacent and we are not. We recognise that the ultimate challenge for us is the reduction, even elimination, of energy related accidents, injuries and fatalities.

“But it is a fact of life that accidents continue to happen. Despite warnings, there is not a day that passes when incidents such as people receiving electric shocks or vehicles and equipment hitting powerlines and pipelines are not reported on our database.

“Unfortunately there was one electrocution involving a lineworker during the year, and another incident resulting in the death of a ‘train surfer’. While this is a significant improvement on the seven electricity related deaths we reported in 2005/06, even one fatality is one too many and our work is a very long way from being finished.

“It is tragic for the family and friends of the victims that serious incidents continue to occur despite regulations requiring safe practices, and almost constant advice and warnings on appropriate and safe behaviour around energy,” writes Ken.

Continuing, he writes: “Our achievements for the year have been many and varied, and every area has pulled its weight. We have a large number of functions to perform and thanks to the commitment of ESV’s management and staff, with the support of our safety partners, our performance certainly meets and often exceeds requirements.”

Achievements in 2007/08 include:

> More than 650 audits of electrical workers and more than 100,000 audits of electrical installations – 81,172 prescribed inspections and 28,881 non-prescribed inspections – were conducted for compliance and safety;

> A total of 574 products were checked for compliance with standards and some 95% were found to be compliant which is a good result. ESV was involved, however, in a number of product recalls;

> Some 12,000 new electrical products were approved;

> On the energy efficiency labelling front, 2,412 products were checked to ensure their performance matched what was claimed in the labelling. More than 980 new products were also checked and approved against energy efficiency standards.

> Nearly 40 information sessions on the new Wiring Rules were conducted across Victoria;

> ESV accepted the safety cases for two new gas companies, and conducted safety case audits to address specific risks relevant to each sector of the gas industry.

> More than 1,000 Type B gas appliances – either large commercial appliances or industrial gas combustion systems – were accepted by audit and inspection. In addition 3,700 complex gas installations underwent inspection and audit processes.

> More than 200 commercial Type A gas appliances were inspected under the Tier 2 arrangements with the Australian Gas Association. Audits were conducted on 20 retailers of new and second hand gas appliances to ensure only safe and compliant equipment is being offered for sale.

> ESV provided advice to event organisers and hire businesses and subsequently audited 60 events across Victoria to ensure public safety.

> Good progress has been made during the year remaking the eight electricity safety regulations and three gas safety regulations which are due to “sunset” next year or in 2010.

> ESV successfully prosecuted 60 cases during the year. The recent focus stopping unqualified people from either performing their own electricity and gas work, or offering to do it for others, continues.

The annual report was tabled in State Parliament at the end of October and is available as an E-book on the ESV website.

The cover of ESV’s Annual Report for 2007/08

THE COVER OF ESV’S ANNUAL REPORT FOR 2007/08

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energy safe visits the Lightning Room at Scienceworks in Spotswood.

It’s never too early to learn about electrical safety, according to Amanda Rocchi, Programs Coordinator in the physical sciences at Scienceworks Museum. Amanda is a science communicator and educator, and gets children as young as six talking about electrical safety.

“Children are never too young to understand that appliances, cords and power points aren’t toys and that they can be dangerous,” says Amanda.

Scienceworks runs live shows daily to bring the wonders – and dangers – of electricity to school students, as well as the general public. Demonstrations are held in the Lightning Room, in a purpose-built high voltage laboratory/theatre which features equipment unique to Scienceworks.

Much of the high voltage equipment was donated by Telstra, following the closure of its Lightning Lab at the Telstra Research Laboratories where they tested the effects of lightning on powerlines. The High Voltage Theatre is still used for research, lectures and experiments by Victoria University students.

The real showstopper in the Lightning Room is the giant Tesla coil, capable of generating two million volts of electricity to produce three-metre lightning bolts – kept safe in an earthed Faraday cage. No other science centre or museum in the world utilises such high voltage generation.

Amanda is justifiably proud of the museum’s unusual collection of high voltage equipment, rigorously maintained by technicians from Scienceworks and Museum Victoria.

“As well as collecting objects significant to the history of science and technology, the museum also aims to inspire and engage people to think and talk about science,” says Amanda.

“This is a great way to learn. I’m a science teacher; I believe in hands-on learning. We can learn a certain amount by reading it in a book or seeing it on a screen, but seeing it for ourselves, or doing it for ourselves, often helps us gain a better understanding. And it’s often more fun.”

One of the Lightning Room presentations, The ‘Electrical Energy, Safety and Lightning Show’, is specifically for grades 2–6. It demonstrates energy transfers and transformations involving electricity. The kids find out about conductors and insulators, electric circuits, switches, fuses, circuit breakers and safety switches.

Highlights include a hair-raising encounter with a Van der Graaf generator a ‘pickle fryer’ which makes light by passing a current through a pickled onion, and the biggest Jacob’s Ladder display in the country. The show includes a spectacular demonstration of lightning strikes using the Tesla coil, and tips for safety strategies in lightning storms.

The show is a definite crowd pleaser.

“Put it this way,” says Amanda. “Not many kids have trouble staying focused. They’re really fascinated, and they’re happy to not only volunteer to be part of the demonstrations, but they volunteer their own stories and have a go at answering our questions. We aim to make concepts that are sometimes quite complex accessible for young people.”

Concepts of electrical safety are communicated in a way that children can easily understand.

“We teach young kids that the electricity coming out of our power points can be dangerous; that electricity can move through us very easily; that it can cause our heart to beat very fast, it can hurt our muscles and can cause nasty burns.”

Teaching electrical safety to children has a definite knock-on effect, says Amanda: “We say to the kids, ‘Go home and ask Mum and Dad if you have a safety switch … you might have a fuse box which looks like this, but you need a safety switch like this.’ It’s a fairly basic message. But a very important one.”

Scienceworks is at 2 Booker Street Spotswood, Victoria. For bookings or enquiries phone 13 11 02.

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<td>Unauthorised excavation near pipeline</td>
<td>$1,101</td>
</tr>
<tr>
<td>Aug 08</td>
<td>REC</td>
<td>6233</td>
<td>Fail to have connected work inspected</td>
<td>$440</td>
</tr>
<tr>
<td></td>
<td>OTHER</td>
<td>6384</td>
<td>Supply equipment not approved</td>
<td>$2,202</td>
</tr>
<tr>
<td></td>
<td>OTHER</td>
<td>6384</td>
<td>Supply equipment not approved</td>
<td>$2,202</td>
</tr>
<tr>
<td></td>
<td>OTHER</td>
<td>6381</td>
<td>Supply non complying equipment</td>
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</tr>
<tr>
<td></td>
<td>OTHER</td>
<td>6201</td>
<td>Supply unregistered electrical equipment</td>
<td>$567</td>
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<td>OTHER</td>
<td>6201</td>
<td>Supply unregistered electrical equipment</td>
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<td>Supply unregistered electrical equipment</td>
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<td>OTHER</td>
<td>6205</td>
<td>Offer unregistered electrical equipment</td>
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<td>Offer unregistered electrical equipment</td>
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<td>OTHER</td>
<td>6205</td>
<td>Offer unregistered electrical equipment</td>
<td>$567</td>
</tr>
<tr>
<td>Oct 08</td>
<td>OTHER</td>
<td>6298</td>
<td>Fails to give electronic notice</td>
<td>$57</td>
</tr>
</tbody>
</table>

Power company warning on stockpiling on farms

Electricity distribution company, SP AusNet, is urging farmers not to stockpile hay and other material under powerlines.

“Harvest time is also hay cutting time and we’ve found that can sometimes result in landowners stockpiling material such as hay underneath powerlines,” said spokesperson, Natasha Whalley.

“Hay is flammable and could start a fire if it came into contact with a powerline. A fire in hay bales stockpiled under a powerline could result in power outages due to smoke and flames, as well as other safety hazards.

“The use of farm machinery to stockpile hay bales near powerlines can also present safety issues. Equipment used in harvesting will mean movement and delivery of grain, hay and silage, shifting of portable grain silos and equipment such as combine harvesters, tractors and tractor towed augers.”

Ms Whalley said that because of the additional activity on farms during this time of year meant it was timely for truck drivers and rural workers, farmers to be reminded that they must never compromise safety.

Gas related prosecutions

ESV has recently taken legal proceedings under the gas safety act against the following:

- Ciccone Constructions Pty Ltd, a civil contractor, was charged with uncovering a gas pipeline without the consent of the owner and with knowingly tampering with a gas pipeline. The company was convicted and fined $20,000 and ordered to pay costs of $2,800.

Electricity related prosecutions

ESV has recently taken legal proceedings under the electricity safety act 1998 against the following. Under the privacy act, energysafe is precluded from publishing the names of individuals charged with offences.

- An REC was charged with installing unsafe equipment, allowing a person who is not an LEIW to carry out electrical work, failing to complete a compliance certificate and failing to complete a certificate of electrical safety. The defendant gave an undertaking to be of good behaviour for one year and was ordered to pay $1,100 in costs.

- An REC was charged with installing unsafe equipment, one count of carrying out non compliant work, one count of permitting a person to install unsafe equipment and for failing to provide a certificate of electrical safety. The company gave an undertaking to be of good behaviour for one year.

- A REC was charged under the sentencing act for a breach of bond imposed for a number of offences under the electricity safety act. An REC was charged with installing unsafe equipment and failing to complete all mandated tests and failing to complete a compliance certificate within four business days. The defendant gave an undertaking to be of good behaviour for one year, and was ordered to make a gift of $1,000 to the court fund by 1 December 2008. The defendant was also ordered to pay costs of $2,000.

- JTE Pty, an REC, was charged with two counts of engaging an unlicensed person, one count of carrying out non compliant work, one count of permitting a person to install unsafe equipment and for failing to provide a certificate of electrical safety. The defendant was convicted and fined $2,000 on each of the two charges. The defendant was also ordered to pay costs of $2,273.26.

- Steer Developments Pty Ltd, a builder, was charged with allowing a person who is not an REC to carry out contracting work. The company was convicted and fined $2,000.
ESV concern as crop duster planes strike powerlines

ESV is concerned at two recent incidents involving planes hitting powerlines while involved in crop dusting operations.

In the latest incident, a pilot was taken to hospital after his plane brought down several spans of 22kV conductors near the South Australian border. One of the lines was hit by a train on the main Melbourne-Adelaide rail line.

An east-bound train reportedly dragged the powerlines until they snapped. Some 50 homes were left without power and train activity between Ararat and the SA border was halted for part of the day after extensive damage to signalling.

The 24-year-old pilot of the plane in question reportedly received burns, bruising and abrasions in the incident. But a police officer quoted in a local media report said it was “unbelievable” the pilot survived as the plane was unhurt and there was only minor damage to the plane.

The line fuses operated and a Powercor crew isolated the line, with repairs being carried out the next day.

There have been six incidents of planes involved in agricultural operations hitting powerlines reported to ESV over the last 18 months.

Under regulations it is an offence for planes, gliders, hang gliders, hot air balloons, parachutes, mechanically propelled model aircraft, model gliders and kites to fly within 45 metres of powerlines without an exemption.

Pilots need to apply for an exemption if performing aerial agricultural spraying within 45 metres of overhead powerlines. The exemption will be subject to the following conditions:

1) An exempted pilot must hold a valid agricultural pilot rating issued by the Civil Aviation Safety Authority;
2) An exempted aircraft must be approved by the Civil Aviation Safety Authority for aerial agricultural operations;
3) An exempted pilot must not allow or cause any part of the aircraft to come closer than 1200mm to an overhead electric line;
4) An exempted pilot must not allow or cause any part of the aircraft to come closer than 45 metres to any enclosures of a zone substation, terminal station and power station;
5) Prior to carrying out any aerial agricultural operation, an exempted pilot must take reasonable care to –
   i) locate all aerial lines in the operational area; and
   ii) perform and document a job safety assessment, identifying all detected electrical lines in the operational area, to avoid risk to persons and damage to property.
6) An exempted pilot must immediately report to the relevant network operator all of the details of any incident involving the aircraft under his or her control with an overhead electric line;
7) If an exempted aerial agricultural operator becomes aware of any incident involving its aerial agricultural aircraft and an overhead electric line, the aerial agricultural operator must immediately report to the relevant network operator all of the details of the incident within their knowledge; and
8) Other conditions may be imposed depending on the circumstances.

Prostate cancer – early detection the key.

Statistics relating to prostate medical issues for Australian men are stark:-

> Prostate cancer is the second highest cause of cancer related deaths in men.
> More than 2,500 men die from prostate cancer each year.
> At least 11,500 men are diagnosed with prostate cancer each year.
> 1 in 5 men over the age of 50 suffer from a medical issue associated with prostate.

The Sponsors of Protect – ETU (Southern States Branch) and NECA (Victorian Chapter) – have long supported programs encouraging men to have prostate cancer tests. A simple blood test can measure prostate specific antigen (PSA) and a digital rectal examination (DRE) allows a doctor to check for changes to the prostate.

If a man’s PSA is high and the DRE shows abnormality, there is a 40% chance of prostate cancer.

ETU and NECA will continue to support prostate cancer awareness programs because:-

> the electro trades is a male dominated industry,
> early detection of prostate cancer greatly improves the likelihood of successful treatment.
New version of AS 1596 / 2008 is recommended reading for installers

Over the next few editions of energysafe we will explain some of the changes in AS 1596 / 2008, which has replaced the 2002 version. It is recommended that installers who usually carry out LP Gas installations, or set up LP Gas at events, obtain a copy of the AS1596 Standard and become familiar with its contents.

AS 1596 explains the location, limits and requirements for the installation of LPG cylinders. It is the standard the LPG cylinders are to be installed to.

The Standards that you should be using for different sections of LP Gas installations are explained in detail in AS 1596.

The following is a brief summary

> AS 1596 includes the cylinder/tank location and piping to and including the first stage regulator.
> AS 4645 covers piping and components from the outlet of the first stage regulator to any LPG meter installed including the meter.
> AS 5601 applies from any LPG meter or from the outlet of a first stage regulator if no gas meter is connected, including the piping, components, appliances, flues and the ventilation of appliances etc.

Cylinders under a building supported by piers

Where a cylinder is to be located under a building supported by piers, the measurements have been altered to the following:

(a) The vertical clearance shall be of at least 800 mm between the top of the neck ring of the cylinder and the underside of any overhanging part of building

(b) No part of the cylinder shall be more than 800 mm within the perimeter of the building’s walls

(c) The area between the piers shall be -
   (i) open on at least 3 sides; or
   (ii) enclosed by a construction through which cross-ventilation can occur. (E.g. slats or battens) on at least 3 sides.
   (iii) a combination of items (i) and (ii) above

Cylinders on verandah

Where one or two 45 kg cylinders are located on a verandah.

(a) The location shall be nominally ground level.

(b) The verandah shall be open on all three sides.

(c) The wall against which the cylinders are located shall be free of windows and doors as required by AS 5601.

(d) The verandah floor shall be free of drains as required by AS 5601.

(e) The hazardous area around the cylinders shall be free of fixed ignition sources, as illustrated in Appendix F.

(f) The cylinders shall be not be subject to physical damage, heat or vibration.

(g) A maximum of 90 kg shall be kept on a verandah complying with this clause. This means verandahs that cylinders are to be installed on, should be at ground level. Wooden decked verandahs are combustible and most will have gaps to under the verandah. These would not meet the requirements of the Standards so cylinders should not be installed on these types of verandahs.

Location of First Stage or Integral Regulators

LP Gas regulators from cylinder supplied systems, now require the first stage or integral regulator to be installed so that the outlet of the regulator is above the cylinder valve.

The cylinder and piping shall be installed so that any liquid formed in the piping will drain freely back into the cylinder. Any such liquid shall not be allowed to drain back to the regulator. They shall have a support that is independent of the cylinder, and mounted with the regulator diaphragm vertical and the vent pointing downwards.

For a cylinder exceeding 400 litres and having lockable domes, the regulator can be connected directly to the vapour valve outlet, or as close as the fittings will practically allow.

You will find more details for location and requirements for first stage regulators in AS 1596.

LP Gas cylinder and regulator connection

In a previous issue of energysafe, the requirements for piping between an LPG cylinder and the first stage regulator were explained; the following indicates the change in the 2008 version of AS1596.

A 0 mm copper pigtail to AS1572 is now acceptable on industrial and commercial applications, with a maximum length of not more than one meter.

Annealed copper tube

Complying with AS 1572 and shall have a minimum wall thickness of 1.22 mm and a nominal size of 6 mm, or for commercial or industrial applications have a wall thickness of 1.22 mm and a nominal size of 9 mm.

Flexible Pigtail

Have a maximum length of 600 mm.

Have a maximum life of six years from date of manufacture.

If making a manifold, parts are available from LP Gas component suppliers to meet the above requirements. Type A or B copper to AS 1432 (The normal tube for gas installations) does not meet the wall thickness requirements for cylinder connections.

Cylinders on footpath

The minor storage section of AS 1596 now defines Protected and Public Places.

Examples of these are:

> Outdoor Temporary Structures (e.g. marquees, tents, booths) and under awnings.
> Outdoor areas of hotels, restaurants, cafes, and take-away food shops.
> Outdoor areas include: footpaths, enclosed gardens and public places.

Cylinders on footpaths, each premise shall have a maximum quantity of 60 kg with a maximum cylinder size of 15 kg.

Public Places are defined as any place, other than private property, open to the public and includes a (footpath) street or road.

Parking areas for commercial and public buildings are not considered public places.

For large LP quantity usage, a fixed and permanent installation can be installed by qualified installer.
It has become evident that many commercial/industrial businesses are now having difficulty with LPG supply to their installations due to additional gas loads, and in order to increase storage or vapourisation rates, are adding extra tanks with a manifold system.

Several installers are connecting these bulk tank systems using a multiple regulator system. The pitfall of this practice is that it is virtually impossible to set 2 regulators at exactly the same flowing pressures, and is therefore not considered good practice to place a regulator at each tank and manifold the outlets.

The diagram below shows the suggested way of manifolding tanks. These are connected together in a common high pressure line, and then to the regulators. The advantage of this method is evident when the results of the incorrect method mentioned above are analysed.

If a regulator is installed at each bulk tank and the outlets manifolded into a common line, the regulator with the highest set point would be supplying the total load. This is due to the fact that the remaining regulators would "lock up" because of the higher delivery pressure. This would result in sacrificing the vapourisation advantage of manifolding, uneven usage from the tanks, and in general defeats the purpose of manifolding.

To eliminate these problems, manifold tanks as per the illustration below.

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**Manifolding of LPG Bulk Tanks**

By Gas Inspector Kelvin Rauber

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**InstaTest 3017**

*Electrical Testing to AS/NZS3000 Wiring Rules, Save Test Results & Print Compliance Reports*

No more hand writing test results when compliance testing electrical work and providing reports of test results. Simply conduct the test, press the MEM button to save the result and assign the result to a location, e.g. DB1 or 1st Floor, Room 5.

The InstaTest 3017 covers all AS/NZS 3000 Wiring Rules tests, including Polarity, Correct Circuit Connections, Fault Loop, RCD Testing and Visual Inspections. In-built Australian Pass/Fail limits & tables also simplify testing.

No more multiple instruments to carry around. No more handwriting test results. The InstaTest 3017 guarantees faster and accountable electrical work.

Call [EMONA Instruments on tel: 1 800 632 953, email: testinst@emona.com.au or www.emona.com.au](mailto:testinst@emona.com.au)
Your questions on electricity installation issues – and the answers

Compiled by ESV Electricity Technical Advisor, John Stolk

ESV regularly receives questions covering a range of electricity installation issues, some of them relating to gas installations. For this edition, energy safe commences a regular series featuring some of the questions – and the answers, providing references to the Acts, Standards, Regulations and Clauses which apply to them.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Standard</th>
<th>Clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can I install a switchboard in a bathroom?</td>
<td>Yes, but it cannot be installed within any classified zone (zone 0, 1, 2 and 3) in accordance with AS/NZS 3000:2007 Clause 6.2.2. from a bath or shower. Note - areas in the proximity of a shower are deemed unsuitable for switchboards because of prevalence of high humidity and condensation.</td>
<td>AS/NZS 3000:2007</td>
<td>2.9.2.5(d)</td>
</tr>
<tr>
<td>After a disagreement with my customer I will not be completing the electrical work. Am I required to give him a compliance certificate, none of the work is connected or completed?</td>
<td>Yes, you have carried out electrical installation work, a compliance certificate describing the exact work and stating if that work has been tested is required to be issued within the time frames.</td>
<td>Electricity Safety Act 1998</td>
<td>Regulation 45A</td>
</tr>
<tr>
<td>I have installed an electric oven &amp; gas cook top do I need to also install an isolating switch?</td>
<td>A functional switch unless required within the manufacturer installation instructions is not required for an electric oven. Means of isolation are required for gas appliances that have electrical component parts and are connected to the electricity supply. The isolation device must be located beside, not behind the appliance and may be achieved by: (a) the use of a plug and socket-outlet, or if the equipment requires to be directly wired, a double pole isolating switch, switching both active an neutral conductors.</td>
<td>AS 6601-2004 Gas installations</td>
<td></td>
</tr>
<tr>
<td>The residential installation has only 3 final sub circuits can I install one RCD?</td>
<td>No, you are required to install 2 RCDs if there is more than one final sub circuit.</td>
<td>AS/NZS 3000:2007</td>
<td>Clause 2.6.2.4(c)</td>
</tr>
<tr>
<td>Can I issue one prescribed compliance certificate for the installation of a 6 unit development with public lighting?</td>
<td>No, there must be a prescribed certificate provided for each occupier at each address, therefore in this case 7 certificates are required, one for each unit and one for the body corporate.</td>
<td>Electricity Safety (Installations) regulations 1999</td>
<td></td>
</tr>
<tr>
<td>Do I need to install a RCD when replacing a single socket outlet for a double if the final sub-circuit is not RCD protected?</td>
<td>No, you can replace a single or change a single with a double socket outlet on an unprotected RCD final sub-circuit without installing a RCD.</td>
<td>AS/NZS 3000:2007</td>
<td>Clause 3.6.3.4(a)</td>
</tr>
<tr>
<td>In other than residential installations can I install a socket outlet incorporating an RCD instead of providing the RCD at the switchboard?</td>
<td>Yes, the RCD can be incorporated within the socket-outlet.</td>
<td>AS/NZS 3000:2007</td>
<td>Clause 2.6.3.2.</td>
</tr>
<tr>
<td>I was advised that you could change a defective light switch or socket-outlet with a like for like replacement and not provide a compliance certificate?</td>
<td>No, the replacement of a light switch or socket-outlets is electrical installation work; therefore you are required to ensure a compliance certificate is issued describing that work.</td>
<td>Electricity Safety Act 1998</td>
<td>Section 45A(1).</td>
</tr>
<tr>
<td>Does a final sub-circuit need to be fire rated if the final sub-circuit supplies an Alimak Construction Hoist?</td>
<td>No, an Alimak Construction Hoist is classified as a crane; the final sub-circuit construction wiring is required to be installed in accordance with AS/NZS 3012. The driver also has the ability to move the crane to the nearest floor if the supply is disconnected.</td>
<td>AS/NZS 3012:2003</td>
<td>Clause 2.4.6.1.</td>
</tr>
<tr>
<td>If a switchboard is installed in a kitchen cupboard do I still require a functional switch for the electric hotplates?</td>
<td>Yes, a functional switch is required to be mounted near the appliance in a visible and readily accessible position. The switch should be mounted within two metres but not on the appliance and in such a position that the user does not have to reach across the open cooking surface. It is recommended that switches, particular those in domestic installations, be marked to identify the appliance controlled.</td>
<td>AS/NZS 3000:2007</td>
<td>Clause 4.7.1.</td>
</tr>
<tr>
<td>I am installing an air-conditioning unit for a client, the current rating indicated on the equipment would allow me to install the unit with 2.5mm² conductor, but the installation instructions provided by the manufacturer requires a 4mm² conductor?</td>
<td>You are required to install the unit as per the manufactures installation instruction.</td>
<td>AS/NZS 3000:2007</td>
<td>Clause 1.7(c)</td>
</tr>
<tr>
<td>I am replacing old switchboard for a new circuit breaker switchboard with RCD and surge protection. Can I issue a non prescribed certificate of electrical safety?</td>
<td>No, a prescribed certificate and inspection by an appropriate licensed electrical inspector is required before the equipment is used.</td>
<td>Electricity Safety (Installations) Regulations 1999 and Electricity Safety Act 1998</td>
<td>Regulation 406 and Section 45A(1).</td>
</tr>
</tbody>
</table>
ESV introduces the online approvals database

ESV HAS INTRODUCED ITS EQUIPMENT SAFETY ONLINE APPROVALS DATABASE. AFTER MONTHS OF PLANNING, SPECIFICATION, TRAINING AND IMPLEMENTATION THE NEW APPROVALS DATABASE WENT LIVE TO THE PUBLIC ON 20 OCTOBER.

The system allows any applicant or a consultant on behalf of an applicant to enter an application for approval, modification or renewal directly online via the ESV website.

This will assist manufacturers, importers, and distributors to reduce the ‘time to market’ by streamlining the electrical safety approval.

Applicants can attach the appropriate test report, product description and photos, pay by credit card then submit the application.

ESV staff then review the application to ensure the supporting documentation submitted provides proof of compliance to the current edition of the applicable Australian standards; are from an acceptable laboratory and relate to the model to be approved; and the photos are complete and adequate.

When satisfied the application is recommended for approval, reviewed by the Manager Equipment Safety then approved by the Executive Manager Electrical Installations and Equipment Safety on behalf of the Director of Energy Safety.

Once approved the applicant / consultant is sent an email informing them the certificate of approval is available for download and printing.

Additionally the public can search all Victorian certificates of approval by Model Number, Tradename, Certificate Number or certificate holder.

This enables buyers, sellers and installers to verify the approval of products before purchasing or installing them.

In time it is envisaged that all Australian approvals will be listed on this site.

Detailed user instructions can be found on the ESV website at www.esv.vic.gov.au

Applicants should click the ‘Login’ button on the right hand side of the home page, then click on “Register for the Equipment Safety Approval Database” and follow the prompts.

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**Distribution company warning on helium balloons after blackouts**

Blackouts in four suburbs on a Saturday night in October resulting from helium balloons being released near powerlines in St Kilda brought a warning from distribution company, CitiPower.

CitiPower regional asset manager, Joe Mravljak said releasing helium balloons or other objects onto powerlines was “extremely dangerous” not just for the people who did it, but for the community.

“When the streamers attached to the balloons make contact with powerlines it’s not uncommon for an electrical flashover or loud explosion to occur,” Mr Mravljak said.

He said it was disappointing that 13,000 homes and businesses in St Kilda, South Yarra, Prahran and Windsor lost power for more than an hour in an incident that could have been avoided.

He said the cause of the incident was discovered by crews patrolling the affected area during the outage.

“As we saw, in addition to the public safety risk - balloon releases have the potential to cause significant public disruption and inconvenience through power outages.”

Unconfirmed reports indicate that some post-Caulfield Cup revelers were responsible for releasing the balloons in question.

---

**ALL YOUR DOWNLIGHT PROTECTION COVERED**

**Insulguard Downlight Enclosure**

- Suitable for new homes and existing dwellings
- Treated with non-toxic fire retardant
- Protects downlights and transformers from thermal insulation and other combustible materials
- Insulguard Downlight Enclosure complies to AS/NZS 3000: 2007 Wiring Rules

**Retro Downlight Cover**

- Retrofit existing downlight installations
- Can be placed through existing downlight holes
- Metal perforation for ventilation
- Retro Downlight Cover complies to new AS/NZ 3000:2007 Wiring Rules

**Dimensions:** 310mm(w)x220(d)x220(h) **Cat No. DLG**

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**Note:** does not include transformer or downlight

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**OMEGA**

**The Power To Perform**

[Contact information for different states]
Commissioning a type B gas appliance – perform a “dry run”

By ESV Gas Inspector, Peter Ryan, who specialises in the inspection of complex appliances

When commissioning a type B appliance, performing a dry run which means activating the appliance and running it without fuel is an important part of the commissioning procedure. The requirement for performing dry runs is detailed in AS 3814 Appendix F.

Part (g) states: Prove that all valves operate in the correct sequence, this test is usually witnessed by the inspector at the time of type B appliance acceptance testing and is done by fitting a manometer to the space between the main safety shut off valves, pressurising the space and with the gas isolated running the appliance through to flame failure.

This is a simple but important test. A successful test verifies that the main safety shut off valves have not been energised prematurely.

ESV inspectors are still finding one or two appliances each year which are presented for inspection and fail a dry run.

A failed dry run demonstrates that the commissioning process has not been properly carried out.

While an appliance that fails a dry run can appear to operate normally there is a significant reduction in the level of safety.

Premature opening of the main safety shut off valves can lead to excessive start gas rate, explosive ignition or an explosion.

ESV inspectors have investigated appliance explosions where the main safety shut off valves have been energised during the pre purge or simultaneously with the start gas valves.

A dry run should be carried out as part of the commissioning process as well as during appliance servicing and after any wiring alterations including disconnecting and reconnecting any wiring.

A successful dry run will ensure this aspect of appliance safety.

ESV re-issues reminder on discontinued electronic ignition systems

ESV has re-issued a safety alert reminding gasfitters that the electronic ignition systems Model C664/71,72,73,81 or 83 and the associated gas valve power monitor VM001 produced by Technical Components Pty Ltd and used on gas burner safety controls are no longer available.

The warning was published in Issue 7 of the energy safe magazine and can be accessed under “gas safety alerts” on the ESV website.

These controls were commonly used on hot water heaters of both the Type A and Type B appliance categories.

Type A appliances in this category are those that have a thermal capacity of no more than 500 MJ/h and have been certified by AGA. They are typically used for such applications as central heating boilers or pool heaters.

To replace a failed unit on a Type A appliance, ESV is advised that for Raypak hot water heaters, Rheem Australia have replacement controls that can be used which will not affect the certification of the appliance. Other manufacturers can similarly be contacted for assistance and information.

When servicing the larger Type B appliance (greater than 500 MJ/h and not AGA certified) the replacement of these components is deemed as a modification. It is a requirement that a submission be made to ESV before work starts.

If emergency repairs are required, for example in a nursing home or similar institution, a Gas Fitting notice for the work must be lodged immediately, and a formal submission as required under the section 73 of Gas Safety Act 1997 lodged within 48 hours.

The use of the Technical Components C664 without the VM001 gas valve monitoring unit combination has been banned for some years and should be replaced whenever it is found in the field.

The safety issue with the use of this combination of controls is failure due to high current draw on the contacts that provide power to the safety shut off valves directly connected to the C664 flame safeguard.

This mode of failure has resulted in the permanent welding of the contacts and has resulted in the unsafe energisation of the main gas safety shut off valves. Gas is then allowed to flow into the combustion chamber in the event of a flame failure, or the burner cannot be turned off.

This can result in the destruction of the heater, and in other cases an explosion may occur when the heat is turned on.

If called to service or repair such a system on any Rheem (Raypak), Teledyne Laars or other brand of hot water heater, the repairer must advise the owner of the equipment that an upgrade is required because of the potential danger.

Under Regulation 22 of the Gas Safety (Gas Installation) Regulations 1999, a person carrying out gas fitting work on an appliance that has a defect which may cause the appliance to become unsafe must notify the owner of the defect and take action as appropriate.

For further information contact ESV’S Gas technical information hotline 1800 652 563

Apprentice plumber may have died saving his boss, says report

A NSW apprentice plumber was electrocuted recently while working under a house.

According to a newspaper report, police believe the victim may have received the fatal shock while trying to save his boss.

The report said the apprentice and his employer were using a grinder to cut through a galvanised water pipe under the house at Rutherford when they received severe electric shocks.

Police believe the apprentice may have realised that his employer was in some sort of trouble and tried to pull him free.

The victim may have thought that the other man was only stuck or jammed against the pipe and has tried to help him by dragging him free, a police spokesman said.

“Either way, he has touched him and has been electrocuted as a result.”

The owner of the house raised the alarm after he saw what happened. Several neighbours who heard the commotion helped the owner provide first aid for the pair until paramedics arrived a short time later.

The victim was rushed to Maitland Hospital, where he died a short time later.

The other man was airlifted to hospital to be treated for possible internal burns. Latest reports indicated he was in a stable condition.

WorkCover NSW said a full investigation was under way.
Earthing of electrical installations using the water reticulation system

In early September, Standards Australia re-iterated earlier warnings to tradespersons, in particular plumbers and water utility workers, to a safety hazard involving the previous practice of using continuous, metallic water reticulation systems as an earthing medium rather than using the currently required method of earthing using an earth electrode.


ESV also convened a workshop to identify precautions which need to be implemented by water utilities to guard against electrical hazards associated with an abnormal voltage rise on metallic water pipes.

The Standards Australia alert reads:
Possible injury and damage to life and property can be caused by earthing installations that use the outdated practice of earthing to metallic pipes. This hazard can appear in two ways: through the introduction of plastic water pipes into existing metallic water reticulation systems; or by faults in the electricity distribution network conducting through metallic pipes.

In both scenarios it is the outdated method of earthing of earth electrical installations to continuous metallic water reticulation systems that is the problem.

Water reticulation systems have changed markedly in recent years with the introduction of many plastic pipes or insulated meters, either as repairs, replacements or alterations to existing services. In many cases, plastic pipes have been fitted to existing metallic systems.

This creates insulating sections that no longer have a continuous, effective and low resistance earthing network and therefore do not provide adequate earthing.

Secondly, the safety hazard can sometimes appear as a flow on effect from breakdowns in the electricity system in Australia, the ‘Multiple Eartheed Neutral (MEN)’ system.

When a breakdown occurs in the MEN system, the neutral-earth connection becomes open-circuit in either the distributors network or in an individual electrical installation. The earth fault is then returned via the earthing system rather than the neutral conductor. As a result, a potential is applied to the water pipe system. When the pipe system is in contact with the earth along its length, this potential is low and less severe. For insulated sections, usually with shorter pipe length in contact with the earth, the potential can sometimes be large and more significant and is often different to that of the water pipe system on the other side of the installation.

If a human is in contact with the metallic water reticulation system at the time of the fault, there could be significant injury or even death caused by the flow of electrical current. Similarly, if the water pipe system within the premises is continuous, it presents a very low resistance to earth. If local problems exist within the installation, there will be a distinct possibility that the tap connected to the continuous water pipe earth system will be at a different potential to the earth at the base of the sink. There will be a current flow once the gap between the tap and local earth is bridged by the action of attempting to turn on the tap.

Standards Australia’s Committee EL-001 has taken action to provide for detection of the problem. A simple test to detect an open-circuit neutral has been developed by the Committee which has been included in the Installation Testing Standard AS/NZS 3017 published in 2007.

This test can then be called up as part of a periodic testing regime in the re-verification Standard AS/NZS 3019 which is mandatory in New Zealand but not in Australia.

In addition, Standards Australia is advising enquirers through the Wiring Rules email service, to install an earth stake if there is not one already in place even though this is not a mandatory legal requirement, to ensure that the protective earthing system connecting exposed conductive parts to the earthed neutral of the distribution system is sound and to additionally fit residual current devices (RCDs) to disconnect the affected part of the installation.

Use of an earth electrode for earthing electrical installations is the method outlined in AS/NZS 3000:2007. Electrical installations (known as the Australian/New Zealand Wiring Rules). This method of connecting to earth has been a requirement for new installations since the 1976 Edition of the Wiring Rules.

The Wiring Rules and its companion documents are Standards that apply to new electrical installations and alterations, additions and repairs to existing electrical installations and not to the maintenance of an electrical installation.

Watters’ water project wins award

energysafe talks to Glen Monte and Phil Blake of Watters Electrical Albury about their Epsom Recycled Water project which recently won the NECA Excellence Award in the Environment and Energy Efficiency category.

With the hot weather on its way it’s a critical time for water, and the team from Watters Electrical in Albury have been doing more than their bit to save it.

Watters was responsible for installing the Bendigo Recycled Water Factory at Epsom to enable the recycling of water to class “A” standard – water that is reused to irrigate gardens, parks, sporting fields, pastures and crops, and used in industry and construction.

The forecasted annual water savings from their project is 4,300 megalitres of water. That’s a big drink for the regional and rural area of Bendigo, which has been devastated by the drought.

“As well as having real social benefits, electrically the project had all of the disciplines”, says Electrical Engineer Phil Blake: “high-voltage work, voltage metering, high-voltage reticulation, transformers, high and low voltage and variable speed drive switchboards, and a lot of instrumentation”.

Watters designed, programmed and commissioned the Citect supervisory control and data acquisition (SCADA) control system for the water plant – a system with a primary function of collecting information data and providing an interface to control specific equipment such as programmable logic controllers (PLCs) and remote terminal units (RTUs).

Not only does the water plant’s SCADA system control the various stages of treatment, it also provides plant and system monitoring, trend-analysis, report generation and archiving.

The SCADA integration into one system provides plant operators with up-to-the-minute process information on the number of critical treatment stages.

The Watters team had to ensure the smooth running of a number of treatment methods to make sure the water is purified and safe to use.

After the water is subjected to biological reactors and sand filtration to destroy and remove most solids, organic matter, nutrients and chemicals from the wastewater, the water is disinfected by exposing it to a combination of ultra-violet light and advanced oxidation (through the use of a chemical such as Sodium Hypochlorite) to remove any remaining micro-organisms.

The water then goes through ultrafiltration, a process of separating particles (small suspended particles, bacteria and other materials) from the water as it filters through a low pressure membrane. Ultrafiltration is used in many processes to make everyday products such as beer, fruit juice and soft drinks.

Finally, reverse osmosis uses a high-pressure filtration system that forces water through numerous layers of thin plastic membranes. This filters out and removes 95–99% of minerals and impurities (such as salts and pesticides) and 98% of biological matter (such as viruses and algae) like a microscopic strainer.

It’s an unusual electrical project that requires hepatitis vaccinations, but that’s just what the Watters team had to do before starting work. “As well as the usual safety issues you find in any construction site – open excavation, working in slippery conditions in mud, and working at heights – we were working with a live sewer,” says REC and Project Manager Glen Monte. “We had to schedule works around specific process flow times to manage any potential health risks.”

“Plus we were working around live, working machinery”, says Phil. “We had isolation procedures in place to make sure our staff weren’t working on live equipment. A lot of the cutovers had to be managed appropriately. We couldn’t just turn the sewage treatment plant off, so there was a degree of interlinking and interlocking required.”

Over the last ten years, water has become a bit of a specialty for Watters. In recent years they worked on the Eastern irrigation scheme in Melbourne which reuses water from the Eastern Treatment Plant, as well as a water reclamation plant in Echuca.

“But Bendigo is the first town we have helped that was really suffering from the drought,” says Phil. “The water restrictions were so severe there. We didn’t see many gardens alive around the place. Some of this water is used to irrigate the parks and gardens. I think it was a real morale booster for the town.”

The team were thrilled to receive the award from NECA. “We thought we had a very good submission for a project two years ago, but it turns out we came second,” laughs Glen, “so we were really surprised – and really pleased to win it this year.”

The award is a ringing endorsement of the quality of work carried out by the Watters team.

“These awards give us a chance to recognise the people who have made outstanding contributions to their companies and our contractors who have taken on particularly challenging projects and executed them well,” said Philip Green, Chief Executive Officer of NECA Victoria. Judging criteria include the quality of work on the project, management systems and technical innovation and work practices, including OH&S and training.”
**Project statistics**

> Complete site 22kV HV upgrade
> 2 transformers
> 2 main switchboards
> 1 sub-board and feeder
> 100+ motor drives
> 200+ instruments
> pressure transmitters
> level transmitters
> pneumatic valves
> Citect SCADA
> Overall control of water treatment processes
> Integration for control of different systems
> Allen Bradley PLC
> Upgrade for primary treatment processes
> Use of 12 pulse transformers and VSDs for harmonic reduction on high lift pump station

As well as the usual safety issues you find in any construction site, we were working with a live sewer … We had to schedule works around specific process flow times to manage any potential health risks.

“Bendigo is the first town we have helped that was really suffering from the drought … I think it was a real morale booster.”

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**Victoria named world best for energy competition**

An international report has ranked Victoria as the ‘hottest’ competitive energy retail market in the world.

Energy and Resources Minister Peter Batchelor said the 2007 World Energy Retail Market Ranking – released by energy and utilities research centre Vaasa Ett – put Victoria ahead of South Australia, Great Britain, New South Wales and Texas when it came to customers exercising competitive choice of electricity retailer.

“It is generally accepted that Victoria is home to the most competitive and vigorous energy retail market in Australia,” Mr Batchelor said.

Mr Batchelor said that since 2002, more than 60 per cent of households and small businesses in Victoria have switched to market contracts, and achieved savings of between 5 and 10 per cent on their energy bills.

“Victorian consumers are actively exercising their right to seek the best energy offers and prices on the market,” Mr Batchelor said.

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Smart meter roll-out streamlined to align with national scheme – starts next year

Changes to the roll-out of smart electricity meters in Victoria, approved recently after lengthy industry consultation, will reduce costs and ensure Victorian smart meters can be integrated with a national roll-out.

Acting Energy and Resources Minister Joe Helper said the State Government is taking action to ensure Victorian consumers are equipped with the information they need through smart metering to monitor their energy use so they can reduce consumption where possible and potentially save money on their bills by using some power at off-peak times.

“The changes approved this week will ensure the roll-out provides a valuable tool for Victorian consumers, while ensuring the system can be fully integrated in the future into a national scheme, reducing red-tape for industry.” Mr Helper said.

“The smart meter infrastructure which will be installed in Victoria from mid-next year will focus on four key services that will be of most benefit to consumers.”

Mr Helper said the four core services the meters will provide include:

> Recording electricity used every half hour, so households can better monitor their energy use and cost;
> Meters read remotely, to help make bills more accurate, help retailers respond to customer enquiries better and distributors can more easily identify faults;
> Remotely connecting supply; and
> Remotely disconnecting supply, making it more convenient for people moving house.

“While the smart meters will initially focus on these four core functions, the meters chosen for the roll-out have been designed to have more sophisticated capabilities ‘switched on’ as the national scheme is developed,” Mr Helper said.

“This will reduce costs and streamline the process by ensuring they do not have to add, remove or alter additional features unnecessarily to align with the national scheme. This will be better for industry and better for Victorian families.

“The start of the smart-meter roll-out will now commence in mid-2009 to allow industry time to prepare for this new type of smart meter. Industry will be required to have the roll-out completed by the end of 2013.”

Complaints to Energy Ombudsman reach record levels

THE ENERGY WATER OMBUDSMAN VICTORIA (EWOV) HAVE REPORTED THAT COMPLAINTS HAVE REACHED NEW RECORD LEVELS. COMPARING THE FIRST HALF OF 2008 WITH THE SECOND HALF OF 2007, OVERALL CASE RECEIPT INCREASED BY 69% TO 15,952 CASES.

Some statistics

> 14,799 of the 15,952 cases were complaints – an increase of 81%.
> 3,344 complaints were received for investigation – an increase of 65%.
> Billing made up 50% of all case issues – up 107% from 5,041 issues to 10,440 issues.

In the six months to June, EWOV booked 10,877 electricity cases – enquiries only made up 687 of them, the rest were complaints.

EWOV said the increased workload resulted mainly due to two national energy retailers transferring in March this year some 1.2 million customers across to their own billing systems – from the systems of the interstate electricity companies from which they were purchased.

“The data transfer didn’t go as smoothly as anticipated. Account and billing issues were compounded by call centre resourcing issues, which led to longer call handling times for the retailers’ customers generally. This in turn led to complaints to EWOV from Victorian customers, whose complaints weren’t addressed as quickly as they should have been,” said EWOV.

The number of cases involving some energy retailers also rose quite substantially in the first six months of 2008 with the major power outage in Victoria in early April exacerbating things.

ESV investigates death of man in bath

ESV has assisted police investigating the death of a 51-year-old man at Warragul. His naked body was discovered in bath water along with a clock radio.

The ESV report of the incident has been supplied to the police.

The report says the portable clock radio found in the bath was fitted with a supply flexible cord containing a two pin moulded plug that was plugged into a double three pin socket outlet. The socket outlet was mounted on the wall opposite the bath adjacent to a vanity unit on which the radio was possibly placed. The outlet provided 240 to 250 volts a.c. supply.

In its considerations, ESV took note that it was possible the clock radio was placed on the corner of the vanity unit by the dead man.

The corner of the vanity unit is abutting the bath and a clock radio placed on the corner of the vanity unit if it fell from the unit would be likely to fall into the bath, said the report.

ESV found that electrical final sub circuit supplying electricity to the socket outlet was connected to a circuit breaker and safety switch with a nominal earth leakage tripping current of 30 mA. The safety switch is understood not to have tripped during the incident.

The safety switch was tested by ESV after the incident and operated correctly. It concluded that it would not have operated during the incident, however, due to a high resistance path between the metallic bath and the electrical installation earthing system.

The ESV report has concluded that a person immersed in water in a bath containing a clock radio supplied with electricity at 240 to 250 volts a.c. could be subjected to an electrical shock of sufficient magnitude to cause death.

The coroner will determine the cause of death.

Former electrician is richest young Aussie

It is amazing what can be achieved with electricians’ qualifications judging by the performance of a former Queensland electrician who surged to the top of the Business Review Weekly’s (BRW) Young Rich list in September.

With an estimated wealth of $441 million, Nathan Tinkler, 32, has knocked off a number of competitors to top the list of Australians aged under 40 who have self-made fortunes of more than $20 million.

BRW said Mr Tinkler was a former mining electrician who purchased a coal mine in 2006 for around $30 million.

He then sold it for $275 million, for a combination of cash and shares.

He sold these shares at the beginning of this year and walked away with $441 million.

According to reports, Mr Tinkler is now indulging his passion of horse racing and has been snapping up horses, stables and studs across Australia and New Zealand.

To be eligible for the list, people must have acquired their wealth without any inheritance.
Congratulations
Daniele – Apprentice of the Year

Congratulations to Daniele Salemme judged victec skills centre Apprentice of the Year who received his award at the 370 degrees group annual Excellence Awards night in September.

ESV was a Gold sponsor of the event and Compliance Officer, Michael Leahy, presented the Award to Daniele.

Daniele is employed by Otis Elevator Company, working in the lift industry. He has achieved an average of 96% across his studies throughout the 3rd stage of his apprenticeship. According to the citation he has displayed outstanding skills on the job and has been assigned work in the higher technical area of lift operations which involves the commissioning and diagnostic work of elevator systems, an area usually preserved for tradespersons of many years experience.

On completing his apprenticeship, Daniele would like to further develop his skills in this area and continue working his way up within the company.

The night was well attended with 240 guests including apprentices, parents, employers and industry stakeholders.

Legislation for storage of carbon dioxide

Australia’s first legislation enabling the onshore injection and permanent storage of carbon dioxide and other greenhouse gases has been introduced into the Victorian Parliament.

Energy and Resources Minister Peter Batchelor said the proposed Greenhouse Gas Geological Sequestration Bill 2008 would ensure onshore greenhouse gas injection and storage were conducted safely and sustainably, and in a transparent and consultative way which met community expectations.

“This draft Bill provides investors with a clear signal that Victoria is committed to the development of carbon capture and storage (CCS), while also protecting private landholders, public health and the environment,” Mr Batchelor said.

“Carbon capture and storage is being explored in many countries because it has the potential to make deep cuts to greenhouse gas emissions.

“Victoria has the opportunity to be a global leader in carbon capture and storage technology. If carbon capture and storage is successful in Victoria, it will help secure the future of the Latrobe Valley and allow us to continue to utilise low-cost energy through our vast brown coal reserves,” said the Minister.

Victoria’s call on an emissions trading scheme

An Emissions Trading Scheme (ETS) should include transitional assistance for low income households, regions and the Latrobe Valley power generators, says a Victorian Government submission on the scheme.

Regional and Rural Development Minister, Jacinta Allan, said the submission highlighted the need for transitional assistance in the Latrobe Valley for the region, workers and power generators.

She said the State Government was committed to an ETS as it will help make deep cuts to greenhouse gas emissions,

“But we must ensure that under an ETS we have ongoing affordable and secure energy supply for households and industry,” Ms Allan said.

“To support ongoing investor certainty in the energy sector and thereby help to secure Victoria’s energy supply as we transition to an ETS, the Victorian Government also supports direct assistance to the existing coal-fired generators.”

State Government apologises to asbestos-affected former SEC workers

The Premier, John Brumby, has formally apologised to former power industry workers and their families affected by asbestos exposure at the former State Electricity Commission of Victoria (SECV) power stations.

Mr Brumby delivered the apology on behalf of the Victorian Government during a Regional Parliament sitting of the Legislative Assembly in the Latrobe Valley.

“Oh behalf of the Victorian Government and the community I want to say sorry and express our regret for the pain and suffering felt by some former power industry workers and their families where caused by asbestos exposure at the former State Electricity Commission of Victoria,” Mr Brumby said.

“Some workers and families have endured intolerable suffering – including the slow and painful effects of lung cancer, asbestosis and mesothelioma.

“The Government sincerely apologises to these workers and their families for the injuries caused by exposure at the SECV.”

A premier’s media release said that the SECV was established in the 1920s and the families of the Latrobe Valley, in Moe, Morwell, Yallourn, Newborough, Traralgon and surrounds worked hard to provide Victoria with its electricity needs.

Mr Brumby said that Victoria banned the use of asbestos in 2003 but the Government understands that some former workers and their families, through going about their daily work, were still suffering the impact of asbestos exposure.

“It is unacceptable that any person through the course of their work is exposed to what we now know is a deadly substance,” he said.

“I hope this apology goes some way to bring closure and resolution for families that are suffering from asbestos related diseases.”

The apology follows new Brumby Government legislation introduced to Parliament which will provide fairer compensation for people suffering from asbestos-related disease.

The Asbestos Diseases Compensation Bill will provide fairer compensation for people suffering from asbestos related diseases.

The Asbestos Diseases Compensation Bill will allow people to obtain provisional damages for asbestosis and then obtain further damages if they are one of the small number of asbestosis sufferers who go on to contract lung cancer or mesothelioma.

These diseases may surface years after exposure to asbestos or the development of asbestosis.
Renewable energy training re-energised

NMIT’s Renewable Energy Training Centre at its Epping Campus has had a super-charged year. Record numbers of students have enrolled in their Certificate IV in Renewable Energy course which trains future designers and installers of renewable equipment. They have also been inundated with requests from licensed electricians enrolling to undertake their Grid Connect qualification.

“Even we didn’t realise how big it was going to be,” says Program Coordinator Gerry Cervasio. “We thought that perhaps we’d run a couple of courses a year, but we have ended up running two a month.”

The course is intensely practical and hands-on. Students work with the latest equipment including passive solar water heating services, inverters, regulators, battery banks and data loggers. The facility has equipment permanently connected to the SP AusNet grid and a 2kW photovoltaic solar panel array.

New underground pit charges from SP AusNet

SP AUSNET HAS ADJUSTED THE CHARGE STRUCTURE FOR UNDERGROUND SERVICE PITS WITHIN ITS ELECTRICITY DISTRIBUTION AREA.

THE CHANGES, WHICH BECAME EFFECTIVE ON 1 NOVEMBER 2008, APPLY TO UNDERGROUND SERVICES THAT ARE LESS THAN 40 METRES, WHERE THE MAXIMUM CABLE SIZE OF 35MM2 IS SUITABLE. THESE CHARGES DO NOT INCLUDE COSTS ASSOCIATED WITH ALTERATIONS TO SP AUSNET ASSETS.

A NEW APPLICATION FORM FOR UNDERGROUND SERVICE PIT INSTALLATIONS HAS ALSO BEEN INTRODUCED. THE NEW UNDERGROUND SERVICE PIT REQUEST MUST BE USED FOR THE ESTABLISHMENT OF THE SERVICE PIT.

THIS FORM SHOULD BE COMPLETED BY THE CUSTOMER’S REC AND WILL PROVIDE SP AUSNET WITH THE DETAILS NEEDED TO ASSESS THE COST OF THE PIT INSTALLATION AND THE ELECTRICITY SUPPLY REQUIRED.

TO OBTAIN DETAILS OF THE NEW PRICES OR ANY OF THE FORMS, VISIT THE WEBSITE WWW.SPAUSNET.COM.AU OR TELEPHONE 1300 360 795.

No sense - no feeling?

It is reported that Romanian electrician claims he doesn’t get electric shocks even when he touches live wires without protection. Constantin Craiu, 51, from Buzau, says he can stick two nails into a power socket and feel only his fingers getting warm.

Mr Craiu said: “One day when I was working as an electrician for the railway company, I had to make some repairs to a building’s network.”

“I asked my colleague to disconnect the power and started doing my job. It was only after I finished that we both realised I was working with live wires.”

Local media dubbed him the Electric Man after he performed a demonstration for journalists in which he put two wires into an electricity socket then used his hands as conductors to turn on a lamp.

Specialists say Mr Craiu’s skin might be unusually resistant to electricity or he may have an unknown anomaly that protects his heart from shocks.

Do not try to follow his example!
New Executive Management appointments at ESV

ESV MADE TWO EXECUTIVE MANAGEMENT APPOINTMENTS RECENTLY.

TERRY CLEMENT WAS APPOINTED EXECUTIVE MANAGER ELECTRICAL INSTALLATIONS AND EQUIPMENT SAFETY. HE HAS BEEN ACTING IN THE ROLE FOR A NUMBER OF MONTHS.

PAUL BONSAK HAS BEEN APPOINTED EXECUTIVE MANAGER GAS INSTALLATIONS AND APPLIANCE SAFETY IN PLACE OF STEVE BROOK WHO HAS DEPARTED ESV AT THE CONCLUSION OF HIS CONTRACT. PAUL STARTED IN THE ROLE ON 11 NOVEMBER.

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Brochure now available for property owners on powerline clearance

As reported in the last issue of energiesafe, ESV has updated the brochure “Powerline Clearance and Your Property", working in tandem with electricity distribution companies.

The brochure summarises the contents of the Code of Practice which sets out the minimum clearances and the responsibilities relating to electric lines, trees and vegetation in Victoria.

The overriding message of the brochure is that trees must be kept clear of powerlines and explains how this can be achieved and who is responsible.

It stresses that landowners are responsible for the cutting of trees on their properties that may interfere with their own electric service line or private electric line, or a private electric line on an adjoining property.

Trees near other electric lines that cross boundaries or trees within properties near the electric lines in the street are the responsibility of the electricity distribution companies.

For safety reasons it is recommended that cutting of trees be done before trees grow to within one metre of an insulated electric service line and two metres for bare wired service lines.

The responsibility for keeping the trees in the street from interfering with electric lines lies with either the electricity distribution Companies, local council or road authority depending on the locality.

As the brochure states, prior to cutting trees on properties, it is a requirement that the electricity distribution company in question provides at least 14 days notice detailing the proposed works, except in emergency situations where the legislation provides that notice be given as soon as practical after the completion of the work.

The brochure also summarises the consultation and dispute resolution processes which apply when it comes to cutting trees.

It also advises land owners with further enquiries to contact their distribution company in the first instance.

The brochure is available from ESV.

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Decision on ESV’s future accommodation requirements

ESV has reviewed its accommodation requirements with particular emphasis on the future of its Southbank and Nunawading locations. A staff survey was undertaken as part of the review.

It has been decided that ESV will remain at Southbank for the next six years but will relocate from its current Nunawading accommodation to new premises possibly as early as the middle of next year.

ESV’s current lease for Southbank concludes in mid-October next year, and it has been decided to take up the option to extend the lease for a further five years from that date.

ESV’s lease on its accommodation in Ceylon Street, Nunawading, is due to expire in September 2010 and it will not be renewed.

ESV expects to relocate from these premises before the lease expires, and it could happen as early as mid next year if suitable accommodation can be found.

The search is now on for alternative accommodation with the initial focus being in the area between Nunawading and the inner city. A user needs list is being prepared to assist the search.
Working “live” on switchboards and electrical installations can be very dangerous. Think of your fellow workers and in particular, your families. Electrocutions and injuries can be just as devastating for others as it can be for you. Don’t risk it.