THE NEW WIRING RULES
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How to obtain a copy.

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ESV’s online services
FROM THE EDITOR

It has been a busy few months as far as energy safety in Victoria is concerned and hopefully Issue 10 of energy safe reflects a great deal of what is happening.

Activities are wide ranging – new energy safety commercials are being put to air, ESV’s range of online services is enhanced significantly and there is a whole lot more happening to make Victoria a safer place as far as electricity, gas and pipelines are concerned. But, incidents and injuries keep happening.

Possibly the most significant event of recent weeks is the release of the long awaited new Wiring Rules – AS/NZS 3000:2007 – at the start of November, and by the time you read this the hard copies will be available.

One could be humorous and suggest that the new Rules will make essential Christmas reading! But the reality is that there is a lot to take in from the new Standard and while the provisions will not become mandatory in Victoria until the middle of next year or so, it is amazing how time flies.

Of course we have a report on the new Wiring Rules explaining briefly the changes and other improvements made compared to the previous version. We also have all the information on how you can obtain your copy.

An underlying theme of the revised Standard is the setting out of “specifications and procedures to ensure electrical installations, services and systems are safe and reliable”.

Mention the word “safe” and this leads to another important issue – safety in the lead up to Christmas and the holiday period.

Recently, WorkSafe issued a media release with a stark, no-holds-barred heading: “Victoria moves into the pre-Christmas death zone”.

The release urges Victorian employers, supervisors and workers to do all they can to prevent serious injuries and deaths before Christmas.

In November and December last year eight people died at work and this represented almost a quarter of the year’s total of 29. With 20 fatalities reported to WorkSafe so far in 2007, the danger is that the figure could increase significantly in the remaining weeks of this year. Let’s hope it doesn’t happen.

So what is the cause of the alarming “spike” of increased deaths in 2006 in the last months of year? Is it because everybody is working that bit harder and with less regard to safety because of the need to finish things off before the end of year?

ESV and energy safe lends its support to WorkSafe in appealing to everyone to take that little bit more care in these crucial final weeks of 2007 and not become a statistic that nobody wants. Fortunately there were no electrical or gas tradespeople involved in the “pre-Christmas death zone” in 2006 and please make sure there are none in 2007 either.

On a cheerier note, Issue 10 is packed with essential information on electricity and gas safety. Once more we are confident there is something in it for everyone.

And finally, as this is the last issue for 2007, the team at energy safe wishes to thank everyone for their support during the year.

We are certainly encouraged by the positive comments received about the magazine and we will be striving to at least maintain and hopefully improve the standard in 2008.

Please have an enjoyable Christmas and New Year. In particular make it a safe one.

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

FRONT COVER: It is the industry “bible” and no one with a professional involvement with electricity in any capacity whatsoever can afford to be without one - the new edition of the Australian/New Zealand Standard for Wiring Rules (AS/NZS 3000:2007). As our front cover depicts the new Wiring Rules should become a tool of the trade, after all the provisions will become mandatory within a few months. We have information on the new Rules and the details on how to obtain a copy.

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THE “INDUSTRY BIBLE” - NEW WIRING RULES RELEASED

It’s called the “industry bible” and a “must have” document. There are 450 pages and it comes in a two-part format. Yes, it’s the new edition of the Australian/New Zealand Standard for Wiring Rules (AS/NZS 3000:2007).

It was released in early November and copies can be ordered by email, through the web or by phone. See details on how to obtain a copy on page 28.

The new Wiring Rules are essential reading for electricians, electrical contractors, design consultants, inspectors, regulators, industry training bodies, as well as manufacturers, importers, wholesalers and retailers of electrical equipment and accessories. Other tradespeople – including gasfitters who have “D” licences – should also have their own copy.

It is expected that the new Rules will be mandatory in Victoria from the middle of next year.

The new edition comprises:

> Part One outlines fundamental safety principles and provides an ‘outcomes oriented’ approach to allow flexibility in design.
> Part Two details ‘deemed to comply’ solutions to satisfy the Part One fundamental safety principles for the majority of electrical installation work.

Standards Australia says the new edition is more flexible, user-friendly and easier to read, and includes both revised and new definitions including the following terminology:

> electrical installation;
> circuit;

> basic protection (protection against direct contact);
> fault protection (protection against indirect contact);
> outbuilding;
> isolation; and
> competent person.

Other key changes to the Wiring Rules Standard include:

> the extended application of Residual Current Devices (RCDs) and testing for correct operation;
> protection against arcing faults;
> requirements for selectivity (discrimination) between circuits;
> strengthening of requirements for the prevention of the spread of fire;
> enhanced requirements for recessed luminaries;
> requirements for sanitisation areas in the food processing industry;
> inclusion of detailed guidance material removed from the 2000 edition; and
> a more intuitive index, additional appendices, illustrations and background information.

Standards also says the revised edition expands on issues relating to electrical installations, improves safeguards and, addresses the needs and expectations of stakeholders through what is a concise and comprehensible two-part publication.

Colin Blair, Deputy CEO of Standards Australia said in a media release that the Wiring Rules Standard plays an important role in setting out specifications and procedures to ensure electrical installations, services and systems are safe and reliable.

“Recognised as the benchmark for safe and efficient electrical installations, Wiring Rules is one of the most widely used Standards in Australia and has played an important role in reducing the incidences of electrical mishaps and injuries,” he said.

“Of note in the new edition is an increased emphasis on common, practical, cost effective and flexible methods to achieve safety compliance, fitness for purpose and a level of good practice.

“Changes in the new edition reflect the increasing use of Residual Current Devices (RCDs) to all socket outlets and lighting circuits rated up to 20 amperes and include restricting the number of circuits that can be connected to any one RCD and the required division of lighting circuits over RCDs.

“Taking into consideration the experience gained through the application of the former edition and a survey of the electrical industry, the new edition flows more logically, is easier to understand, reinstates much of the supporting information omitted in the previous edition and contains more diagrammatic representations of concepts and more real-life examples,” said Colin.

The new 2007 edition of the Wiring Rules Standard was produced by the joint Standards Australia/Standards New Zealand Committee EL-001. It is available from SAI Global at www.saiglobal.com/shop or by ringing 131 242. Hard copies are scheduled to be available by the end of November.

BEWARE: NOT ALL CIRCUIT BREAKERS ARE EQUAL

An ESV investigation of a recent switchboard fire in the classroom of a Melbourne suburban primary school has revealed – not for the first time – that some electricians have inadvertently installed isolating switches in switchboards believing them to be circuit breakers.

It was only the quick reaction of the school staff, who turned off the main switch which prevented possible serious injury to both the children and the teacher who were in the class room at the time.

As a consequence the distribution board suffered irreparable damage as well as substantial smoke damage to the adjacent class room where the board was installed.

The device used in this instance, commonly called a non-auto circuit breaker, although similar in appearance to overload circuit breakers, did not provide overcurrent protection.

ESV’s advice

If electricians have any doubt as to the capabilities of the device they are installing, they should contact the manufacturer or distributor for advice.

Remember – it is the responsibility of the installer to install the appropriate equipment!

MULTIPLE ERRORS COULD HAVE CAUSED BUILDING SITE ELECTROCUTION

A worker recently suffered an electric shock on a building site in Melbourne’s CBD – and ESV’s investigations showed he was lucky not to have been electrocuted. A non compliant and unsafe cord extension set, temporary wiring and poor work practices were the ingredients of a potential disaster.

During the investigation, an ESV Enforcement Officer found a three-phase cord extension set plugged into a temporary supply box which was “dangling” unsupported down the outside of a building for six floors.

As this still did not reach the ground, a four metre three-phase cord extension set was added to supply a wet saw which was being used to cut concrete in a lift well.

During use the saw stopped and when the intermediate plug and socket were “wiggled” the conductors within the plug fused, melted the plug case and gave the worker an electric shock.

The investigations showed that one wire within the plug had come out of the terminal and shorted to an adjacent phase resulting in a phase to phase short circuit.

Further investigation found that although the four metre three-phase cord extension set had been “Tagged” it was not terminated or assembled correctly, was made from non-compliant 2.5mm PVC insulated / PVC sheathed lead (Orange circular) and fitted with four-pin plug and five-pin socket.

ESV’s conclusion

Working in confined spaces on construction sites in wet areas using defective equipment is dangerous. If the equipment does not look safe DO NOT use it - even if it is tagged as compliant. IT’S YOUR LIFE.

For information on the Standards which were not complied with in this instance, see page 29.

The damaged and non-compliant equipment retrieved from the building site.
HAIR STRAIGHTENER
RECALL

The hunt is on through a major national recall alert for more than 60 000 upmarket hair straighteners imported into Australia from Korea. According to one major importer of the product, some 30 000 have been sold in Victoria.

Three models of hair straightener are now the subject of the recall across all states and territories after it was discovered that the heating plates in the product may become “live” to 240 volts and cause electric shock.

Although the models were approved and approval numbers issued for them, the problem arose after the manufacturer changed the specification and did not inform the safety regulator involved – the Queensland Electrical Safety Office (ESO) – or the importer.

The importer, Dateline Imports P/L, is managing the recall. Other safety regulators including ESV are monitoring the recall process. The recall notice was published in 28 newspapers across Australia including the Herald Sun and The Age in Victoria.

Other hair straightener products from the same manufacturer brought to Australia by different importers are also being checked, primarily by the ESO to ensure compliance and safety. Other models may be recalled following the checks.

Information provided by Dateline Imports P/L show sales of the hair straightener totalling 61 256 – 29 514 of them in Victoria.

Continued opposite page.

Handy safety hint. Tell your customers:
Because water conducts electricity DO NOT touch electrical appliances or switches with wet hands. You could receive a fatal shock.

ECOSMART ELECTRICIANS
THE GROWING DEMAND FOR SUSTAINABILITY

The demand among Australia’s electricians to get a better understanding of the technologies and products used in providing energy efficient solutions for their customers is growing dramatically.

According to NECA’s CEO Philip Green the “recently released EcoSmart Electricians Program has seen an unprecedented demand from contractors wanting to get a head start in this fast growing market”.

The program, developed in Victoria, and now being offered Australia wide, provides training and certification for electricians and accreditation for the contracting business to enable them to brand themselves as EcoSmart Electricians.

The program provides the contractor with a range of marketing and support materials and training which are designed to provide a recognisable market differential for the customer. Market research conducted by NECA as part of the program shows that it is not always clear to home-owners how to make energy savings in the electrical field, because they are not as obvious as in water conservation or recycling materials.

The opportunity exists for electricians to have an effect by providing advice on the options available. This applies across the market, whether it is in the domestic, commercial or industrial sectors.

The EcoSmart Electricians program has a role to play in equipping electricians with the knowledge to help customers make the right decisions on energy-efficient installations and products, and educate them on the savings they can make.

Since August NECA has run 9 courses in Victoria in both metropolitan and regional areas, with additional courses being run in Sydney, Brisbane and Perth. The training schedule for the 2008 up until June has been finalised and is shown inset.

Response from attendees has been most positive according to the program manager Rod Lovett. “The feedback across the board has been excellent,” he says. “The training material has been developed in association with industry so the information is of the highest order and we use industry based trainers to present the material, so the guys get the best of both worlds”.

McKnights Electrical Ballarat contract manager Casey Moran who recently completed the training is typical of the attendees. He said that the course provided him with invaluable information.

“It showed me which systems use a lot of energy and ways of reducing power consumption across a range of areas such as lighting and motors. I believe it’s really important for electricians to get on the bandwagon and know more about new technology. Saving energy means saving money so that is a win win.” The course also provides participants with an introduction into the area of solar grid connect systems, an area that Rod believes will become a growing market.

“The need in the market for ‘clean and renewable energy’ is growing rapidly and many home owners see this as a viable option.”

For more information visit www.ecosmartelectricians.com.au or call 03 9645 5533

TRAINING COMMENCEMENT DATES
AND LOCATIONS FOR 2008

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energy safe advertorial – an article supplied by NECA

EcoSmart Electricians
Connecting you to a more sustainable future

The growing demand for sustainability

The demand among Australia’s electricians to get a better understanding of the technologies and products used in providing energy efficient solutions for their customers is growing dramatically.

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Silver Bullet Centurion and Platinum hair straightening irons with approval number N20360 and Extreme, Extreme Wet to Dry, Extreme Ionic and Extreme Titanium hair straightening irons with approval number Q04093 or Q041236 are the subject of the recall.

The Recall Notice says the affected products can be identified by the approval number located on the name plate.

“This measure has been taken because the manufacturer of these appliances has changed the specifications of these appliances with the result that the heating plates may become live to 240 Volts with the risk of electric shock.” It says.

The notice urges consumers to discontinue the use of the hair straighteners immediately.

Customers are advised to visit the dateline Imports website at www.datelinecity.com or call 1800 251 215 between 10 am and 4 pm Monday to Friday to arrange a replacement at no cost.

ESV is receiving a number of queries following recent statements in the media that electricians and contractors can now work interstate under the provisions of their state based licences or registrations.

While there is now mutual recognition of electricians’ licences and contractor registrations across all states and territories, ESV wishes to point out that these statements are not completely correct.

Under mutual recognition a person holding a licence or registration in one state or territory must apply for a comparable licence in another state or territory.

Recent changes means it is now much easier for electricians and contractors to move across borders and start work, but they can only do so after they have applied and received the comparable licence from the responsible regulator in the state or territory concerned.

There is more information under “licensing and registration” on the ESV website. There is a link from this section to another site – www.licencerecognition.gov.au – which has extensive information about the mutual recognition provisions.

One of the recalled hair straighteners

ESV Range
Patents Pending.
**USE ESV’S ONLINE SERVICES TO RENEW LICENCES AND REGISTRATIONS ELECTRONICALLY**

ESV’s expanded and enhanced range of online services is now available, enabling in particular registered electrical contractors, licensed electricians and licensed electrical inspectors to renew their registrations and licences electronically – and undertake other business processes online.

Under the changes, the branch offices of agencies distributing certificates of electrical safety on behalf of ESV can now conduct more of their business with the organisations online. Internal business processes within the branches can also be enhanced through using the ESV system.

Director of Energy Safety, Ken Gardner, said: “There are winners and no losers to emerge from the introduction of the new services. On the one hand, ESV is a winner because of the improvement in the way it can do business with customers, while registration and licence holders – and others – are also winners because of the savings in time and money they can make by conducting their business transactions with ESV online.

“Conducting business online, such as banking, paying bills, ordering services and equipment – the list goes on – is now a natural part of life for many of us. At ESV we regarded it as very important to take due regard of requirements and stay abreast or even slightly ahead of developments in the world of online services.”

ESV conducted some research earlier this year to gauge the demand of its customers for more online business opportunities and what encouragement might be required before they would use the new on-line licensing and certification services. Registration and licence holders in particular indicated very strongly that they wanted to do more of their business with ESV online and that they did not need any encouragement to do so.

Ken said: “Delivering the new service is proof that ESV is a progressive organisation willing to embrace the best and latest technology to improve the way it does business – for the benefit of customers as well as itself.”

Promotional leaflets explaining the new services will be distributed to certificate of electrical safety agency branch offices shortly, and to registration and licence holders well ahead of renewal times. The full range of online business opportunities will be explained in the leaflets. 

To access the ESV online services, registration and licence holders will use the same USER ID and PIN required to access the IVR system. They will then be asked to create a new password to be used when logging into the online services.

Briefly, the expanded and enhanced online ESV system will enable:

> **Registered Electrical Contractors** to renew registrations, change business details and improve the ordering and management of certificates of electrical safety.

> **Licensed Electrical Workers** to renew licences and use the system to view reports of business activities.

> **Licensed Electrical Inspectors** to renew licences, add inspection classes and view reports of business activities.

> **Agency branch offices** to view stock levels of certificates of electrical safety, view sale history and transfer or re-stock incorrectly sold certificates.

During ESV’s research earlier this year a common question asked by respondents was: Once licence holders provide credit card details, will ESV automatically debit the card each time the licence needed to be renewed without telling the holder?

All customers can be assured this will not happen. Every time a licence or registration comes up for renewal, the holder will receive a renewal notice and have the option of paying online, by mail or in person. Even if they pay online on one occasion, it does not mean they have to use this service the next time if they want to pay by another method. And ESV will not use the credit card details under any circumstances.

ESV proposes to progressively increase its range of online services.

Because some registration and licence holders do not wish to avail themselves of the online services, traditional processes for conducting business with ESV will remain in place for as long as there is a need.

---

**MAN RECEIVES BURNS TO ARMS, FACE AND CHEST IN TRENCH EXPLOSION**

ESV is assisting investigations into a trench explosion in which a man received burns to his arms, face and chest when the bucket of an excavator struck an underground powerline.

The incident occurred in Lorimer Street, Port Melbourne, in late October when contractors were laying a new fire service ring main pipe.

The victim was taken to The Alfred for treatment and is reportedly recovering from his injuries.

A statement provided by the operator of the excavator said workers at the site had been made aware of a sewer and live powerline in the vicinity of the trench they were digging.

The victim was in the trench.

The operator said the sewer was exposed mostly by hand and he then used the excavator to dig slowly – just between 30 mm and 50 mm of earth at a time. The victim was keeping watch on the teeth of the excavator’s bucket while the digging was underway.

According to the statement it was when the bucket was being slowly lifted that there was an explosion – with flames coming out of the trench.

The operator said he immediately went to the assistance of the victim.
ESV’s new television commercial warning of the need for care when using outdoor gas appliances – barbecues, gas lights and heaters – is aimed at preventing deaths, fires and the sort of terrible incident in which Melbourne couple Jenny Spencer and Con Kondovasis received serious burns.

Jenny and Con remember enjoying the barbecue at their friend’s house last summer – that is until someone disconnected the gas cylinder while the gas was still on, and the barbeque was still sizzling, creating an explosion that blew Jenny across the backyard and burned 30% of her body.

It was a typical summer backyard scene. The adults standing around with drinks and nibbles, the kids playing in the pool. The blokes fired up the barbie and started cooking.

Then there was a big debate whether there was enough gas in the cylinder to finish cooking the meat. One of the blokes offered to take the gas cylinder and exchange it for a full one.

Con said: “He undid it without turning off the gas first. I can remember shouting: No don’t.”

Jenny, standing three or four metres away, caught the full force of the explosion. The gas cylinder rolled onto its side, creating a fireball with a force “like a blow torch”, directed straight at her. Jenny was thrown back against the awning, dislocating her knee.

“I was trying to move out of the way of the fire and I didn’t know why I couldn’t.”

Con ran over and put his hands into the fire, grabbing her and pulling her out, receiving serious burns to his hands and arms in the process.

Jenny had the presence of mind to run straight into the house and under the shower, dislocated knee and all. It was a piece of quick-thinking that probably reduced the severity of her burns and aided her eventual recovery.

“The worst thing was that the bathroom was full of mirrors, all around me. I could see every inch of my burns.”

Jenny was taken by ambulance to the Victorian Adult Burns Service at The Alfred.

“It ignited so quickly. We couldn’t smell it. We heard it first.”

Jenny benefitted from some ground-breaking burns treatment at The Alfred which meant that she didn’t have to have skin grafts. Ten months later, everything is healing beautifully.

“Now it’s just a matter of time. They told me it takes up to two years for nerves and tendons to return to normal.”

The psychological effects are harder to heal. A few months down the track Jenny was diagnosed with post-traumatic stress disorder (PTSD), a condition common to many burns and accident victims.

Jenny and Con are keen to spread the gas safety message. “When we were in the burns unit, we were told that there had been four other barbecue accidents in the weeks before me,” says Jenny.

“People don’t even think they need to know how to operate a gas barbecue properly … You wouldn’t get in a car and drive it without learning exactly how to use it and what risks you are taking.”

Con says: “Alcohol and gas bottles don’t mix. You should breathalyse people before they use the barbie.”

You can read about the new commercial on page nine.
OWNING AND OPERATING TYPE B GAS APPLIANCES – AUDITS TO ENSURE COMPLIANCE

By Steve Brook, ESV’s Executive Manager, Gas Installation and Appliance Safety.

Before a Type B gas appliance can be operated in Victoria, it must be “accepted” by ESV. This means an application has been made in accordance with the Gas Safety Act and following a safety assessment, ESV has indicated that it has accepted the appliance. An acceptance label will then be attached to the appliance.

ESV acceptance remains current as long as there are no changes to the appliance specification or installation. This means the appliance may not be modified, changed or moved without a new application being made to ESV.

Once an appliance has been accepted, the Gas Safety (Gas Installation) Regulations (R35) require the owner to keep that appliance in a “proper state of repair”.

Type B appliances embrace many differing types and various energy inputs. A “proper state of repair” may range from simple servicing and maintenance to detailed scheduled maintenance and inspection regimes associated with process plant and equipment of great complexity. In making judgements on compliance with R35, ESV inspectors seek to verify that owners have:

> considered their obligations and have service maintenance systems in place that demonstrate compliance; and
> directly or through other facility maintenance or asset management arrangements, employed competent Type B appliance persons to undertake work.

ESV acceptance remains current as long as there are no changes to the appliance specification or installation. This means the appliance may not be modified, changed or moved without a new application being made to ESV.

A landlord who installed a second hand cooker in a rental property should be regretting his actions after receiving a substantial fine and costs for carrying out the work while unlicensed.

The tenant of the property told ESV that the cooker had tilted forward causing a pan of hot water to fall and scald a young child.

In its investigations, ESV found that the upright cooker was not stabilised as required by Australian Standard Gas Installations AS 5601.

The landlord was prosecuted in a magistrate’s court and was fined $3500 and ordered to pay a further $1585 in costs for carrying out plumbing / gasfitting work while not registered or licensed to do so.

There is no doubt that if the work had been carried out by a licensed gasfitter, the stove would have been stabilised as required under the regulations – and the incident would not have happened.

A landlord receives big fine for unlicensed gas installation.

By Steve Brook, ESV’s Executive Manager, Gas Installation and Appliance Safety.

R35 Compliance audit - 2008

What will this mean to Type B appliance workers?

In 2008 ESV will consult with Type B appliance owners and commence the roll-out of an audit program to confirm compliance with Regulation 35.

ESV will be looking to audit maintenance strategies and outcomes by reference to service records. These audits will include service organisations and appliance workers.

Your client may provide a service schedule or you may be asked, as a competent Type B person, to establish a schedule by reference to manufacturers’ service requirements. Either way you may wish to consider your servicing/maintenance report and ask yourself:

> does it record the work performed?
> does it include sufficient information on the appliance condition, settings and combustion performance?
> does it provide a means to clearly identify any safety issues or concerns?

ESV will ask Type B appliance owners to provide evidence that competent persons are undertaking work. If you are a Licensed Type B person and/or operate a business that includes the servicing of Type B appliances, you must ensure competent persons do the work.

ESV will seek assurance from appliance owners that any change to the accepted specification of a Type B appliance has been managed with the involvement of ESV.

As a competent person you are expected to understand your obligations in applying to ESV to accept changes from an appliance’s original specification.

For further details, please contact the ESV Gas Safety Technical Information Line on 1800 652 563.

Handy safety hint. Tell your customers:

Statistics show that the most frequent of gas related incidents within the home involve cooktops and heaters. Never leave cooking unattended. Make sure there are no flammable materials near appliances. Always have appliances installed and regularly serviced by a licensed gasfitter.
ESV’S NEW GAS SAFETY COMMERCIAL WARNS OF DANGERS FROM OUTDOOR APPLIANCES

It’s a blissful scene – families and friends having a good time around the campfire gazing at the stars above. A serene and peaceful time with lots of laughter, chatter and banter for some while others busy themselves with such activities as preparing food and fixing little things around tents and caravans.

Suddenly there’s a reality check. Flames are seen escaping from the valve of a Liquified Petroleum Gas cylinder. Thanks to the quick action of one of the campers, the flame is extinguished. There are no injuries just shock and amazement at such a thing happening. The consequences could have been a lot worse.

This is the scenario in ESV’s new gas safety commercial which started showing on metropolitan and regional television – along with the new electricity safety commercial featured in the last issue of Energy Safe Victoria – from the middle of October.

ESV selected this commercial because of two deaths in 2006/07 caused by fires resulting from gas escaping due to insecure fittings between appliances and LPG cylinders. Two girls received serious burns in a tent fire also resulting from gas escaping from a cylinder. These incidents have been reported in Energy Safe Victoria.

The message of this commercial is:

Whenever you use gas appliances at home or on holiday
Always check the fittings are tight
And the hoses are in good working order.
Never use appliances inside tents or near anything flammable.
Always treat gas with respect.
Click on to Energy Safe Victoria.

Mr Batchelor said that people needed to make sure:

> The appliances and gas cylinders are in good condition;
> Connecting hoses between the cylinder and appliance are not damaged or leaking gas;
> Hand-tightened cylinder connections are as tight as they can go – in the case of other fittings use a spanner if possible.

Electrical safety

Mr Batchelor also reminded Victorians that it is illegal and dangerous for householders to undertake their own electrical work around the home.

“The message is clear, always use a licensed electrician, ask to see their licence before they start work and demand a Certificate of Electrical Safety when the job is completed,” he said.

“Electrical work done by unqualified people can be a recipe for disaster. While shoddy and dangerous work may not be immediately apparent, the risks caused will be there for any current and future occupants in a property.”
ESV ASSISTS INVESTIGATIONS AFTER BOY CONTACTS OVERHEAD CONDUCTOR ON RAILWAY LINE

ESV is recommending that authorities accelerate the placing of barriers on the overhead electric line structures across Melbourne’s suburban rail network to prevent people climbing onto them.

The recommendation follows an incident in late September involving a 14-year-old boy who received an electric shock and burns, and fell more than 10 metres to the ground after climbing a structure on the Melbourne to Frankston line near Seaford.

ESV assisted Victoria Police and rail authorities, including the track owners and the operators of the system, with inquiries into the incident.

It was ascertained that the boy had climbed the steel structure and had been standing on the lower steel cross arm when he contacted the middle phase of the 22 kV conductor with his right hand, his left hand appeared to have been on the vertical section of the structure. He then fell to the ground sustaining serious injuries.

Following the incident the boy was placed on life support at the Royal Children’s Hospital with burns to 40% of his body, together with a broken pelvis and femur. He also received serious injuries to his left foot and right hand. His condition was not known when energysafe went to press.

ESV’s Investigations Officer, Michael Leahy, conducted an on site investigation including using an elevated work platform to examine the area of the structure from where the boy is thought to have fallen.

He found that on the bottom cross arm – 10.7 metres above the ground – was a burn mark and what appeared to be white rubber from the sole of a shoe. Splatters of copper could be seen along the conductor.

On the top cross arm were two rubber rings on the bolt that held the insulator. It is hard to see how these rubber rings could have got there by any other means other than being placed by someone, said the ESV report into the incident.

Preventative measures

As a result of a similar incident some two years ago, ESV in conjunction with the network operators, MainCo, developed a program to install barriers on the structures some three metres above the ground therefore making them more difficult to climb.

MainCo has advised ESV that the work installing the barriers will be completed by November 2009.

A typical barrier to prevent unauthorised climbing on overhead electric line structures.

The structure from where the boy received the electric shock and fell to the ground.

ANNUAL REPORT – A LISTING OF ESV ACHIEVEMENTS IN 2006/07

ESV’s Annual Report for the financial year 2006/07 was tabled in State Parliament at the end of October and is now a public document. It is available on the ESV website at www.esv.vic.gov.au

In a letter to stakeholders accompanying copies of the report, Director of Energy Safety Ken Gardner said: “As stated in the report, 2006/07 has been a busy and challenging year for ESV and its people. We continued to develop what is still a relatively new organisation to leverage off the benefits of combining electricity and gas safety expertise.

“Our responsibilities have also increased. Late in the year, responsibility for the safety of Victoria’s licensed pipelines was transferred to ESV from the Department of Primary Industries. The transfer provides us with new responsibilities and challenges, and we welcome them.

“Our achievements over the year are many and they are covered fully in the Annual Report. Much of the credit for our achievements is due to the professionalism and commitment of ESV’s management and staff. We have worked hard to develop new energy safety initiatives and enhance existing programs.

“I also wish to acknowledge the support we receive each year from our safety partners as we jointly pursue electricity, gas and pipeline safety. We have even strengthened our working partnerships with a number of agencies in recent times and this is very encouraging and satisfying.

“Despite the work of ourselves and our partners, incidents causing a range of injuries – and even death in extreme circumstances – continue to occur. We will always do everything possible to reduce incidents, and I trust that the electricity, gas and pipeline industries will demonstrate a similar commitment in the years ahead," said Ken.
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THE IMPORTANCE OF RESPONSIBLE AND EFFECTIVE SUPERVISION OF APPRENTICE ELECTRICIANS AT ALL TIMES

Director of Energy Safety Ken Gardner recently covered the issue of responsible and effective supervision of apprentices in his monthly column in the NECA Victorian Chapter newsletter. Because of its importance his comments are reproduced here.

ESV is becoming increasingly concerned that some electrical apprentices are not being adequately supervised when working. This may be due to supervisors not being aware of their responsibilities or choosing to ignore them for reasons best known to themselves – and placing the apprentice at some risk.

Employers, contractors and electricians must be aware that under the Electricity Safety Act 1998 any electrical work undertaken by an apprentice is in fact deemed to have been performed by the supervisor who is therefore responsible for ensuring the work is safe and up to the required standard.

Recently an electrical apprentice was involved in an incident which resulted in a warning letter being sent to the supervisor by ESV. Under the Electricity Safety (Installations) Regulations 1999, we could have issued an infringement notice with its accompanying fine or prosecuted the breach of the law in the magistrates court.

On this occasion, however, ESV decided to apply discretion and issue the warning letter. But, as the letter makes quite clear, if there are any further breaches of the Act or Regulations by the supervisor concerned, the individual will not be so lucky next time.

Hopefully this particular episode places the electricity industry on notice that when responsible and effective supervision is required to ensure that apprentices are not placed in any danger and receive proper on the job training, it means that they receive just that – responsible and effective supervision.

I urge everyone who is called upon to supervise apprentices to consult the “Supervision Guidelines for Apprentices Working on Electrical Installations” which can be accessed and downloaded from our website at www.esv.vic.gov.au

The guidelines are reproduced on page 25.

The guidelines provide very useful definitions of the levels of supervision normally required for apprentices during each year of their apprenticeship. For instance, first year apprentices require “direct” supervision at all times when performing the work which they are permitted to carry out. “Direct” means that the supervisor must review the apprentice’s work constantly, be within earshot at all times and where possible be within visual contact.

Other categories of supervision include the terms “general” and “broad”. Under a general supervision the apprentice does not require the constant attendance of the supervising electrician but the work needs to be regularly checked and tested. With broad supervision, the apprentices do not need constant attention but proper checks and tests must be carried out before their work is commissioned and circuits energised.

It must also be noted under the guidelines that some work such as fault finding cannot be undertaken by first and second year apprentices whether they are being supervised or not. And third and fourth year apprentices can only carry out such work when under “direct” supervision of the supervising electrician.

These guidelines have been developed to assist electricians and electrical contractors when supervising apprentices. Apart from ensuring responsible and effective supervision, they also assist supervisors in ensuring they do not breach the Electricity Safety Act.

ESV ESTABLISHES COMMITTEE TO REVIEW AND PREVENT ELECTRICAL INCIDENTS

ESV has established a new industry committee with its major purpose being to review electrical incidents and identify what can be done to make sure they don’t happen again.

Charter of the committee

The full charter of the committee reads:

> To propose amendments to Codes, Guidelines, Standards and Industry Practices.

The committee has already held one of its quarterly meetings. The next meeting is scheduled for February. Special meetings can also be called from time to time.

Who’s on the committee?

The current membership of the committee is:

> Darren Margerison - Chairperson appointed by ESV.
> Loc Vuong from ESV representing three areas: Infrastructure Safety, Installation Safety, and Equipment Safety.
> Terry Dyke, (CitiPower) representing the electricity distribution companies.
> David Just, (SP Ausnet) representing the electricity transmission company.
> Alan Mulvena, (ETU) representing the Unions.
> Steve Lawlor, (NECA) representing the Employer Associations.
> Terry Dyke, (CitiPower) representing the electricity distribution companies.
> Alan Mulvena, (ETU) representing the Unions.
> Stephen Darnley representing Victorian WorkCover Authority.
> One representative of electrical customers who is yet to be appointed.

Proper protocols will apply to the conduct of the meetings. For instance new issues affecting policy cannot be raised at meetings unless all the appropriate paperwork has been provided to members at least five days before the meeting.

The committee’s charter sets the roles of the chairperson, deputy chairperson, committee members and the secretariat.

energysafe looks forward to providing reports from the committee’s work.
NEW BROCHURE: FIRST AID FOR ELECTRIC SHOCK VICTIMS

A new brochure detailing how to provide First Aid for victims of electric shock has been produced jointly by St John Ambulance and ESV.

It replaces the brochure “First Aid for Electric Shock Victims” produced by the former Office of the Chief Electrical Inspector.

The new brochure is entitled “Minutes Matter” and covers First Aid for electric shock, rescue, burns and how to save a life.

Photos in the brochure provide useful advice and guidance on how to treat victims.

Copies of the brochure can be obtained from ESV.

Handy safety hint. Tell your customers:
Always treat a tingle or slight shock as a warning – advise your electricity authority or a registered electrical contractor immediately. Never touch an appliance which caused a shock until it has been disconnected from the power source. Label it clearly to prevent anyone else from using it until it has been repaired and tested or replace it immediately.

DON’T PUT LIVES AT RISK

Use 250 micron copper coated/cladded earth rods

All earth rods have a minimum coating/cladding of 250 microns and comply to all relevant Australian standards

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- ØR1800X168 16mm dia. x 1800mm long (extendible)
- ØR2000X168 16mm dia. x 3000mm long (extendible)
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- ØR3000X19 19mm dia. x 3000mm long (nonextendible)

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MANDATING ELECTRICITY SAFETY MANAGEMENT SCHEMES

It will be mandatory for Victoria’s electricity transmission and distribution network operators to submit electricity safety management schemes (ESMS) every five years to ESV under the Electricity Safety Amendment Bill which is likely to become law soon.

The main provisions of the Bill are to amend the Electricity Safety Act 1998 to:

- mandate submission of and, once approved, compliance with electricity safety management schemes by major electricity companies, namely electricity transmission and distribution owners or operators;
- harmonise the safety management scheme regime in the Electricity Safety Act 1998 with the gas safety case regime in the Gas Safety Act 1997;
- require registered electrical contractors and licensed electrical workers to rectify their defective electrical work that is unsafe (see separate article on this page);
- improve the representation of the railway and tramway industries on the Victorian Electrolysis Committee.

Introducing the Bill into State Parliament, Minister for Energy and Resources Peter Batchelor said it would secure improved safety and reliability of electricity assets.

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

“This proposal will adopt best practice safety management regulation that facilitates better hazard identification and risk-management activities aimed at preventing incidents and at mitigating the consequences if they do occur.

“Most Victorian transmission and distribution companies have seen the benefits associated with voluntarily submitting and complying with an approved ESMS under the existing Electricity Safety Act 1998. The bill will ensure that these benefits are locked in.

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

The Minister said that by aligning, where appropriate, the gas and electricity safety regimes the Bill will reduce the regulatory burden for those entities operating in both the electricity and gas industries.

It also introduces a new section to clarify that Energy Safe Victoria may conduct audits to determine compliance with an ESMS.

NEW LAW TO ENSURE UNSAFE WORK’S RECTIFIED

The Electricity Safety Amendment Bill 2007 which is likely to become law soon will require registered electrical contractors and licensed electrical workers to rectify any work which is considered to be defective and unsafe.

Introducing the Bill into the Victorian Parliament recently, Minister for Energy and Resources Peter Batchelor said: “Electricity is inherently dangerous and unsafe electrical work creates significant risks to life and property, for example, from house fires caused by faulty wiring.”

He said the Bill provides that Energy Safe Victoria may, by written notice, require a registered electrical contractor or licensed electrical worker that carried out unsafe work to rectify it at no additional expense to the customer.Penalties apply for non-compliance with a rectification notice.

“A registered electrical contractor or licensed electrical worker can avoid a notice under the bill, and the risk of a penalty for non-compliance, by rectifying unsafe work promptly, as he or she would be contractually bound to do anyway.

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

When the Bill was read for the second time, the Minister said compliance with a notice from ESV to rectify unsafe and defective work is subject to the right of review by the Victorian Civil and Administrative Tribunal.

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

Handy safety hint. Tell your customers:
Never leave frying unattended, the oil may boil over and start a fire.

CERTIFICATE OF ELECTRICITY SAFETY REVIEW – LATEST

ESV’s extensive review of the Certificate of Electrical Safety and the electrical inspection and audit systems has recommended that the certificate should be retained for all prescribed, non-prescribed and periodic work - but with some refinements.

As reported in the last issue of energysafe, ESV conducted 32 industry forums earlier this year as part of the review process with a number of businesses and organisations involved.

Many refinements to improve the certificate system have been agreed to by all the parties consulted during the review, with only one difficult but important issue of principle to be resolved before the review is concluded and a final recommendation made.

The method of allocating inspections of prescribed electrical work is still to be resolved. During consultations so far and from comments received, any change in this area raises a number of difficult issues impacting on existing businesses. These issues will require further work and analysis to decide whether a detailed proposal can be developed for a further round of consultations.

Refinements include:

- Data capture on the certificates should be relevant only to ESV’s needs and confined to information on full location details, the identity of the electrical worker involved, the work performed and its level of risk.

- The introduction of online purchasing, lodgement and reporting of certificates. A paper Certificate of Electrical Safety will, however, remain available to users who do not use computers.

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

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

- Reviewing the type of electrical work that is deemed to be prescribed inspection work for such components as standby generators, electric fences and remote area supplies.

- An annual review of the cost of the certificate of electrical safety to ensure it reflects the CPI.

- Amending legislation to require registered electrical contractors to retain paper copies of certificates for three years. Electronic copies will be retained by ESV.

- Improving the electrical inspection process to include rationalising the listing of defects to reflect the remedial work required, with the recording of the defects to be limited to the ESV, LEI and REC copies only.

- The introduction of regular auditing of licensed electrical inspectors who will also have to undertake additional on-going training as a condition of licence renewal.

- The introduction of new auditing processes to address work standards and worker performance, and setting minimum time frames between audits of LEIs, RECcs, and LEWs. Also information collected from the audit process should be used to assist education and training.
Handy safety hint. Tell your customers:

It is safe practice to wear rubber or plastic soled shoes when using electrical appliances in laundries, on concrete floors or out of doors. Many victims of serious and fatal electrical accidents are barefooted.

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Since her Majesty the Queen officially opened the Parkville building in 1963, the Royal Children’s Hospital (RCH) has been a special place to many Victorians. With 250 beds, the hospital treats approximately 32,000 in-patients each year and sees a total of 280,000 children through its doors annually.

Maintaining the beating heart of the RCH building is Maintenance Officer Graham Skinner. After 30 years working deep in the basement of the hospital, no-one knows the insides of the hospital better.

A fully qualified electrician, Graham started out on tools at the RCH in 1977. He loved it from his very first day on the job.

"Back then, working in the domestic area, no-one worried too much about the quality of the work," says Graham. "When I first came here, it was a big shock. They said to me, ‘We're not interested in quantity. We're only interested in quality. It has to be spot-on, checked and double-checked. We're dealing with patients’ lives here.’ I was so impressed."

After working in a team of six in the electrical workshop, getting to know every one of the 300 switchboards – every riser shaft, every circuit, Graham now oversees all the maintenance services in the hospital: carpenters, mechanical fitters, plumbers, electricians and even the window cleaners.

The changing landscape

Over his 30 years in the job Graham has seen his workplace completely transformed. The hospital has always been at the forefront of technological developments. "This place has been so dynamic. Every time there was a change I got involved in it, so I just grew with the building."

One of the biggest changes he’s witnessed is, of course, computerisation. Graham talks enthusiastically about his new ability to monitor the plant and equipment by computer from anywhere in the hospital and, most importantly, react quickly.

In the old days, says Graham, it, something went wrong with the heating a surgeon would phone up during an operation to report that it was getting too cold. "We’d run off in a group to the plant room … have a look at this, have a look at that."

Today, Graham just clicks on a computer screen, selects “theatre 1”, sees the temperature is down, selects “plant room” to check the heat exchange and valve, and can see that the drive belt on the air handling unit needs fixing. Simple. (Although the computer still can’t fix the belt.)

The other big change – the one that has completely reshaped the landscape for the hospital electrician – is the incredible advancement in medicine and medical equipment.

Thirty years ago there might have been two pieces of medical equipment next to a hospital bed. “There may have been a double powerpoint if anything,” says Graham.

Now, 20 or 30 pieces of equipment requiring power is not unusual. A constant power supply for all this equipment requires three separate incoming mains, two generators and a UPS (uninterruptible power supply) – a special backup that utilises a huge battery bank constantly converting into AC power.

Ensuring a continuous and steady supply

It’s no exaggeration that an unbreakable power supply for the medical equipment is absolutely critical – the lives of the children in the hospital depend on it – and this is Graham’s constant challenge.

Fortunately there is plenty of technology to help him. He and his team have installed a large number of special medical-sensitive RCDs (residual current devices) throughout the hospital, which detect and respond to a 10 milliamp leakage of current rather than the regular 30 milliamps.

The hospital also has a complex LIM (line isolation monitor) system installed in special areas such as operating theatres, intensive care units (ICUs) and the cardiac units. LIMs still monitor faults, any earth leakage and nuisance tripping, but do not disconnect the power. Instead, the monitor alarms very vigorously – the more earth leakage the more insistent it is. Critical life support equipment is always plugged into the LIM system.

The ICUs, theatres and cardiac units are body protected and cardiac protected; Graham and his team utilise special wiring methods to make extra sure there are no floating currents to interfere with delicate equipment and delicate beating hearts. Special earthed rings are installed in the ceiling to minimise floating stray currents. Even the metal window sill, bench or sink S-bend will have an earth.
Testing is rigorous throughout the hospital and there are regular specialist testing inspections. “We do generator tests every month. We actually fail the mains coming into the building to simulate a true failure. Then we stand back and watch our automatic system do the work.”

**Electrical safety: eye-opening changes**
Graham names the change in electrical safety as the biggest eye-opener in all his years at the RCH. When he first started, personal safety simply wasn’t on anyone’s mind.

“The mentality was ‘This is a hospital, so Never Turn Anything Off.’ Everyone worked live. When the wiring rules changed, initially I thought ‘Wow, that’s fine if you’re in a block of flats or a canning factory, but it will never happen in a hospital,’” says Graham.

But the issue of electrical safety didn’t go away.

“Electrical contractors coming into the hospital to work on various projects refused to work ‘live’ and I thought, ‘If it’s good enough for them, it’s good enough for my people.’ I changed my whole thinking.”

Now one of Graham’s more important jobs is to liaise with hospital staff to be able to shut down different systems and services to provide a safe working environment. They have to be very, very careful; even turning off the power to isolate an area for builders to put in new shelving is a delicate business, because it might affect the oncology ward next door or the operating theatre down the corridor.

“Now, whenever we refurbish an area, we work with architects and consultants so we’re designing things in a smart way to be safe, and still provide a continuous supply to our precious little patients,” says Graham.

**It takes a special sort of electrician**
There are certainly challenges working in a hospital you wouldn’t find anywhere else. Staff are specially handpicked, nurtured and trained.

“They are absolutely diligent and stringent in everything they do,” says Graham of his two dedicated full-time electricians, Alex Hathalmy and Anthony Anderson. “They have to be so careful.”

Their reward is knowing that everything they do – even changing the thousands of fluorescent tubes and globes – is vitally important.

“I really love this building,” says Graham. “Everyone who works here feels the same. You know that children are going to get the benefit.”
SAFETY NOTICE ISSUED AFTER GAS CYLINDER VALVE INCIDENT

ESV has issued a follow-up Safety Notice relating to valves on Huanri Liquefied Petroleum Gas cylinders. The initial Safety Notice was issued on 2 May this year.

The Safety Notices were issued following a serious incident in which a valve bonnet and valve assembly became separated from the valve body on a 9 kg cylinder.

The incident was reported in Issue 8 of energy safe. A man received serious burns after the separation resulted in an uncontrolled gas escape at cylinder pressure.

Background
The new Safety Notice reads: An incident has occurred involving the separation of the cylinder valve bonnet and valve assembly from a valve body on an LP Gas cylinder. The separation resulted in an uncontrolled gas escape which ignited.

The valve involved was a Shandong Huanri model YSF-RA-1.

The section of the valve that came apart comprised the valve stem assembly and retaining nut (see picture), which secures the valve stem assembly to the valve body. The retaining nut has a left hand thread and because the valve stem assembly has a right hand thread, opening the valve has a tightening effect on the retaining nut. Vice versa, closing the valve has a loosening effect on the retaining nut.

A similar incident recently occurred in Queensland.

ESV’s recommendation
It is recommended that gas cylinder fillers check the tightness of the retaining nut before filling or refilling the cylinder. It should be noted that the retaining nut is not subject to gas pressure and therefore a leak test is inappropriate.

Any cylinder found with the same valve fault should be removed from service and ESV notified.

In such instances please notify either

Norm Jackson
Manager Technical Liaison
(03) 9875 5430
0419 150 847
njackson@esv.vic.gov.au

Andrew Jones
Manager Gas Infrastructure
(03) 9203 9729
0417 557 843
ajones@esv.vic.gov.au

WHAT ESV FINDS AT SOME EVENTS AND SHOWS

The 2007/08 event season has started. ESV gas inspectors are carrying out audits of approximately 60 events. Some of the equipment found while carrying out safety audits is shown below.

All have the potential to cause fire, explosion or injury to operators or the public.

Event organisers are encouraged to ensure a high level of gas safety. While ESV has seen a big improvement at the larger events, conditions at some of the smaller events still cause concern.

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Event organisers are encouraged to ensure a high level of gas safety. While ESV has seen a big improvement at the larger events, conditions at some of the smaller events still cause concern.

Handy safety hint. Tell your customers:
All gas cooking appliances should be checked at least every two years by a licensed gasfitter to ensure that they are safe and efficient.
NEW STANDARD TO COVER PERFORMANCE OF FRIDGES


This Standard was prepared by committee EL-015, Quality and Performance of Household Electrical Appliances – of which ESV is a member – to supersede AS/NZS 4474.1:1997. It includes all test conditions, requirements for temperature performance and the method for determination of energy consumption.

With the advent of microprocessors and electronic controls, refrigerating appliances have emerged with various unusual operating patterns. The emergence of these patterns has necessitated the tightening of test specifications to detect and deal with those patterns that would consequently provide poor food care.

It has also been necessary to deal with patterns that give abnormally low energy consumption in an energy test by modifying or eliminating functions that are otherwise operational in normal use, such as anti-sweat heaters.

The Standard specifies the method for determining the performance characteristics of electric refrigerating appliances suitable for connection to mains power, whatever the cooling technology. Appliances such as multi-fuel refrigerating appliances which do not have a mains power option, are not included in the scope of this Standard and it does not apply to separate stand-alone ice-makers.

Refrigerating appliances that are not specifically designed for wine storage but that may be used for this purpose are covered by this Standard. Refrigerating appliances that have a wine storage compartment combined with any other compartment type defined in this Standard are included within the scope. Separate wine storage cabinets are not within the scope of this Standard but may be tested using its methods.

For further information on this Standard and to make energy labelling and Minimum Energy Performance Standards (MEPS) applications for refrigerating appliances, contact energyefficiency@esv.vic.gov.au.

Handy safety hint. Tell your customers: Teach children that electrical appliances, cords, switches and outlets are not play things. Safety shuttered outlets as well as plastic covers for ordinary type outlets are available.
SAW OPERATOR RECEIVES ELECTRIC SHOCK WHEN CUTTING “LIVE” CABLE

The operator of a sabre saw reported receiving an electric shock in both his hands in an incident in September when he inadvertently cut through a “live” cable during work to remove power supplies from a high pressure polyethylene plant at Altona which was being demolished.

He was taken to the medical centre at the site and after being seen by the doctor and nurse he returned to work with no treatment required. Fortunately he was correctly wearing the required safety equipment at the time.

The victims of the incident provided a report to ESV on what happened, its cause and what should be done to prevent similar occurrences.

A “live” 415V feeder cable was incorrectly identified and cut causing the feeder to trip on ‘Earth Fault’ during the incident.

The investigation determined that the wrong cable was cut, due to the crews involved being unable to establish clear communication.

The means of identifying which cable was the correct one to be removed was hindered by the amount of packing sand that was still around the cables, said the investigation report.

The operator was wearing the appropriate safety gear and several hundred cables had been cut over the previous weeks during the removal process.

The investigation came up with a number of recommendations to ensure there were no such further incidents on the site.

ELECTRICAL SAFETY ALERT: DOWNLIGHTS RESPONSIBLE FOR ROOF FIRE HAZARDS

The Melbourne Metropolitan Fire Brigade has reported that the recent downlight trend has created a potentially lethal fire hazard in hundreds of thousands of Australian homes. Millions of downlights are installed each year but many are time bombs because they have no fire resistant barriers or enclosures.

Brendan Gow a licensed electrical contractor in conjunction with a specialist commercial and domestic fire retardant company have developed a simple, yet highly effective product to protect downlights from thermal insulation and other flammable materials in roof spaces.

Insulguard is made from fire resistant cardboard.

Insulguard complies with wiring rules (AS/NZS 3000 – 2000) and has been tested to Australian Standards 1530-part 2 (Flammability test)

Insulguard is cost effective, packs flat for easy storage and takes only a few minutes to install.

Insulguard can also be installed at “rough in” stage of new buildings. This is a definite plus for floor joist ceilings of multi level building installations.

In preparation for the new wiring rules (AS/NZS 3000) Insulguard Australia has designed a new enclosure which will make installation even simpler.

The new design due out late 2007 will have the following additions:

> A pre-cut 70-90mm downlight hole
> Top and bottom lids that slot in for easy installation
> Push out ventilation and cable entry knock outs

The Insulguard’s Downlight Australian Distributor is OMEGA POWER EQUIPMENT P/L www.omegapower.com.au and the product is available from all reputable Electrical Wholesalers.
Each year, ESV presents a “Gas Achievement Award” to the top gasfitting apprentice at institutes of TAFE throughout Victoria. The award comprises a cheque for $250 and a perpetual shield, which is displayed at the institute.

This year, each award winner has been invited to spend two days with ESV’s gas inspectors, including visits to high rise building installations, commissioning of industrial appliances and an insight into incident investigations.

Richard Grimmond was this year’s award winner at the Albury campus of Riverina Institute of TAFE and he took up ESV’s invitation, which included a trip to the top of the Eureka Tower with gas inspector Steve Bailey.

Richard works for B&C Plumbing in Wodonga, a company that specialises in maintenance and installations at Mars Pet Care.

Richard’s interests include his family and football; and it’s his ambition to be a competent and successful plumber.

Congratulations to electrical apprentice Sharref Chawk judged the winner of the 1st Year Electrotechnology category, and recipient of the award provided by ESV, in the 2007 VICTEC excellence awards.

Sharref has been hosted to Nilsen’s for the duration of his apprenticeship and has worked within various divisions ranging from the service department to construction.

The introductory note about Sharref which was read out by MC Darren James at the awards night on 13 September stated:

“Sharref at all times is seen to be a proactive member of the Nilsen team, always quick to ask questions, self motivated, enthusiastic and willing to learn new tasks.

“Although Sharref has just turned 2nd year, his exposure to different aspects of the trade exceeds that of many other apprentices that are further along in their time. This is indicative of Sharref’s positive attitude and willingness to learn.

“Sharref is a keen soccer enthusiast having played for over 14 years. He currently plays as a defender for the Westgate White Eagles.”

The award was presented to Sharref by Allan Driver, who retired as ESV’s Executive Advisor Industry Skills and Professional Development Strategy and Policy a few days before the awards presentation.

Available through all reputable Electrical Wholesalers

omegapower.com.au sales@omegapower.com.au

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**GAS ACHIEVEMENT AWARD FOR RICHARD**

**DOWNLIGHT PROTECTION PROTECTS HOUSES**

Insulguard. The simple and effective way to protect downlights.

- Protects downlights & transformers from thermal insulation
- Isolates downlights and transformers from contact with thermal insulation and other materials
- Complies with Wiring Rules (AS/NZS3000:2000) clause 4.3.6.3 (lamp and luminaries near thermal insulating materials)
- Meets and tested to Australian Standards AS1530-Part 2 (burn test)
- Insulguard is easy to assemble & packs flat for easy storage

Catalogue No. DLG
PROSECUTIONS

ELECTRICITY RELATED PROSECUTIONS

ESV has recently taken legal proceedings under the Electricity Safety Act 1998 against the following. Under the Privacy Act, energy safe is precluded from publishing the names of individuals charged with offences.

- An REC was charged with failing to have prescribed work inspected and failing to complete a Certificate of Electrical Safety within four business days. The defendant was fined $1000 without conviction and ordered to pay costs of $1404.
- An REC was charged with failing to have prescribed work inspected and two counts of carrying out work which did not comply with Electricity Safety Act and regulations, and failing to test the work. The defendant was fined $1000 without conviction and ordered to pay costs of $1000.
- An LEI was charged with providing a notice to ESV in which some of the material was false, and with failing to sign an LEI card. The defendant was fined $2100 without conviction and ordered to pay costs of $1500.
- An unlicensed person was charged with two count of installing gas appliances while unlicensed, and two counts of failing to comply with the Gas Safety Act and regulations. The defendant was fined $1842.
- A plumber, Crichton Plumbing Pty Ltd was charged with failing to carry out gas fitting work in accordance with the prescribed standard. The defendant was fined $1000 without conviction and ordered to pay costs of $1200.
- A factory manager was charged with carrying out electrical installation work unlicensed and failing to take precautions to prevent electric shock. The defendant was fined $1500 without conviction and ordered to pay costs of $1400.

REDUCE FIRE RISK

WITH NEW

FlameGuard

SAFETY DOWNLIGHTS

Aust & N.Z Approved

FLAMEGUARD SEAL
Expands in the event of fire and restricts its spread.

LAMP CHOICES
+ 12V
+ 240V
+Mini Compact Fluorescent

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With Acoustic Barrier & 90 Minute Fire Rating
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Fax: 9437 0990
Email: sales@massonforlight.com.au
Download catalogue from our website:
WWW.MASSONFORLIGHT.COM.AU

INFRINGEMENT NOTICE SUMMARY

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INFRINGEMENT NOTICES 2007

TYPES OF INFRINGEMENT NOTICES ISSUED

- Fail to display number
- Fail to display number
- Fail to display number
- Non complying installation work
- Supply equipment not approved
- Gas fitting work did not comply
- Non complying installation work
- Non complying installation work
- Fail to have work inspected by inspector
- Fail to have work inspected by inspector
- Fail to give certificate within time
- Fail to give certificate within time
- Fail to complete certificate within time
- Fail to complete certificate within time
- Fail to complete certificate within time
- Fail to complete certificate within time
- Fail to complete certificate within time
- Fail to complete certificate within time
- Fail to complete certificate within time
- Fail to have work inspected by inspector
- Fail to have work inspected by inspector
- Fail to have work inspected by inspector
- Unlicensed electrical installation work
- Unlicensed electrical installation work
- Unlicensed electrical installation work
- Damages a network asset
- Unlicensed electrical installation work
- Supply equipment not approved
- Closer than distance allowed in Table 40

GAS RELATED PROSECUTIONS

ESV has recently taken legal proceedings under the Gas Safety Act 1997 against the following. There was also a charge brought under the Building Act 1993. Under the Privacy Act, energysafe is precluded from publishing the names of individuals charged with offences.

- A plumber, Crichton Plumbing Pty Ltd was charged with failing to carry out gas fitting work in accordance with the prescribed standard. The company was fined $1000 without conviction and ordered to pay costs of $1842.
- An unlicensed person was charged with two count of installing gas appliances while unlicensed, and two counts of failing to comply with prescribed standards for a gas installation. The defendant was fined a total of $3500 without conviction and ordered to pay costs of $1585.
A company which operates three retail stores under the name Importers Salvage Centre has been fined and convicted for breaching the Electricity Safety Act 1998 by selling unapproved and unsafe electrical products.

Midas Trading (Australia) Pty Ltd pleaded guilty to a total of 14 charges at the Sunshine Magistrates Court on 11 September. The company was convicted, fined $4,000 and required to pay costs of $1,553.

Seven of the charges related to Takai brand power boards not meeting the prescribed standard AS/NZS 3105. Examples of non compliance with the Standard included single pole switches instead of double pole, mains leads inadequately retained and incorrect or missing rating labels.

The other seven charges related to appliances which had not been approved pursuant to section 57(2) of the Electricity Safety Act 1998. They included:

- Luminaires – “lava lamps”
- Power supply device for video colour correctors
- Battery charger for a rechargeable torch
- Decorative Lighting Outfits also known as a rope light

None of the items offered for sale had been approved by ESV or any other electrical safety regulator. The prosecution summary brought against Midas Trading (Australia) Pty Ltd said an ESV Equipment Safety Compliance Officer was investigating one of the company’s stores investigating a query on an appliance when he noticed other electrical equipment and conducted a random audit for compliance with approval markings.

The officer noted that a number of models of “Takai” brand outlet devices, also known as power boards, had a regulatory Compliance Mark of N15044 on the outside packets but not on the appliances. Subsequent investigations revealed that the approval number had been issued by the Office of Fair trading, NSW for the flexible supply cord only.

A Queensland company has been fined $20,000 and ordered to pay a further $1432.75 in costs on charges relating to the selling of unsafe and unapproved electrical equipment via eBay.

Songlike Australia Pty Ltd appeared in the Beeline Industrial Magistrates Court on 11 October charged under the Queensland Electrical Safety Act 2002 with failing to discharge their electrical safety obligation as an importer and selling prescribed electrical equipment without approval.

The equipment, a popcorn machine, was not electrically safe in that:

- There was a male appliance connector in which the pins were accessible to the standard test finger and would be live when the popcorn maker was plugged into a socket outlet.
- The base of the cabinet had a removable tray onto which popped corn would collect during normal operation. Under this tray a metal sheathed heating element was mounted and it was wired to a thermostat mounted on a flexible support. The normally live terminals of the thermostat were accessible to the standard test finger. The wiring was routed across a sharp metal edge through the corner extrusion, along with the incoming supply wiring, up to the compartment in the top of the unit.

How was it detected?

An off duty electrical inspector was attending a school function at Rockhampton when he noticed a commercial popcorn maker. A quick glance told him the plug was not approved and did not meet the Australian Standards.

He saw that it did allow access to live parts and as such was very dangerous. As a result he seized the popcorn machine and transported it to the Electrical Safety Office in Rockhampton.

It was ascertained the machine had been purchased over eBay. An Inspection of the eBay site “songlike299” indicated that up to 10 items of electrical equipment including prescribed electrical equipment was for sale. “Songlike299” is a representative of Songlike Australia Pty Ltd. “Songlike299” has been registered with eBay since 2003 and has sold approximately 5913 items through this channel, although it cannot be ascertained how many of them were electrical products.

Handy safety hint. Tell your customers: Frayed or damaged cords are dangerous and should be replaced immediately. Many old plugs do not have safety barriers between the connections – replace them with modern plugs.
COMPANY FINED $300,000 AFTER ONE OF ITS EMPLOYEES IS ELECTROCUTED

Inadequate training, a lack of protective equipment and poor work procedures led to a conviction and a $300,000 fine for the employer of a man who died while changing a light bulb.

“Other employers must learn from this company’s mistakes,” WorkSafe’s Executive Director, John Merritt, said in a media release issued after the company was sentenced in early September.

“As this company demonstrated safety improvements can be achieved quickly, but you don’t have to wait until someone dies. It’s little consolation for families when it’s done after the event.”

Camden Neon Pty Ltd manufactures and carries out maintenance on display signage. It pleaded guilty to one charge laid under the Occupational Health and Safety Act 2004.

Sion Rees, 26, of Sunbury died in hospital four days after receiving an electric shock as he removed broken glass from a ‘live’ light fitting at a Coburg North car yard in April last year.

The court was told he had not been provided with protective gloves and was using an uninsulated screwdriver.

Passing sentence, Judge Sue Pullen said the company’s working practices were grossly inadequate or non-existent.

“Simple procedures could have prevented the death of this young man.... it was only good luck that there had not been a fatality before.”

As in this case, Camden Neon employees routinely left the power on when they carried out sign maintenance. The firm also did not have a tag and lock out procedure for use when working with electricity.

There was no written job safety analysis or work permit system before electrical work was done and employees had inadequate information, instruction and training in relation to the safe operation of the elevating work platform (EWP).

Mr Rees’ workmate who was in the EWP with him generally worked in the company’s factory and was new to this particular job. He did not know how to operate the EWP when Mr Rees received the electric shock.

Mr Merritt said Parliament significantly increased fines under the Occupational Health and Safety Act 2004, reflecting the community’s view that workplace safety was a serious issue.

This was the second workplace fatality case heard at the County Court under the ‘new’ Act which increased the maximum fine from $250,000 to more than $990,000.

“Court-imposed penalties are rising. This will happen progressively, but they can be avoided.

“While WorkSafe supports and works with those who create and maintain safe workplaces, the community expects those responsible for health and safety breaches to be held to account.”

By early September, 20 work-related deaths had been reported to WorkSafe so far this year.

WorkSafe said the cost of treatment and rehabilitation for around 30,000 Victorian workplace injuries each year exceeds $1 billion.

MORE COMMONLY ASKED ELECTRICITY QUESTIONS – ALONG WITH THE ANSWERS:

a) Does a 240v electrical isolating switch, mounted on the wall adjacent to and supplying a direct wired (not GPO connected) inbuilt natural gas space heater installed into a residential lounge room fireplace, need to be a double pole switch, or a single pole switch?

Answer: AS/NZS 5601, clause 5.2.11 requires a double pole isolating switch to be installed adjacent to the unit.

(This is the reason why AS/NZS 3000:2007 has included information on the information from other standards such as AS/NZS 5601.)

b) As a Registered Electrical Contractor how long am I required to keep the copies of the certificate of electrical safety?

Answer: The Electricity Safety (Installation) Regulations 1999 do not prescribe a time period. However, ESV recommends a minimum period of four years for hard copies of the certificates of electrical safety to be retained.

c) Do I need my electrical licence endorsed or an additional licence to work in hazardous locations?

Answer: The A Class electrician’s licence allows the electrical worker to perform all electrical work within the electrical installation. The question that does need to be addressed is the competency of the electrical worker to perform tasks in hazardous locations. Many industries require workers to undertake additional training that allows them to understand the risks and the standards that are applicable when working in hazardous areas. ESV encourages A Class electrical workers to continue to develop their skills to ensure they undertake such work safely and competently.

d) Can I install a towel heater in the bathroom next to the bath (in zone 2)?

Answer: AS/NZS 3000:2000, Clause 7.1.4.1 Degree of protection required states (in part): Electrical equipment permitted to be installed in a classified zone shall have at least the following degree of protection:

(a) In Zone 0: IPX7.

(b) In Zones 1 and 2: IPX5 in communal baths/showers; IPX4 in other locations.

If the towel rail is connected directly to the installation in a domestic bathroom, then the IPX4 degree of protect is required at a minimum.

e) I am aware of the problem of heat generated by low-voltage lights presenting a risk of igniting insulation or other flammable materials. I intend to take all necessary precautions to ensure the safety of the lights by clearing the area around each light of flammable materials, or installing barriers for the lights, which I understand overcome the problem of overheating. What are the requirements for when I use these covers/barriers?

Can I decrease the distance between the combustible material and the insulation?

Answer: The Distance advertised in the ESV Safety Alert on downlights can only be reduced if the installation instructions provided by the manufacturer clearly specify distances which are less than those stated. This applies to all barriers that are sold.

f) I understand that as a Registered Electrical Contractor (REC) that I am required to display my REC number. Where and on what must this number be displayed?

Answer: The Electricity Safety Act 1998, Section 32 states:

“32. Registered number

A registered electrical contractor must not publish or cause to be published any advertisement, notice or statement that the contractor carries on or is willing to carry on electrical contracting work unless the advertisement, notice or statement includes the registered number of the contractor.”

This requirement would therefore require the REC number to be displayed on:

> Business cards;

> Invoices and statements;

> Advertising;

> Company vehicles that carry advertising; and

> Company logos displayed to the general public.

This number is confirmation for customers and others that the REC is registered with ESV.

Handy safety hint. Tell your customers:

Electric Blankets like all other electrical appliances must be used in strict accordance with the manufacturer’s instructions. Tie the tapes so that the blanket can’t crease. Have your electric blanket inspected at least once every five years.
SUPERVISION GUIDELINES FOR APPRENTICES WORKING ON ELECTRICAL INSTALLATIONS

Cable Tray Installation
Ladder, Tray & Duct, Ladder, Tray Suspension Brackets, Fixings.

Conduit Installation
Conduit, Conduit Fittings (j/boxes, Bends, etc).

Roof-in Light & Power
Catenary Wire, Fixings, Building Wire, TPS Cables & Ties, Plug Bases, Stud Brackets, TPS Cable Dressing (Not accessible to contact with electricity supply)

Submain Installation
Cable Pulling, Fixings. (Not accessible to contact with electricity supply)

Distribution Board Installation
Install Switchboard, Lugs, GLANdS, All Terminations (Including SUB Circuits), Fixings, Service Pillars, Take off Boxes. (Not accessible to contact with electricity supply)

Main Switchboard Installation
Install Switchboard, Lugs, GLANdS, All Terminations (Including SUB Circuits), Fixings. (Not accessible to contact with electricity supply)

Lightfitting and Bakelite Installation
Light Fixings, Supports, Trunks, Fixings, Tubes & Lamps, Socket Outlets, Switch Plugs, Mounting Blocks, Plaster Brackets. (Not accessible to contact with electricity supply)

Testing
Testing of Installation for Compliance, Labelling, Preparation of D/B Legends. (Not accessible to contact with electricity supply)

Fault Finding
(Not accessible to contact with electricity supply)

During the fault finding process, the supervising electrician must demonstrate to the apprentice the correct procedures for fault finding

Note 1 – the 3rd year apprentice can carry out basic fault finding activities. In the immediate presence of the supervising electrician the 4th year apprentice can carry out more advanced fault finding tasks on power and control circuits and equipment.

Confirmation of Isolation
Evaluation of the ability of the apprentice to carry out the work competently?

Application of these guidelines
The above guidelines have been developed to assist electricians and electrical contractors in providing supervision to apprentice electricians during their on the job training. The guidelines reflect the intent of “effective supervision” as defined in the Electricity Safety (Installations) Regulations 1999 and assist with the compliance of the Electrical Safety Act.

Direct Supervision
This means the electrician is to work with the apprentice, constantly reviewing the work practices and standard of the apprentice’s work. The electrician shall be readily available in the immediate area, within audible range (earshot) and where possible within visual contact of the apprentice.

As part of General Supervision, the supervising electrician shall provide the apprentice with instruction and direction for the tasks being performed with progressive checks and tests being made during the work being undertaken.

Broad Supervision
This means the apprentice does not require constant attendance of the on site supervising electrician but requires face to face contact on site during the day with the supervising electrician to check on the work being performed and to provide the apprentice with additional instructions and assistance.

General Supervision
This means the apprentice does not require constant face to face contact on site during the day with the supervising electrician to check on the work being performed and to provide the apprentice with additional instructions and assistance.

GUIDE TO SITE SUPERVISION OF APPRENTICES
BY THE SUPERVISING ELECTRICIAN

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<tr>
<td>Has the apprentice carried out similar work?</td>
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<tr>
<td>Has the apprentice carried out this work that you require?</td>
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</table>

The electrician is giving direct supervision to the apprentice.

The electrician is giving general supervision to the apprentice.

The electrician who is providing the supervision must:
- Check the quality of the apprentices work
- Carry out regulatory tests
- Sign off on the apprentices competency (where applicable)

WHAT THE ELECTRICITY SAFETY ACT 1998 SAYS

41B Supervisor deemed to carry out certain work

(1) If, under this Act or the regulations, a licensed electrical installation worker supervises the carrying out of electrical installation work by another person, then, for the purposes of this Division-

(a) the licensed electrical installation worker is deemed to be the person carrying out this work; and

(b) the other person is deemed not to have carried out the work.

(2) Sub-section (1) does not apply in respect of a licensed electrical installation worker supervising the carrying out of electrical installation work pursuant to the conditions of registration applying to a registered electrical contractor.

If the work is not carried out in a safe manner this is a breach of the Act as per Section 43(4) –

A person carrying out electrical installation work must ensure that-

(a) all electrical circuits or electrical equipment handled in the course of that work are disconnected from the electricity supply; or

(b) adequate precautions are taken to prevent electric shock or other injury in the handling of electrical circuits or electrical equipment in the course of that work. Penalty: 40 penalty points. (Note 1 penalty point is $107)
MINISTER RE-ITERATES WARNINGS ON DOWNLIGHT SAFETY

Warnings of the dangers of halogen downlights being placed too close to structural timber and insulation material were re-iterated by the Minister for Energy and Resources, Peter Batchelor, when replying to a parliamentary question recently.

The question had referred to fire statistics indicating that some 57 homes in Melbourne had been lost in the 18 months up until July – with the likely cause being downlights which had not been installed properly.

The Minister said: “This is clearly a very important issue, and it is one Energy Safe Victoria will be tackling in its new safety advertising campaign, which is due to begin on 14 October. It is important to understand that downlights in themselves are not unsafe. It is only when improperly installed that they are transformed into safety risks.”

“For example, if they are placed too close to structural timber or become covered by insulation or ceiling debris they can pose a substantial fire risk and consequently a risk to the lives of people living in or visiting those homes.”

He said that although the new Wiring Rules are not due for implementation until next year, he urged registered electrical contractors and licensed electrical workers to take up the new standards relating to downlight installation straight away.

“It is important that they are known, and there is no reason why they should not be implemented,” he said.

“The new rules set a minimum distance of 200 millimetres between halogen lamps and flammable materials. Halogen lamps can operate at up to 500 degrees Celsius, so it is not hard to see how they can ignite roof insulation or even timber roof trusses if they get too close to the lamp – a source of heat – or to the transformer that forms part of the lighting unit.”

“This is especially worrying where there is loose-fill, paper-based insulation. This type of insulation is particularly prone to being blown around by the wind or disturbed in the roof cavity by birds or animals. But there are products available on the market now to combat the dangers posed by the uncontrollable movement of insulation.” said the Minister.

He said that if people are unsure as to whether their downlights are installed safely, they can contact their local registered electrical contractor or contact Energy Safe Victoria to arrange a value-for-money inspection of the home safety of these installations.

“The other message that needs to go to the electrical industry is that there is no need for electricians and contractors to wait until these new regulations become enforced in law; they should start using these revised wiring rules right now.”

DOWNLIGHTS – WHAT ARE THE SAFE DISTANCES BETWEEN THE INSTALLATION AND INSULATION?

ESV has received a number of questions since the issuing of the media release on the dangers associated with the use of ELV halogen downlights. It has always been ESV’s intention to remind the electrical industry that these light fittings need to be installed in the correct manner and the information from the new Wiring Rules, AS/NZS 3000:2007, was provided to help electricians.

There are a number of barriers and surrounds available on the market to protect downlights from encroaching roof insulation and roof supports. There are others about to hit the shelves with manufacturers awaiting laboratory testing of their products.

ESV wishes to make it clear that the distances between the downlights and roof timbers or insulation prescribed in the new edition of the Rules are the minimum distances which must be maintained.

The only acceptable alternative to this rule will be where the manufacturers’ instructions provided with the barrier or guard stipulate that a lesser distance is required between the light and guard and the combustible material.

As can be seen in the clause detailed below, if there is no such information contained with the product then the distances cannot be decreased and must comply with the Standard.

In AS/NZS 3000:2007, Clause 4.5.2.3 states:

“4.5.2.3 Recessed luminaires
Recessed luminaires and their auxiliary equipment shall be installed in a manner designed to minimize temperature rise and prevent the risk of fire.

The temperature rise at the rear of a recessed luminaire shall be limited to prevent damage to adjacent materials.

This requirement shall be satisfied by one of the following methods:

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

(i) contact with combustible materials; or
(ii) enclosure or covering by thermal insulation material, as appropriate to the location of the luminaire.

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

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

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

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

NOTE: In the case of a suitably designed luminaire, the installation instructions may specify that no clearance is required. Recessed luminaires and their auxiliary equipment shall be installed in such a manner that necessary cooling air movement through or around the luminaire is not impaired by thermal insulation or other material.

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

Insulation too close to a downlight.
GAS APPLIANCE ISOLATION VALVES
Where an appliance isolation valve is required by AS 5601, it must be readily accessible for operation.
It is not acceptable to install an appliance isolation valve in an adjoining room or outside.
Readily accessible also means from the ground, even in the case of industrial appliances.
It is not acceptable to have to climb on the appliance, such as a spray booth, to access the valve.
Remember there must be a means of disconnection on the outlet side of the valve, and at the appliance.

APPLIANCE GAS PRESSURE REGULATORS - ACCESSIBILITY
Appliance regulators must be installed in locations that are readily accessible for servicing or adjustment.
Regulators for cooktops should be located in an adjoining cupboard in situations where drawers or an oven is fitted below the cooktop.
Regulators in commercial premises should be accessible without having to disturb the appliance.

ELECTRICAL ISOLATION OF GAS APPLIANCES
Installers must ensure that there are acceptable means to isolate the electrical power from gas appliances, as required by AS 5601, Gas Installations.
The preferred means is by using a plug to an adjacent GPO (power point socket).
Most Type A appliances are supplied with an attached power cord.
It is important to ensure that the electrical supply can be isolated prior to carrying out any servicing work. Never allow a gas appliance to be direct wired without a visible means of isolation.

The preferred method is to have a key operated safety shut-off system with an emergency stop button located near the exit. This will allow everyday control by an authorised person as well as a means of emergency isolation.
Remember too that if the laboratory is fitted with fire sprinklers, a system to isolate the gas supply is required. That function could also be incorporated into the safety shut-off system.

USING BARBECUES INSIDE OR IN CONFINED SPACES
Most domestic-type barbecues are certified for outdoor use only and must not be used or installed internally ie, in marquees, catering vehicles, take-away shops, dwellings etc.
Although these barbecues are often found at events, it is not a good idea to be using them for commercial use. They are not designed for the rigors of commercial cooking and in some cases the warranty could be voided.
Barbecues for events or indoors must be certified for indoor use by AGA or SAI Global.
Emissions from outdoor products are not as strictly controlled as for indoor types, and clearance requirements differ.

BIrTS AND PIECES OF INTEREST TO GASSIES
Direct-fired gas heaters
ESV Gas Inspectors regularly come across direct-fired portable heaters (rocket type heaters) being used in locations for which they are not intended.
Some of the locations include child minding centres, office foyers, hired marquees, small commercial premises and shopping centres.
Owners and occupiers of these locations have been advised not to use these heaters, and replace them with a more appropriate heating form.
Direct-fired heaters are designed for large volume industrial buildings in which the emissions will be diluted and dispersed rapidly. The use of unflued heaters in public places can be detrimental to persons with respiratory problems.
Gas pipe-sizing
ESV’s Gas Technical Help Line regularly receives requests from installers to assist with pipe-sizing. One method of pipe sizing is provided in AS 5601. Other methods are readily available in the industry and from pipe suppliers.
Multi-layer (composite) pipe tables are not provided in AS 5601 due to the varying dimensions but are available from individual suppliers.
For long runs or higher pressures outside the scope of AS 5601, the installer may need to contact a consultant or obtain other engineering assistance. ESV will not calculate nor confirm pipe size.

Electrical ISolation of Gas Appliances
Installers must ensure that there are acceptable means to isolate the electrical power from gas appliances, as required by AS 5601, Gas Installations.
The preferred means is by using a plug to an adjacent GPO (power point socket). Most Type A appliances are supplied with an attached power cord.
It is important to ensure that the electrical supply can be isolated prior to carrying out any servicing work. Never allow a gas appliance to be direct wired without a visible means of isolation.

ESV’s Gas Technical Help Line regularly receives requests from installers to assist with pipe-sizing. One method of pipe sizing is provided in AS 5601. Other methods are readily available in the industry and from pipe suppliers.

Changes-over Gas Ducted Heaters
When changing over gas appliances, remember that the new one is to be installed to current requirements and the manufacturer’s instructions.

There have been occasions where an old internal ducted heater had been installed without a return air duct. When installing the new heater, a return air duct must be connected. The return air supply must not be drawn from the same enclosure as the heater.
The use of ducted heaters without a return air duct is dangerous. Products of combustion can be drawn into the heated air system, polluting the quality of air being circulated throughout the premises and eventually causing carbon monoxide to be produced.

Gas in Schools
ESV advises that a secure means of isolation should be provided for gas installations in all school science labs and home economics rooms where multiple gas appliances are involved.
Not only are there incidents caused by vandalism, but there are occasions when accidental operation of a turret valve or fume cupboard goes unnoticed.

Questions and Answers for Gassies
Q – Why do flexible hose assemblies have to hang in a U loop on commercial catering equipment?
A – To minimise strain or stress on the assembly, especially at the connections, that could eventually cause a gas escape or kinking of the hose.
Q – Can I install a gas shut-off system controller in a gas meter room?
A – The majority of gas safety shut-off systems do not meet the standard for hazardous areas and cannot be installed in gas meter rooms. If a control meets the requirements for hazardous areas then approval from the gas supplier should be sought along with advice on the most appropriate location in the meter room.
Q – Where can I find out what types of fire resistant board can be used?
A – The ESV website contains all current Technical Information Sheets. Refer to Information Sheet 3 for types of fire resistant boards deemed by the supplier to meet the requirements of AS 5601, Appendix C.
Supplier contact details are included.

Notes that neither cement sheet, plasterboard nor the majority of composite materials containing resins or similar materials meet the requirements of Appendix C.

Electro-fusion Information from Reecce
Plumbing supplier Reece Pty Ltd is providing information sessions on the electro-fusion jointing of polyethylene piping.
The information sessions will be run at various Reece outlets throughout Victoria, commencing in February 2008. Although Reece customers will be invited, the sessions will be available to all registered plumbers and gasfitters.
Reece has recognised the growing usage of PE in the industry and that it is essential for the industry to be aware of developments in materials and jointing techniques. PE piping is used in gas, water, sewerage, irrigation, recycled water, telecommunication and as a conduit for electrical cables.
Items to be covered include selecting the right material, general installation requirements, jointing methods, pipe protection and available tools.
ESV has been involved in the preparation of the information and fully supports the Reece initiative in professional development.
Further enquiries regarding the program, dates and venues should be made to the Reece Training Department on (03) 9274 0243 or your local Reece branch.
NEW WIRING RULES – OUT NOW!
AS/NZS 3000:2007, Electrical installations

> Wiring Rules 2007 – bigger, better, clearer
> New National requirements
> Upgraded layout
> Over 450 pages
> Now includes explanatory diagrams and technical details

ORDER NOW
Call 131 242 or visit www.saiglobal.com/wiringrules
Compliance with the new AS/NZS 3000:2007 will be mandatory
ESV recently farewelled two long-serving industry identities who have made significant contributions to Victoria’s electricity industry through careers which have embraced many facets of the industry.

Allan Driver, Executive Advisor Industry Skills and Professional Development Strategy and Policy, joined the SEC as a cadet engineer in January 1967. He proposes to stay in the industry as a consultant

Ian Longmuir, Manager Network Safety, joined the SEC in January 1968. Ian has departed on long service leave and will officially retire next year.

Volumes could be written about the careers of both men.

Allan Driver

Allan’s career embraced design, construction, switchgear operations, safety and senior management. For a number of years he managed SEC district business centre operations – Cheltenham at first, followed by Oakleigh and then Maroondah.

Following disaggregation of the SEC, Allan worked for Eastern Energy which became TXU. In 1996 he joined the Office of the Chief Electrical Inspector as General Manager Use Safety.

With the formation of ESV he became Executive Manager Licensing and Professional Development – concentrating on the professional development aspect during his final months with the organisation.

Allan has a number of professional and business affiliations to his name including graduate membership of the Institute of Engineers. Away from work, he likes keeping fit, enjoys rowing and sailing, and is an enthusiastic Rotarian.

Ian Longmuir

Ian Longmuir continued the tradition of his father, Ray, who worked for the SEC for some 40 years from the mid 1930s. Ray’s first job involved cycling around the suburbs with a ladder changing light globes in the high ceilings which existed in many homes in those days. Ray retired as the Operations Engineer in the SEC’s Metro Division.

Ian himself pursued his career in the Latrobe Valley, Horsham, Benalla and Dandenong. At one stage his work involved preparing lighting designs for homes with property owners encouraged to take plans to the SEC for the designs to be prepared.

A particular highlight of Ian’s career was his involvement in restoring electricity supplies to the Cockatoo area following the devastating Ash Wednesday bushfires in 1983. He was Construction Engineer with the SEC’s Eastern Metro Division based at Dandenong at the time.

Ian moved to the Office of the Chief Electrical Inspector in the early 1990s as electrolysis engineer. He later became Special Projects Manager and was appointed Manager Network Safety two years ago – around the same time that ESV was formed.

One of Ian’s great passions outside of work is cricket and he intends to remain involved as a player – both bowler and batsman – and administrator with the Bentleigh Uniting Cricket Club of which he has been a member for 50 years.

ESV thanks Allan and Ian for their services and wishes them all the best for the future.

STANDARDS APPLYING TO CONSTRUCTION AND DEMOLITION SITES

A building worker suffered an electric shock on a building site recently (see article on page 3). In this instance, a number of Standards were not complied. In summary this is what they are.

AS/NZS3012 Electrical installations — Construction and demolition sites

Clause 2.5.1(f) Flexible cords must comply with AS 3191.

AS3191 Clause 1.3.4 states Flexible cord - A flexible cable, of which no wire exceeds 0.31 mm diameter and no conductor exceeds a 4 mm² cross-sectional area, and having not more than five cores.

Clause 2.6.1 Cord extension sets shall comply with AS 3199

AS 3199 Clause 5.1 General The plug and cord extension socket shall be each of the same current rating and configuration, and in no case greater than the current-carrying capacity of the flexible cord.

Clause 2.6.7(a) Limitations on the use of flexible extension cords. Flexible extension cords shall when used in multi-level buildings, be confined to the level of the switchboard from which they originate, except in lift shafts, service shafts, stairwells, formwork or external staging.

AS/NZS3760 In-service safety inspection and testing of electrical equipment

Section 2 GENERAL

Experience has shown that greater than 90% of defects are detectable by visual inspection.

Therefore equipment shall be visually inspected, physically checked and tested in accordance with this Section.

Clause 2.2 PERSONNEL

The inspection and testing tasks specified in this Standard shall be carried out by a Competent Person as defined in Clause 1.4.5.

Clause 2.3.1(a) Confirmation of the correct polarity of live connections in cord sets with re-wireable plugs and cord extension sockets.

Clause 2.3.2 Inspection

The following equipment checks shall be made by visual and physical inspection of all equipment:

(a) Check for obvious damage or defects in the accessories, connectors, plugs or extension outlet sockets; and for discoloration that may indicate exposure to heat, chemicals or moisture;

(b) Check that flexible cords are effectively anchored to equipment, plugs and cord extension sockets;

NOTE This inspection, including flexing and straining at points of entry and clamping points by the application of reasonable combination of push/pull and rotary movements, may detect broken strands or loose connections. It may be conveniently performed in conjunction with the continuity test to Clause 2.3.3.1

Clause 2.3.3.1 Check for damage to flexible cords that:

(i) The inner cores of flexible supply cords are not exposed or twisted; and

(ii) The external sheaths are not cut, abraded, twisted, or damaged to such an extent that the insulatisation of the inner cores is visible; and

(iii) Unprotected conductors or the use of banding insulation tape are not in evidence.

APPRENTICE RECEIVES BURNS INJURIES IN SWITCHBOARD INCIDENT

ESV has investigated an incident at a Melbourne suburban shopping centre in which a second year apprentice received burns injuries while working on a switchboard.

While his injuries necessitated him being taken to the Victorian Adult Burns Service at The Alfred, the victim made a good recovery and has returned to work.

In a statement provided to an ESV investigator, the apprentice said he was bolting an insulating panel on a new circuit breaker at the switchboard.

For this task he was using both a socket spanner and an open ended spanner. He was sitting on a milk crate and reaching into the lower cubicle with the socket spanner. His employer was working some three to four metres away.

He said that from the position he was in could not see underneath where the socket spanner was positioned on the nut he was tightening.

He had started on the bolts on his right with the socket spanner above and the open-ended spanner below. When he went to tighten the bolts on the left hand side, the busbar of the new circuit breaker was in the way so he used the socket spanner below.

According to the statement there was then a bang and a flash, and the door next to him blew open. The apprentice lost sight and took a step or two back.

His employer then ran to him. The apprentice’s hair had caught fire which his employer extinguished using his hands. The ambulance was then called.

The apprentice said that before starting work, his employer had discussed with him the risks involved with the job and he was aware of the live busbars.

ESV warns that electrical apprentices should never work on “live” equipment — regardless of how closely they may be supervised. Experienced electricians should only work “live” when there is absolutely no alternative to doing so. Even then work should not be undertaken unless full safety practices are followed as outlined in the Code of Practice for Safe Electrical Work.

The damaged switchboard

The socket spanner
SAVE TIME AND MONEY – CONDUCT YOUR BUSINESS WITH ESV ONLINE

ESV INTRODUCED ITS EXPANDED RANGE OF ONLINE SERVICES AT THE START OF SEPTEMBER.

Stakeholders who can take advantage of the changes are registered electrical contractors, licensed electrical inspectors, licensed electrical workers and the branch offices of organisations supplying certificates of electrical safety on behalf of ESV.

Promotional brochures explaining the changes will be distributed to registration and licence holders ahead of renewal dates. The brochures provide information on the previously available ESV online services and the new range of services.

If you want to know what you can do, read on:

REGISTRED ELECTRICAL CONTRACTORS

Previously available

> Change Password
When you are registered as an REC, you are given a User ID and pin number to use when accessing our IVR system. To access the online system you use your User ID and PIN. Once you have accessed the system for the first time, you will be asked to change your on-line Password, which will be different to your IVR PIN.

> Update Profile
If your address or contact details change, you are now able to update them automatically on the system without having to contact ESV.

> Order Certificates
As well as ordering / purchasing certificates via the IVR or mail, you are now able to order / purchase certificates using your credit card by accessing our on-line service.

> Lodge Certificates
As well as lodging certificates of electrical safety via the IVR, you can lodge the inspection details online. The system automatically selects your User ID, all you need is your certificate number.

> Review Certificates
After you have lodged your certificates, you can revisit the details at any time. Enter the certificate number and review the details. To do this the certificate must have been issued by you.

The new range of services

> Accessing the ESV on-line services
To access the online system for the first time you must use the same User ID and PIN you use to access the IVR system. You will then be asked to change your on-line Password, which will be different to your IVR PIN.

> Renew Your Registration
Currently you receive a paper renewal form when your registration is about to expire. With the expansion of ESV’s Online services, you can also opt to receive an email notification that your registration will expire in 90 days. You can then go online and renew your registration, as the renewal function will be available under your log in. We will still send you a paper renewal form. However regardless of how the information is passed to you – email or post – you are able to renew your registration online.

> Amend Business Nominees
If your business nominees change, you are able to request to add or remove the business nominee details on-line.

> Amend Technical Nominees (Supervisors)
If your technical nominees (supervisors) change, you are able to request to add or remove the technical nominee details on-line.

> View Order Details
You will be able to view a list of certificate purchases you have made and see the status of processing of the certificate orders.

> Search Order Details
You will be able to search all your previous certificate purchases and review specific details.

> Worker’s List
As part of the regulations, it is expected that you will maintain a register of Licensed Electrical Workers (LEWs) and apprentices that work for you. You will be able to add LEWs to your register as you employ them or remove them when they no longer work for you.

ESV reserves the right to review your workers list at any time.

> Changing Business Details
If your business (e.g. sole proprietor, partnership, corporation) changes in any way, you can request for the change on-line attaching the required documentation.

> Lodgement Activity Report
You will be able to view statistics on your certificate purchases, lodgements, inspections and audits. You will also be able to view a list of certificate numbers and lodgement details if available.

> ESV Correspondence
You will be able to correspond with ESV via the on-line system and keep track of all incoming and outgoing emails.
You will be able to correspond with ESV
You will be able to view statistics on your
Lodgement Activity Report
Request for Additional Classes
Currently you receive a paper renewal form
To access the on-line system for the first time, you will be asked to change your on-line Password, which will be different to your IVR PIN.
Update Profile
If your address or contact details change you are now able to update them automatically on the system without having to contact ESV.
Lodge Certificates of Electrical Safety
As well as lodging certificates via the IVR, you can lodge the inspection details on-line. The system automatically selects your User ID, all you need is your certificate number.
Review Certificates of Electrical Safety
After you have lodged your certificates, you can revisit the details at any time. Enter the certificate number and review the details, provided the certificate was inspected by you.
Contractor Lodgement
You can provide a service to registered electrical contractors/licensed electrical workers by being able to lodge the REC/LEW portion of the certificate on their behalf. Again, lodge on-line by entering the certificate number and viewing the details. [Remember that the responsibility for lodgement of certificates always rests with the REC or LEW]
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Request for Additional Classes
You will be able to request that additional classes be added to your licence. You must supply the supporting documents, including evidence of training and assessment, and are able to pay for this service on-line using your credit card.
Lodgement Activity Report
You will be able to view statistics on your certificate inspection lodgements, audit lodgements and their pass / fail rate. You will also be able to view a list of certificate numbers and lodgement details if available.
ESV Correspondence
You will be able to correspond with ESV via the on-line system and keep track of all incoming and outgoing email.
LICENSED ELECTRICAL WORKERS
Previously available
Change Password
When you are licensed as an LEW, you are given a User ID and PIN to use when accessing our IVR system. To access the on-line system you use your User ID and PIN. Once you have accessed the system for the first time, you will be asked to change your on-line Password, which will be different to your IVR PIN.
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ESV Correspondence
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LICENSED ELECTRICAL INSPECTORS
Previously available
Change Password
When you are licensed as an LEI, you are given a User ID and PIN to use when accessing our IVR system. To access the on-line system you use your User ID and PIN. Once you have accessed the system for the first time, you will be asked to change your on-line Password, which will be different to your IVR PIN.
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ESV Correspondence
You will be able to correspond with ESV via the on-line system and keep track of all incoming and outgoing email.

The new range of services
View Sale History
You are able to view a list of previous certificate sales to a customer with the basic sale details displayed (User ID, Date, Transaction Number etc).
Search Sale History
You are able to search for particular sale details, view all sales you’ve made to a particular customer or the sales made in a particular date range.
View Stock Levels of Certificates of Electrical Safety
You are able to see a summary of the numbers of certificates in stock and what type they are.
Transfer Certificates of Electrical Safety
If by some chance you incorrectly sell a certificate to the wrong customer user ID, you can quickly rectify the issue on-line – and will no longer have to contact ESV to rectify the transaction for you.
ESV Correspondence
You will be able to correspond with ESV via the on-line system and keep track of incoming and outgoing emails.

The branch offices of agents distributing certificates of electrical safety
Previously available
Change Password
As a branch, you have a User ID and password to access the ESV on-line systems, and you can change your on-line password at anytime.
Update Profile
You are also able to update address and contact details at anytime.
Order Certificates of Electrical Safety
As well as using our Interactive Voice Recognition (IVR) system, you can now order certificates via our on-line services.
Sell Certificates of Electrical Safety
As well as selling certificates to customers via the IVR, you can sell them via our on-line services.
Review Certificates of Electrical Safety
You can enter a certificate number and view details on whether the certificate has been sold or not and the transaction number – provided the certificate was allocated by you.

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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.