

# energy safe



SPRING/SUMMER 2010 ISSUE 22

**VICTORIA'S ELECTRIC  
VEHICLE FUTURE!  
ESV INVOLVED IN  
FIVE-YEAR TRIAL  
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**FRONT COVER:** ESV is involved in Victoria's electric vehicle trial, announced by the State Government recently, as a member of the VIP advisory committee. Some 50 organisations and 180 households across the state are expected to participate in the trial lasting five years and costing \$5 million. About 60 vehicles will be used in the trial and households can apply to participate by having the use of one of them for a period. Small passenger cars, light commercial vehicles and even electric two wheelers will be involved in the trial. Read more about it in the centre pages.

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# From the editor.



Welcome to the last issue of **energysafe** for 2010. It has been a very busy year again across all areas of energy safety and hopefully the issues of the magazine published in the last 12 months have reflected this.

We cover a number of matters in this issue. With the approach of summer there is naturally a heavy emphasis on bushfire prevention – not just for the forthcoming hot weather period but well into the future.

As this issue was being prepared, the Powerline Bushfire Safety Taskforce was actively seeking a number of households around Daylesford and Euroa willing to participate in trials to take them off grid this summer on high fire risk days.

Two options are to be trialled. One of them involves installing a "remote area power supply" in a number of properties. This option would consist of a battery, solar panels to charge the battery and a back-up diesel generator.

The other option involves installing a "limited back-up power supply" in properties. Under this option, the households involved will be supplied with a generator to provide electricity for essential appliances only on days of high fire risk.

Public meetings were held in both communities at the end of October and the level of interest was certainly encouraging for those in ESV and the Bushfires Taskforce directly involved with the trials.

Now for something completely different. ESV has been appointed a member of the VIP advisory

committee for Victoria's Electric Vehicle Trial, which was announced in early October. ESV is pleased to be part of the program to ensure that all aspects comply with the relevant electrical safety standards – particularly when it comes to the charging infrastructure, charge heads and vehicle connections.

It's a five-year trial with plenty of opportunities for people to be involved testing electric cars.

We have these subjects from almost totally different ends of the spectrum fully covered in Issue 22.

There is a great deal more besides. There were a number of electricity and gas related fatalities in 2010. All were of course very sad, but the deaths of two young boys from Carbon Monoxide poisoning were particularly tragic and felt throughout Victoria.

As reported previously ESV has a number of programs in place alerting the community about the importance of guarding against Carbon Monoxide poisoning. One of the initiatives is a new brochure called "Beware Carbon Monoxide: It's a Silent Killer. Keep The Family Safe". This is now available and ESV hopes for an extensive statewide distribution.

And finally we wish all readers of our magazine – licensed electricians, registered electrical contractors, licensed electrical inspectors, plumbers and gasfitters and everyone else – a very happy and safe Christmas and new year. Let's make 2011 free of fatalities, incidents and injuries of every sort.

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**Printed by:** Finsbury Green, 46 Wirraway Drive, Port Melbourne, Victoria 3207.

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# Households sought for off grid trials over summer

IN MID OCTOBER IT WAS ANNOUNCED THAT THE POWERLINE BUSHFIRE SAFETY TASKFORCE IS SEEKING 50 HOUSEHOLDS AROUND DAYLESFORD AND EUROA TO PARTICIPATE IN TRIALS TO TAKE THEM OFF GRID THIS SUMMER ON HIGH FIRE RISK DAYS.

Minister for Energy and Resources Peter Batchelor said: "The Taskforce's priority will be to examine all options, including new technologies, to minimise the risk of catastrophic bushfires caused by electrical assets and deliver a 10 year plan to reduce bushfire risk, including costings.

"The Taskforce's trials over summer will provide important research for the 10-year plan and will see 50 households supplied free of charge with different capacity solar panels, batteries and diesel generators to test if they can have mains power disconnected on high risk days."

He said that distribution companies, Powercor and SP AusNet, had identified properties in the Daylesford and Euroa areas that may be suitable for the trials and would be sending out letters seeking participants.

"In addition to these trials, the Taskforce is also finalising a plan including locations, for testing suppression of selected single wire earth return (SWER) and 22kV powerlines on high bushfire risk days.

"The work to be undertaken by the taskforce is about identifying the right electrical technologies for the right areas for the long-term and making sure that any proposals can be successfully implemented."

Mr Batchelor said key safety and energy agencies were represented on the Taskforce.

As reported in the last issue of **energysafe**, the Taskforce is being headed up by Tim Orton, Managing Director of management consultant group Nous.

The Minister said: "Tim's experience in public policy as well as the utilities and environment sectors will be valuable assets to the Taskforce.

"Also represented on the Taskforce of 13 are Victoria's power distribution businesses, the CFA, technical experts and the Marysville & Triangle Development Group.

"The Taskforce will be supported by Energy Safe Victoria and I believe we have the right mix of people to carry out this important work," said the Minister.

The Taskforce will deliver an interim report by 30 January and a full report by 30 June, 2011.

Mr Batchelor said the work of the Taskforce was in addition to new legislation to significantly improve maintenance of existing electrical assets.

The members of the Taskforce were listed in Issue 21 of **energysafe**.

Mr Batchelor also announced that Professor Grahame Holmes, RMIT University Innovation Professor, Smart Energy Systems, had been appointed as the Taskforce's technical expert.

Professor Holmes graduated from the University of Melbourne in 1974, and has a Masters degree in power systems engineering, and a PhD in modulation theory for power electronic converters.

He first worked for six years with a power utility company before becoming an academic in 1980, and in 1984 he joined Monash University to foster the area of power electronics. While at Monash, he established the Power Electronics Group, managing graduate students and research engineers working together on a mixture of theoretical and practical R&D projects.

The interests of the group included fundamental modulation theory, current regulators for drive systems and PWM rectifiers, active filter systems for quality of supply improvement, resonant converters, current source inverters for drive systems, and multilevel converters.

Recently Professor Holmes took up the Innovation Chair in Smart Energy at RMIT University, with a particular focus to bring together university and community interests in what is a rapidly developing area.

Professor Holmes has a strong commitment and interest in the control and operation of electrical power converters. He has made a significant contribution to the understanding of PWM theory through his publications and has developed close ties with the international research community in the area.

He has been a member of the Institute of Electrical and Electronics Engineers (IEEE) since 1987, has published over 60 papers at international conferences and in professional journals, and regularly reviews papers for all major IEEE transactions in his area.

Professor Holmes is an active member of the IPC and IDC committees of the Industrial Applications Society of the IEEE, and has recently co-authored a major reference textbook on PWM theory with Professor Thomas Lipo of the University of Wisconsin-Madison.

Bushfires Taskforce seeks volunteers – see page 20

## Beware Carbon Monoxide – It's a Silent Killer, warns new ESV brochure

ESV'S NEW GAS SAFETY BROCHURE HAS WARNED OWNERS AND TENANTS OF PROPERTIES WITH GAS HEATERS THAT THEY MUST BE AWARE OF THE POSSIBILITY THAT CARBON MONOXIDE (CO) IS PRESENT AND THAT IT IS DANGEROUS.

The brochure emphasises that landlords and their agents have particular responsibilities under the Residential Tenancies Act 1997 to ensure gas appliances in rented accommodation are safe to use and properly maintained.

Tenants should also be aware of their responsibilities when it comes to the care and use of gas appliances, says the new publication.

For full reports see page 26.

FRONT COVER OF ESV'S NEW BROCHURE.



## ESV opening hours for Christmas/ New Year

Just a reminder that ESV's Southbank and Glen Waverly offices will close from 12 noon Friday 24 December 2010 and re-open at 8.30am on Tuesday 4 January 2011. During this period ESV staff will be available to respond to gas and electricity emergencies.

## Man dies in cabin fire

A MAN DIED IN A CABIN FIRE AT A CARAVAN PARK IN PORTARLINGTON RECENTLY.

ESV is investigating the incident and in particular an unflued gas heater found at the scene. An LP Gas 9 kg cylinder which supplied the heater was severely heat effected.

The condition or state of the appliance prior to the explosion and fire is not known. However, in its original condition the heater in question was equipped with an overheat switch which under normal circumstances might be expected to prevent the appliance overheating.

For the full article see page 7.





# Victorian Supreme Court upholds the integrity of the ESV licensing provisions

ON PAGE FIVE OF ISSUE 20 OF **energysafe**, IT WAS REPORTED THAT A MECHANICAL ENGINEER WHO ALSO HELD A BSC AND OTHER QUALIFICATIONS HAD APPLIED FOR A SUPERVISED WORKER'S LICENCE AND THAT THE APPLICATION HAD BEEN REFUSED BY ESV.

The person applying for the licence then sought a review of that decision in VCAT.

In VCAT, the applicant relied upon his occupiers licence, extensive design and teaching in extra low voltage (ELV) and the degrees held in support of his claim that he had equivalent experience to a four year contract of training and 12 months electrical installation work.

In February this year, VCAT found that none of his experience was equivalent but none the less varied the requirement in Regulation 303(1)(b)(i) of the Electricity Safety (Installations) Regulations 1999 to allow the applicant to have a supervised workers licence after a two year contract of training, including 12 months electrical installation work.

ESV appealed that decision to the Supreme Court of Victoria.

The appeal point was a narrow one and simply put was that once VCAT had found there was no equivalent experience, VCAT had no power to change the legislation to give the decision it did.

In mid-October the Supreme Court allowed ESV's appeal and set aside the order of VCAT and then formally dismissed the VCAT application made by the applicant. The Court also ordered that ESV's legal expenses be paid.

This result upholds the integrity of the ESV licensing provision that are now found in Regulation 21 of the Electricity Safety (Registration and Licensing) Regulations 2010.

The decision of the Court can be found at <http://www.austlii.edu.au/au/cases/vic/VSC/2010/470.html>.

As stated in Issue 20 and worth repeating here: it is ESV's contention that at the core of public safety is the licensing of properly trained people. That principle is paramount whether the licence sought is for electrical workers, plumbers, builders or any other vocation where members of the public rely upon the skill and knowledge of those whom they engage.

By appealing, ESV has guarded and promoted that principle.

# Convictions after young worker receives burns from powerline incident

TWO COMPANIES AND A DIRECTOR WERE CONVICTED RECENTLY AFTER A 21 YEAR-OLD WORKER ON A BUILDING SITE RECEIVED SEVERE BURNS AFTER CONTACTING OVERHEAD POWERLINES.

The 2008 incident occurred despite warnings from the network electricity supplier to the company responsible for the site, Hometec Industries Pty Ltd, and director Carmine Salvatore.

Hometec and Mr Salvatore were convicted in the Melbourne magistrates court and fined \$30,000 and \$20,000 respectively.

Roofing and installation company CSR Building Products Limited was also convicted and ordered to pay \$12,500 to the Institute for Safety, Compensation and Recovery Research (ISCRR) at Monash University, for failing to adequately train and supervise workers installing the roofing.

CSR Building Products had engaged the injured worker's employer and brother Mark Watson, who was convicted and fined \$8,000 earlier this year for failing to perform a job safety analysis which considered hazards including powerlines.

According to a statement from WorkSafe, the incident occurred when the injured worker was helping install a roof on a Neerim South domestic construction site, when he made contact with an overhead powerline. He suffered serious burn injuries to his right and left hands and left foot.

"What has happened here is a number of failures in a chain of responsibility," WorkSafe's Executive Director for Health and Safety, Ian Forsyth said.

"Hometec and its director were warned about the no-go zone by the electricity supplier and ordered to stop construction work, yet they failed to do so.

"CSR Building Products had a responsibility to make sure their contractors could do their job safely – which they failed to uphold.

"And the worker's direct employer, Mark Watson, had an obligation to make sure the construction site was safe by performing a job safety analysis which considered risks including powerlines.

"None of these parties managed to fulfil their responsibilities. The upshot of all of this is that a young worker suffered debilitating injuries with long recovery times," Mr Forsyth said.

Mr Forsyth said that there were no excuses for ignoring no-go zones.

"The risks around working near overhead powerlines are well known – the new no-go zone rules were introduced over a decade ago.

"In this case, despite warnings from the network electricity supplier, the company and its director showed blatant disregard for the risks," he said.

Mr Forsyth said that employers had an added level of responsibility when supervising young workers.

"Young workers are more likely to suffer a workplace injury than any other age-group, and more likely to be hospitalised as a result. Managers and supervisors need to be sure young workers are trained and supervised so that they can carry out their job safely," he said.

A statement of fact said the victim was working on the roof fixing a metal batten. He then stood up and as he turned around he contacted the powerline and fell into the roof valley.

He convulsed and was paralysed for several minutes. Fellow workers carried him off the roof and he was taken to the local hospital from where he was transferred to the burns unit at The Alfred hospital. He had suffered serious burn injuries to his right and left hands and left foot. His left foot required a skin graft from his left thigh.

The victim was discharged in March 2008 but continued to be attended by the hospital home service and as an outpatient at the burns clinic. He returned to work in February 2009 but the next month he underwent surgery to reduce the tissue bulk of his left foot, following which he was off work for a couple of months. He resumed normal work in January this year.

# Permits approved for \$326 million wind farm

STATE PLANNING MINISTER JUSTIN MADDEN HAS APPROVED TWO PLANNING PERMITS FOR A WIND FARM AT ARARAT.

He said the project would include up to 75 wind generators and will produce up to 247.5 megawatts of electricity.

"Community concerns about potential landscape and visual amenity and environmental impacts have been heard and appropriate conditions have been placed on the planning permits, including landscape, and flora and fauna issues," Mr Madden said.

Minister for Energy and Resources, Peter Batchelor said that the Windfarm is expected to provide a \$326 million boost to Victoria's regional economy.

# Redesigned Certificates of Electrical Safety

ESV HAS REDESIGNED THE CERTIFICATE OF ELECTRICAL SAFETY TO REFLECT THE REQUIREMENTS OF THE 2009 ELECTRICITY SAFETY (INSTALLATIONS) REGULATIONS AND TO MAKE THE CERTIFICATES EASIER TO USE AND MORE SECURE.

Changes include:

- > Additional "Tickboxes" for the new prescribed work types including part 1 solutions.
- > Better transfer between layers to ensure all copies are readable.
- > Removal of User ID to improve security of your personal details.
- > More room for the description of work undertaken.
- > Revised categories for the type of premises.

**Domestic** electrical installation means an electrical installation in a private dwelling or that portion of an electrical installation associated solely with an individual flat or living unit (e.g. house, apartment, townhouse).

**Non Domestic** electrical installation means an electrical installation in a commercial property e.g. bank, hospital, hotel, licensed grocer, offices, school/kindergarten, petrol station, restaurant, retail store, surgery/clinic, farm or in an industrial property e.g. abattoir, coolstore, factory, warehouse, showroom, oil refinery, quarry, mine, etc.

### Construction Wiring

Wiring systems, including flexible cords and cables, installed to provide electricity for the purpose of construction and demolition work, and not intended to form part of the permanent electrical installation. Construction wiring does not include flexible cords or cables used to connect appliances or luminaires to a socket-outlet.

- > Certificates will have more room for entering the description of work undertaken.
- > For Prescribed Certificates an additional column has been added to the 'Details of Defects' area to support the new expanded defect codes.
- > Safety statement to allow an unsafe installation to be identified and NOT connected to supply.

The IVR lodgement system and electronic certificates will be updated also.

Methods of purchasing and lodging certificates including electronic certificates will not change and existing stocks of certificate can continue to be used.

New Certificates will begin to be available from early 2011 and will be distributed after existing stocks at ESV have been exhausted.

**CERTIFICATE OF ELECTRICAL SAFETY for Non-Prescribed Electrical Installation Work**  
ELECTRICITY SAFETY ACT 1988, ELECTRICITY SAFETY (INSTALLATIONS) REGULATIONS 2009

**CERTIFICATE OF COMPLIANCE**

1. Responsible Person (eg. electrician, supervising electrician, electrician)  
REC reg. licence no. Telephone no.  
Name  
Address

2. Licensed Electrical Installation Worker (supervisor)  
Licence no.  
Name

3. Details of Electrical Installation  
Name of customer  
Address of customer  
Address of premises  
Subclass of work  
Telephone  
MSE (if available)

4. Electrical Work Undertaken  
No light points No single socket outlets No double No job installed as Condition? (Yes/No)  
Maximum demand to supply per phase on completion Consumers meters capacity to supply  
Description of work undertaken (if customer does, please attach)

5. Has this electrical installation work been a previous issue? (Yes/No)  
6. If yes, quote previous certificate number  
7. Type of property where the electrical installation work is carried out (see back cover sheet)  
 Domestic  Non Domestic  Construction

8. The Licensed Electrical Installation Worker named above, who carried out the electrical installation work described above, certifies that the electrical work has passed all the required tests and complies with all requirements with the Electricity Safety Act 1988 and the Electricity Safety (Installations) Regulations 2009.  
Signature  
Date of completion of work

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NON-PREScribed  
Customer copy

THE NEW COES FOR NON-PREScribed WORK.

**CERTIFICATE OF ELECTRICAL SAFETY for Prescribed Electrical Installation Work**  
ELECTRICITY SAFETY ACT 1988, ELECTRICITY SAFETY (INSTALLATIONS) REGULATIONS 2009

**CERTIFICATE OF COMPLIANCE**

1. Responsible Person (eg. electrician, supervising electrician, electrician)  
REC reg. licence no. Telephone no.  
Name  
Address

2. Licensed Electrical Installation Worker (supervisor)  
Licence no.  
Name

3. Details of Electrical Installation  
Name of customer  
Address of customer  
Address of premises  
Subclass of work  
Telephone  
MSE (if available)

4. Electrical Work Undertaken  
No light points No single socket outlets No double No job installed as Condition? (Yes/No)  
Maximum demand to supply per phase on completion Consumers meters capacity to supply  
Description of work undertaken (if customer does, please attach)

5. Was this prescribed electrical installation work done by a process inspector? (Yes/No)  
6. If yes, quote process certificate number  
7. Type of prescribed electrical installation work  
8. Does this installation work include non-prescribed electrical installation work?  
9. Type of property where the electrical installation work is carried out (see back cover sheet)  
 Domestic  Non Domestic  Construction

10. The Licensed Electrical Installation Worker named above, who carried out the electrical installation work described above, certifies that the electrical work has passed all the required tests and complies with all requirements with the Electricity Safety Act 1988 and the Electricity Safety (Installations) Regulations 2009.  
Signature  
Date of completion of work

**CERTIFICATE OF DEFECTS**  
These apply (check boxes)  
Details of Unrecorded Electrical Inspector (UEI)  
Inspector's Employer  
Details of Defects  
Safety Statement  
To the best of my knowledge, the electrical installation work as described in the certificate of compliance and safety that the work is complete does not comply with the Electricity Safety Act 1988 and the Electricity Safety (Installations) Regulations 2009.  
Signature  
Date Inspected  
Date certified

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PREScribed  
Customer copy

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# Plumbing and gasfitting – an integral feature of Melbourne’s new Royal Children’s Hospital

MELBOURNE’S EAGERLY AWAITED NEW ROYAL CHILDRENS HOSPITAL IS A REALITY WITH THE IMPOSING NEW BUILDING TAKING SHAPE ALONGSIDE THE EXISTING HOSPITAL IN PARKVILLE.

Gas for heating and hot water is an integral feature of the new facility which will have more than 350 beds and is expected to become operational towards the end of next year.

The natural gas and other features of the development include:

- > 6 off 2400 kW or 9.2 GJ/hr condensing heating hot water boilers.
- > 2 off natural gas fired 1.4MW Tri-Generation engines 11 GJ/hr.
- > 742 MJ/hr hospital kitchen to service all the patient meals.
- > 1 GJ/hr supply to the stage 2 hotel.
- > 2400 MJ/hr supply serving the hospital retail shops area.
- > 3150 MJ/hr supply to the hospital local steam generation plant to serve autoclaves etc.
- > 165,000 sq/m hospital space over 7 levels (excluding car park).
- > 75,000 sq/m car park over 3 basement levels.

The plumbing contract for the job is a joint venture with A.G. Coombs and A.E. Smith. Interestingly enough, A.G. Coombs were involved in the original RCH construction back in the 1950s.

ESV is required to inspect the installation during all stages of construction and Gas Inspector Steve Bailey has made about 10 visits to the site since the first stages of the development emerged from the ground.

Here’s a more detailed overview of the plumbing and gasfitting installation with a brief description of different plants:

- > Meters room centrally located on lower ground (street) level, separate meters for core and non-core areas (retails and future hotel).
- > Two tri-gen engines with 11 GJ/hr capacity each located on basement 2 level, supplied with 80 mm diameter pipe at 70 kPa with 50 m length. The tri-gen engines provide some electrical power supply including standby power to the site with heat rejection for cooling via an absorption chiller and space heating.
- > Six (five + one future) hot water heaters (boilers) with 9 GJ/hr capacity each located on basement 2 level, supplied with 100 mm diameter pipe at 7 kPa with 50 m length. The water heaters are fitted with dual-fuel gas and diesel burners for space heating for the whole site including the future hotel.
- > Two steam generators with 4.5 GJ/hr capacity each located on level 6 east building, supplied with 100 mm diameter pipe at 7 kPa with 150 m length. The steam generators provide steam for the operating theatres sterilizers and washers and labs autoclaves.
- > Three steam generators with 0.7 GJ/hr capacity each located on level 8 of Research Precinct building, supplied with 80 mm dia pipe at 7 kPa with 250 m length. The steam generators provide steam for labs sterilizers, washers and autoclaves. This line also serves the DHW units on the roof.
- > The main kitchen on basement 1 with 0.8 GJ/hr total capacity is supplied with 50 mm diameter pipe at 7 kPa with 150 m length.

> The retail food tenancies on the ground floor of the east building with 1.7 GJ/hr total capacity is supplied with 65 mm diameter pipe at 7 kPa with 50 m length.

> The future hotel with an estimated 1 GJ/hr capacity is supplied with 50 mm diameter pipe at 7 kPa with 200 m length.

Gas supply approval was granted for the project in August. While there are areas still to be tested, the main supplies at 70 kPa and 7 kPa, are now with the gas company to install the meters.

Footnote: When Director of Energy Safety, Paul Fearon, toured the site recently he bumped into an old school pal, Peter Natoli, a lead foreman on site involved with the plumbing and gasfitting work.



DIRECTOR OF ENERGY SAFETY, PAUL FEARON (RIGHT) AND PETER NATOLIE (LEFT), A LEAD FOREMAN.



SOME OF THE GAS INSTALLATION AT THE PROJECT



A MODEL OF THE NEW ROYAL CHILDRENS HOSPITAL



# ESV continues to investigate fatality at caravan park

## ESV CONTINUES TO INVESTIGATE A FIRE IN A CABIN AT A CARAVAN PARK IN PORTARLINGTON IN WHICH A MAN DIED.

An unflued gas heater with a Schwank burner was destroyed in the incident and the LP Gas 9 kg cylinder which supplied the heater was found to be severely heat effected.

What actually transpired and caused this incident is presently unresolved.

The condition or state of the appliance prior to the fire is not known. In its original condition the heater in question was equipped with an overheat switch – a tilt switch and oxygen depletion device that under normal circumstances might be expected to prevent the appliance overheating.

Similarly, if the heater had been accidentally knocked over, the tilt switch would have terminated the flow of gas to the burner. The oxygen depletion device would have sensed the absence of enough oxygen for correct combustion and shut the appliance off.

The operational condition of the appliance at the time of the incident will probably never be known.

While the incident is still being investigated, and no matter what the situation may have been, it reinforces the message that every caution should be taken by all who use an unflued gas heater including portable camping heaters in tents, caravans or mobile homes.

It also reinforces the necessity to provide adequate flowing ventilation of free air to the appliance and ensure that any gas appliance particularly heaters are regularly serviced.

The Gas Safety (Gas Installation) Regulations of 2008 banned the installation of any new unflued gas heaters in Victoria and will allow only the replacement of an existing unflued space heater that was installed prior to 18 January 2008 to be replaced with a gas heater that meets the following requirements.

Regulation 29, Installation of flueless space heaters:

- (2) A person may replace an existing flueless space heater in residential premises with a new flueless space heater (*the new heater*) if –
- (a) the heater being replaced operated on LP Gas; and
  - (b) the new heater operates on LP Gas; and
  - (c) the emission of oxides of nitrogen from the new heater does not exceed 2.5 ng/J; and
  - (d) the carbon monoxide/carbon dioxide ratio of the new heater does not exceed 0.002.

The damage caused in the incident to the appliance, LPG cylinder and the cabin was very extensive.

The intensity of heat generated managed to melt the cylinder valve leaving only a small deposit of brass in the male thread of the cylinder POL valve location.

The practice of locating and or using an LP Gas cylinder indoors is not recommended under any circumstances and must not exceed those as stated in AS/NZS 5601-2008 Clause 4.4.4.1 and 4.4.4.2.



THE HEATER AND CYLINDER FOLLOWING THE FIRE.

LPG cylinder

Remnants of POL gas valve



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# Recent appointments at ESV

## Adrian McKenzie joins ESV to assist in reducing bushfires from electricity assets



ADRIAN MCKENZIE

ADRIAN MCKENZIE HAS JOINED ESV IN THE ROLE OF SENIOR STRATEGIC POLICY ADVISOR. SPECIFICALLY HE IS WORKING ON THE REDUCTION OF BUSHFIRE STARTS FROM ELECTRICITY ASSETS AND IS A KEY MEMBER OF THE ESV SECRETARIAT SUPPORTING THE WORK OF THE POWERLINE BUSHFIRE SAFETY TASKFORCE.

Adrian brings wide ranging experience from an extensive career here and overseas to his work at ESV.

Born in Victoria and growing up in a farming area in South Australia's mid north, Adrian graduated from university in 1968 as an electronics / communications engineer – qualifications which he supplemented with an MBA in 1990.

He then worked at Boeing Aircraft, Seattle, on 747 aeroplane noise reduction. This was followed by a spell with Owens Illinois, Toledo using computers to control bottle-making and then the first experimental 64 dot by 64 dot plasma panels.

Returning to Australia, Adrian worked at Telstra for 20 years in the data area replacing telegraph, telex and private lines with packet switching (forerunner of the internet) and digital data networks. He then moved into telecommunications product management and after that led research teams at Telstra's research laboratories looking at carriage of video over cable.

Adrian then spent some years at CitiPower starting a telecommunications carrier, moving the company into gas retailing and managing the company's energy retailing compliance program.

He then ran his own consultancy company for five years specialising in project management, organisation effectiveness and risk management before joining the Essential Services Commission where he set up the process and IT for certificate registries associated with renewable energy and energy efficiency programs.

Adrian joined ESV in July. He is married with two grown-up daughters and lives in Kensington.

## Appointment of technical writer

MICHAEL WEBER HAS BEEN APPOINTED AS TECHNICAL WRITER FOR ESV'S GAS INSTALLATION AND APPLIANCE SAFETY GROUP.

Michael has seven years of technical writing experience encompassing documentation for engineering, manufacturing, commercial, scientific and marketing disciplines.

With formal training in Technical Communication he writes, develops and designs documentation across a full spectrum of business requirements. He has recently completed Post Graduate studies in Technical Communication through Swinburne University.

Michael grew up and was educated in Melbourne.

His working career began in the mining industry and he was involved in planning, development and supervision at mine sites.

As a mining engineer he worked for BHP in the Northern Territory and Queensland, ARCO (Atlantic Richfield Company) in Queensland and for the Electricity Trust of South Australia at Leigh Creek before returning to Victoria.

Married, with three children, Michael also writes for and edits the International Settlers Group genealogical newsletter. He is a passionate coin collector and brews his own beer at home.



MICHAEL WEBER

## ESV appoints new gas installation and appliance safety engineer

AFTER AN EXTENSIVE CAREER WITH A NUMBER OF RESPONSIBILITIES IN THE GAS INDUSTRY, ENZO ALFONSETTI HAS JOINED ESV AS A GAS INSTALLATION AND APPLIANCE SAFETY ENGINEER.

Enzo began his career in the gas industry in 1982 working in the research and development department of Craig & Seeley, manufacturer of Chef gas and electric cooking appliances and Gasglo ducted space heaters.

During this time he was studying part time for a Mechanical Engineering degree at Swinburne Institute of Technology.

At Craig & Seeley he was involved in the design of gas and electric cooking appliances and gas ducted space heaters.

During his career with the company, Enzo became the Technical Services Manager at Craig & Seeley and was responsible for the overall testing of prototype models and ultimately responsible for obtaining certification for new models that were to be released to the market.

In 2001 after the closure of the Craig & Seeley manufacturing site in Brunswick, Enzo was employed by Beckley Forge Pty Ltd. as a design engineer. During his time with this company he was responsible for the design of gas components such as gas appliance regulators and was also responsible for obtaining certification of a range of BBQs and patio heaters.

In 2003 he moved to the Gas Technology Services division of Vipac for a short time to assist in maintaining NATA accreditation for the gas appliance testing laboratory.

His next move was employment as a testing officer by Enertech Australia Pty Ltd. He was involved in the testing of Type A appliances to the relevant Australian standards. During this time he became a NATA signatory for the gas laboratory and also assisted Enertech in obtaining NATA accreditation for electrical whitegoods performance testing.

In 2006 he was employed by SAI Global and was primarily responsible for certifying Type A gas appliances and components. He also became an accredited ISO 9001 auditor and was also responsible for certifying plumbing products under the regulated WaterMark scheme and solar and heat pump hot water systems under SAI Global's StandardsMark certification scheme.

Enzo eventually became the program manager for SAI Global certification of Type A gas appliances and gas components.

In September 2010 he joined ESV.



ENZO ALFONSETTI



# ESV's new acceptance process – new application form to apply from 1 December 2010

## ESV'S NEW GAS ASSESSMENT AND ACCEPTANCE PROCESS FOR ASSESSING ALL COMPLEX GAS INSTALLATIONS AND TYPE B APPLIANCE APPLICATIONS IS UNDERWAY.

From 1 December 2010 only applications received on the new application form will be accepted by ESV. The new form is reproduced on pages 30 and 31.

The introduction of the new process follows a very successful program of information sessions designed to assist all licensed persons to understand the requirements.

There were 15 presentations conducted across the state starting on Monday 30 August 2010 and finishing on Tuesday 28 September. The presentations were conducted at Tullamarine, Rowville, Wangaratta, Bendigo, Warrnambool, Geelong, Werribee, Shepparton, Albury, Churchill, Frankston, Mildura, Ballarat, Horsham and Preston.

The presentations were very well attended, with an average of over 100 people at the metropolitan venues and approximately 40 people at the country events.

It is ESV's view that the overwhelming majority of gasfitters who attended supported the new process.

The presentations were made by ESV Gas Inspectors Peter Herlihy, Simon Prouse, Peter Ryan and Cameron Diplock, together with Manager Complex Gas Installations, Doug Rennie, and Manager Complex Gas Appliance Safety, Ignazio Cannizzo.

As explained in previous articles about the new process, job applications judged as being a high safety risk will continue to be inspected as is currently happening.

For those job applications judged as medium or low safety risk, the complex gas installation or Type B appliance will be conditionally accepted.

Please note that the following applies to applications judged as medium or low safety risk:

- > If a new application form is correctly and completely filled out, ESV will issue a Gas Supply Approval Notice for a complex gas installation to the relevant gas company where a natural gas meter or LP Gas cylinder / tank is required.
- > A list of acceptance conditions will be sent to the applicant which must be completed and provided to ESV within three days of the job being completed.
- > If all the acceptance conditions are provided and assessed to be satisfactory for such a job, the job will be sent to an audit data base. The audit data base will select, at random, a percentage of jobs for audit every month.

> ESV will ensure that no licensed person is excessively audited for no valid reason.

The benefits of the new assessment and acceptance process are:

- > Required information will be more easily obtained from a customer as information must be provided to ESV for a job to proceed.
- > Greater assurance that nothing is missed.
- > Licensed person's work on a complex gas installation can be better planned.
- > Licensed person's appointments can be made sooner and any potential safety issues will be highlighted earlier.
- > Gas supply can be obtained a lot quicker.
- > ESV will be able to determine which licensed persons require further training and in what areas.
- > Licensed persons that do the job properly will be rewarded.
- > ESV will be able to formally and transparently determine which jobs are to be inspected.
- > ESV will be able to better utilize gas inspectors to concentrate more on:
  - i) Training of gasfitters and other gas industry people.
  - ii) Ensuring that the servicing of gas appliances does take place and that the work is good quality.
  - iii) Improving the efficiency of gas appliances.

If you would like further information on the new gas assessment and acceptance process, contact ESV on 1800 652 563.

# ESV at Community Safety Day

## ELECTRICITY AND GAS SAFETY RECEIVED PLENTY OF PROMINENCE WHEN ESV JOINED A NUMBER OF EMERGENCY AND SAFETY SERVICES FOR THE COMMUNITY SAFETY DAY AT MELBOURNE'S DOCKLANDS IN LATE OCTOBER.

Organised by Victoria Police, the safety event also featured the fire authorities, SES, marine safety organisations, water service providers and a whole host more involved in keeping Victorians safe.

The organisers estimated that between 30,000 and 35,000 people – many of them family groups – attended the event.

There was a lot of interest in what ESV had to offer visitors. It is estimated that 120 show bags containing ESV branded products were given away. The 2,600 items handed out individually or in the show bags included pens, brochures, **energysafe** magazines and mouse pads.



THE ESV STAND AT THE COMMUNITY SAFETY DAY.



ESV REPRESENTATIVES WHO STAFFED THE STAND – GAS INSPECTOR STEVE BAILEY, ENFORCEMENT OFFICER DARYL TAYLOR AND GAS INSPECTOR KEVIN NATHAN. WITH THEM IS JACQUI BERRY, THE MC FOR THE EVENT.

## New energy efficiency handbooks to explain Building Code of Australia provisions

THE AUSTRALIAN BUILDING CODES BOARD (ABCB) HAS PRODUCED TWO NEW HANDBOOKS RELATED TO THE ENERGY EFFICIENCY PROVISIONS WITHIN THE LATEST BUILDING CODE OF AUSTRALIA – BCA2010. ONE OF THE HANDBOOKS CONTAIN ENERGY EFFICIENCY PROVISIONS FOR ELECTRICIANS AND PLUMBERS.

The handbooks are available on the ABCB website.

The Building Code of Australia (BCA) contains requirements for the design and construction of buildings which designers, builders and tradespeople must understand and apply.

Since 2003 the BCA has contained requirements for energy efficient buildings and some of these have changed in subsequent years. In particular, the current BCA2010 has introduced significant changes to past editions.

To assist practitioners to understand and apply the BCA, the two new handbooks are titled:

1. Energy Efficiency Provisions for Electricians and Plumbers; and
2. BCA Section J – Assessment and Verification of an Alternative Solution.

The handbooks are not regulatory documents and do not address State and Territory variations or additions to the BCA. They contain general information provided as an aid to understanding nominated energy efficiency provisions and should not be taken as providing specific advice on any specific issue.

### 1. Energy Efficiency Provisions for Electricians and Plumbers

In consideration of the scope of recent changes to the BCA, the ABCB saw a need for a handbook to inform electricians and plumbers of the energy efficiency provisions of BCA2010 and to explain how these provisions may affect them.

Handbook content of particular interest to electricians includes:

- > amount of insulation on a ceiling, usually over electrical wiring;
- > implications for insulation when installing downlights;
- > switching and controls for lighting, fans, garage exhaust systems, pumps, space heaters, swimming pool heaters and boiling and chilling water appliances;
- > maximum power capacity of lights, fans, pumps and other air-conditioning plant;

- > energy monitoring and metering facilities;
- > restrictions on use of electric heaters; and
- > specifications for a range of control gear.

The handbook content of particular interest to plumbers includes:

- > insulation and installation of ductwork;
- > insulation and installation of heating water and cooling piping;
- > insulation and installation of hot water piping (through AS/NZS 3500);
- > maximum power capacity of fans and pumps and impacts on duct and pipe sizes;
- > restrictions on use of electric water heaters and pool heaters; and
- > use of solar heaters for domestic pools.

### 2. BCA Section J – Assessment and Verification of an Alternative Solution

The aim of this Handbook is to provide an explanation of methods of assessment and verification of Alternative Solutions to the Deemed-to-Satisfy Provisions of Section J of the BCA and addresses topics such as:

- > evidence of suitability;
- > comparisons with deemed-to-satisfy provisions;
- > use of software; and
- > Verification Method JV3.

## What a place to build a nest!

WHAT A PLACE INDEED FOR THESE BIRDS TO BUILD THEIR HOME. DIRECTOR OF ENERGY SAFETY PAUL FEARNOR TOOK THESE PHOTOS NEAR PORT DOUGLAS IN QUEENSLAND ON HIS RECENT HONEYMOON BECAUSE HE COULD NOT BELIEVE HIS EYES!

The birds appear to be happily nesting on the top of a power pole totally oblivious to the dangers.

ESV staff were invited to supply captions for the photos and a large number of excellent ideas were received.

Some entries were brief, others longer. This is a brief one:

*"This pair should be ESV's entrant for the Avian Darwin Awards.*

Or: *"and you had to build here, didn't you bright spark!"*

Then there is this real estate promotion.

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# Are you Ready?

The Building Code of Australia is changing for lighting requirements in residential constructions. Electrical contractors will be expected to sign off on the BCA compliance.



## You need to know...

- What the new regulations are
- What they mean to you and your customer
- How do you ensure compliance
- What the lighting options are

Learn about the new changes to the Building Code of Australia at the Residential Lighting 2011 training course, developed by NECA and funded by the Department of Planning and Community Development's *Green Skills for Trades Program*.

Courses are commencing in early 2011. Training includes a free Lighting Calculator and Simulator to help you market your services to potential customers.

To be automatically notified of course dates and venues, register your interest at our website now: [www.necacourses.com](http://www.necacourses.com).



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# Decorative gas log fires – the importance of ventilation

By **ESV Gas Safety Officer, Roger Lambie**

**VENTILATION IS VERY IMPORTANT TO THE OPERATION OF ANY GAS APPLIANCE BUT IN PARTICULAR TO DECORATIVE GAS LOG FIRES AND CERTAIN REQUIREMENTS IF NOT FOLLOWED MAY CREATE A POTENTIAL HAZARD.**

Ventilation requirements are very specific to the safe operation of a decorative gas log fire, as air movement created by other operating ventilation systems or air distribution systems such as exhaust fans in kitchens, bathrooms even ducted heating systems can cause a negative pressure within a residence that is less than atmospheric or adversely affecting the operation of a decorative gas log fire.

The installer of a decorative log gas fire must ensure that the ventilation requirements of Clause 5.12.13.3 of AS 5601 – 2004 as detailed below, are applied as the responsibility for any incident involving the installation of this appliance and the lack of ventilation will be their responsibility.

A service person that is requested to service any appliance that is not installed as per Clause 2.10 of AS 5601 – 2004 “*Dealing with a Dangerous Gas Installation or Appliance*” would also be responsible should an incident relating to ventilation occur.

See clause 5.12.13.3 of AS 5601 – 2004 “*Ventilation Requirements.*”

One or more openings with a combined free ventilation area of not less than the **equivalent cross-sectional area of the flue cowl** shall be provided for **each decorative gas log fire.**

**(The new AS/NZS 5601 to be published shortly will require two or more openings.)**

The opening may be provided by any of the following options, provided that there is a ventilation path to outside that is unobstructed by building material or insulation:

- a) Directly through an outside wall (preferred option)

- b) Through to an outside wall but offset.
- c) Into a cavity ventilated to outside.
- d) Into an underfloor space ventilated to outside.
- e) Into a roof space ventilated to outside.

The chimney in which the appliance is installed is not to be considered as a ventilation opening.

There are a number of other requirements regarding the installation of decorative gas log fires. Refer to page 89, Clause 5.12.13 through to 5.12.13.6, which need to be adhered to.

ESV has become aware of problems with these installations particularly the adherence to ventilation requirements and are highlighting the above requirements to installers and service technicians alike for appropriate action.

Currently the ESV website has two lots of information on the installation of decorative gas log fires. See [www.esv.vic.gov.au](http://www.esv.vic.gov.au): For Gas Professionals, Technical Information Sheets for Gasfitters, Guides and data sheets, General appliances and installations, Decorative Gas Log Fires. On this sheet there is a link to the decorative gas log fire data sheet.

On publication of the new AS/NZS 5601 Standard these pages will be upgraded.

# ESV seeks “potentially dangerous” gas cookers

**ESV IS SEEKING A HANDFUL OF FAKE, UNSAFE AND EVEN “POTENTIALLY DANGEROUS” GAS COOKERS WHICH MIGHT HAVE BEEN SOLD AS PART OF A LIQUIDATION SALE OF LEGITIMATE APPLIANCES.**

The ovens are unsafe. They can be turned on, and in the case of legitimately approved and safe cookers, if the flame goes out, a flame failure device locks out the gas after a short period, possibly around 30 seconds.

However, in the case of the cookers in question, there is no flame failure device, and should the flame go out the gas would continue to flow, until the knob is physically turned off.

ESV’s concern is that there could be a build up of gas and this could result in an explosion if there is an ignition source nearby.

ESV investigations suggest that the fake appliances were sold as a job lot through a liquidation sale of Eurolec appliances in 2007. A large purchaser who bought up the liquidated stock then offloaded products at auction houses across the country and somehow fake Eurolec products were included in the mix.

The products of concern are copies of a unit which had AGA approval and carried a copied AGA approval sticker.

ESV investigators believe that some 23 fake cookers have been sold. Fortunately, 16 units have been retrieved – leaving at least seven of the potentially dangerous products still out there.

While there could be units in other parts of Australia, ESV believes that they are most likely to be in Victoria.

ESV has instructed the original purchaser of the goods that if they come across any units they are to be quarantined and are not to be sold.

The appliance involved is a 600 mm upright cooker oven with the Model E 5402009. The manufacturers name EUROLEC in black is emblazoned across the front bottom plate.

The cooker is manufactured of stainless steel with a glass front door and glass top clear panel that when lifted exposes four gas burners. The grill compartment is within the oven.

As mentioned, the oven does not have a flame failure safety device monitoring the oven burner, and when the oven thermostat knob is turned on, gas will flow directly to the burner.

Ignition of the oven burner is via a hole in the base of the oven floor where a naked flame, i.e. match or lighter, is to be placed over this hole to provide flash ignition.

The model number details are affixed to the back of the cooker and an unauthorised certification badge is located on the splash tray adjacent the front right hand burner.

Plumbers and gasfitters are requested to contact ESV if they become aware of the cookers in question. Initial advice is that the cookers should be turned off and not used.



ONE OF THE FAKE, POTENTIALLY UNSAFE COOKERS.



# Major store recalls uncertified patio heaters

ESV RECENTLY INVESTIGATED AN INCIDENT WITH A PATIO HEATER INVOLVING A FIRE AND DISCOVERED THERE HAD BEEN AN INCORRECT FITTING OF A HOSE CONNECTION. THE PRODUCT REQUIRED THE CUSTOMER TO ACTUALLY ASSEMBLE IT.

Apart from investigating the cause of the fire, ESV also checked whether the product was certified for use in Australia.

On checking with the certifying bodies, it was found the appliance involved in the incident was not certified and had been purchased by retail chain Rays Outdoors directly from the manufacturer in China.

The appliance brand name, Renaissance Model HMXD-A, was previously approved by the Australian Gas Association (AGA) and coincidentally was under suspension following a Product Verification Report (PVA) that found the same problems with the heater as mentioned above.

Investigations found:

- > No anti-tilt prevention that may cause problems with the stability of the appliance if accidentally knocked or blown over.
- > Connection of gas supply hose not readily accessible for checking of a potential leak.
- > The regulator/hose assembly and tilt switch provided is not that with which the appliance was originally certified and have not been subject to any test.



THE HEATER INVOLVED IN THE RECALL.

Rays Outdoors have voluntarily conducted a recall of the product and provided a full refund. Recall notices were placed in stores across the country. Other customers who had purchased the appliances were also contacted.



THE POSTER ISSUED BY RAYS.

# San Bruno gas explosion – could it happen here?

THE GAS EXPLOSION IN SEPTEMBER AT SAN BRUNO, CALIFORNIA, PRODUCED SOME DRAMATIC TELEVISION FILM AND NEWSPAPER PHOTOS FOR AUDIENCES ALL AROUND THE WORLD. WHILE THE CAUSE OF THE EXPLOSION IS OFFICIALLY STILL BEING INVESTIGATED, ESV HAS BEEN ASKED THE QUESTION: "CAN SUCH AN EVENT HAPPEN HERE?"

It has to be accepted that there are gas pipelines of the type which failed and caused the explosion at San Bruno, California, all over Melbourne and Victoria. Such infrastructure is necessary in Victoria where natural gas is reticulated directly to over 1.4 million homes, factories, offices, shops etc.

### The ESV response

In principle, it is possible for a gas fire or explosion to occur in Victoria but the likelihood of a catastrophic rupture incident similar to that at San Bruno is significantly reduced. In addition, the Australian Pipelines Standards (AS2885) requires operating systems to be in place to significantly reduce the likelihood of any loss of integrity.

All licensed pipelines are operated and maintained with compliance to the Australian Standards – a mandatory requirement under the Pipelines Regulations 2007.

The Australian pipeline industry experience is that pipeline failure rates in Australia overall are about 1/10<sup>th</sup> of those in the US and Europe and that the predominant cause of pipeline failure in Australia is external mechanical damage by third parties.

In Victoria the Pipelines Act and the Gas Safety Act require pipeline licensees to have *Safety and Operating Plans* or *Safety Cases* and to submit them for regulatory approval as a condition of being allowed to operate.

Integrity management plans are in place for all pipelines in Victoria. ESV assesses these plans/safety cases for compliance with statutory requirements and fitness for purpose. ESV then regularly audits the performance of all pipeline licensees. These plans/safety cases are reviewed and revised on a five yearly basis for compliance.

In summary, while such an explosion can happen the chances of it are significantly reduced here in Victoria.

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**'One call does it all'**

# ESV's powerline warning ahead of the locust plague

THE IMPENDING ARRIVAL OF THE WORST LOCUST PLAGUE TO BE EXPERIENCED IN REGIONAL VICTORIA FOR MANY DECADES – AND A SPATE OF INCIDENTS INVOLVING POWERLINES AND CROP DUSTING AIRCRAFT – RESULTED IN ESV PUBLISHING IMPORTANT WARNINGS IN EARLY SPRING.

With four incidents of contact between aircraft and powerlines being reported, ESV issued a safety alert "Watch Out for Wires".

The alert has been distributed to every farm in Victoria through the latest issue of the Victorian Farmers Federation FarmGuide.

"The projected locust plague this spring is expected to increase aerial spraying activity, and pilots of low flying aircraft must be constantly on watch for wires and must conduct a diligent site risk assessment before taking off," said the alert which is partially reproduced below.

ESV and electricity distribution company, Powercor, also launched a joint advertising campaign across regional Victoria, alerting those spraying locusts to the potential threat from powerlines.

The artwork reproduced on this page ran for a number of weeks in selected newspapers across the north-western region of Victoria.

The campaign preceded what could be Victoria's worst locust plague in 75 years.

"A particular hazard when flying low in the presence of plague locusts is the possible rapid loss of forward visibility due to the impact of large numbers of insects on the windscreen of the aircraft," said the ESV alert.

The alert warned among other advice that aircraft should not come closer than 45 metres to any powerline.


Pilots were also advised to locate all overhead powerlines in the operational area ahead of spraying. Ideally a job safety assessment should be carried out before starting operations.



Whether you're on the ground or in the air, powerlines can be hard to see – but deadly to hit. Always inspect locations before you spray. Or call Powercor on **13 22 06**.

ESV'S JOINT SAFETY ALERT WITH POWERCOR FOR PILOTS OF CROP DUSTING AIRCRAFT.

CAL SAFETY ALERT



## Watch Out for WIRES

A spate of serious incidents in Victoria involving crop dusting aircraft and overhead powerlines - and a likely significant increase in locust control activities in the coming months - has prompted Energy Safe Victoria (ESV) to issue the following warning.

In recent months ESV has received four reports of spraying aircraft colliding with overhead power lines in Victoria.

ESV recognises that agricultural pilots operate in a special environment which involves low level flying, but reminds pilots and operators that overhead power lines can be very difficult to see during low level flying operations, depending upon altitude, angle, visibility, background terrain, vegetation or the sky. Therefore, unnecessary low level flying in the vicinity of overhead power lines must be avoided.

The projected locust plague this spring is expected to increase aerial spraying activity, and pilots of low flying aircraft must be constantly on watch for wires and must conduct a diligent site risk assessment before taking off.

A particular hazard when flying low in the presence of plague locusts is the possible rapid loss of forward visibility due to the impact of large numbers of insects on the windscreen of the aircraft.

ESV stresses that safety must never be compromised and when performing aerial agricultural spraying pilots must:

1. Ensure they have a valid aerial agricultural rating and current medical certificate.

THE WARNING ISSUED JOINTLY BY ESV AND POWERCOR.

## Ensuring Victorians were not at risk from energy efficiency programmes

THE INSULATION AND SOLAR INCENTIVE PROGRAMMES DEMANDED CLOSE AND IMMEDIATE REGULATORY ACTION TO ENSURE THAT VICTORIANS WERE NOT AT RISK AND THAT DEVELOPMENTS WERE BEING CLOSELY MONITORED, DIRECTOR OF ENERGY SAFETY PAUL FEARON REPORTED IN THE ESV 2009/10 ANNUAL REPORT.

"Specific and targeted audits confirmed that Victoria was not at risk from the foil insulation that was being installed in other states. On the other hand, loose insulation incorrectly installed has and continues to cause fires.

"ESV has worked closely with other agencies to educate the public and change the standards for light fittings to ensure that the risks are minimised.

Protecting the community – ESV activities on compliance and enforcement. See page 22.



Houses

Apartments

Townhouses

Units



# Don't be caught out by BCA lighting changes

Changes to the Building Code of Australia (BCA) mean that from 2011 only 5W of per square metre for lighting in domestic dwellings will be permitted in order to comply with the BCA.

Are you up to speed with the changes and how they could affect your business? Are you aware that YOU will be required to sign off on the BCA compliance, and that you will be responsible for rectifying any lighting that doesn't comply?

NECA Victoria recognises the difficulty many contractors will face trying to understand the nature of the changes – and their ramifications – and is offering a FREE training course to all electrical contractors and their staff, starting from February 2011.

The BCA changes extend beyond simple luminaires and can provide additional opportunities for informed contractors, such as allowing for extra GPOs for reading lamps or feature lighting, the use of dimmers, motion controllers and other energy management solutions. Even hard-wiring special lighting could lead to more income for contractors who understand fully the impact of the BCA changes and know how to take advantage of them.

NECA Victoria Member Services and Education Manager Rod Lovett says the course is like no other. "This course aptly named "Domestic Lighting 2011", has been specifically created for the contractor

who spends most of his time working on domestic installations. It is part of the Victorian Governments Green Skills for Trades Program and forms an important part of the 6-star building program," he says.

"Contractors can no longer think like they used to 20 or 30 years ago – too much has changed recently. Customers demands are greater and the new regulations really do impact on what they can have. It really is important that electrical contractors understand the requirements and importantly are educated into the available options. Having to return to a residence to correct any non-complying lighting installations could prove to be extremely costly and time-consuming.

"However, it can be avoided if contractors are aware of the new requirements and are armed with the right tools," says Rod. A new innovation is a newly designed lighting calculator and lighting simulator which attendees to the course will be instructed on how to use. The lighting calculator which will help in designing a lighting layout or verifying a supplied design complies with the BCA. The specially developed lighting simulator will allow them to demonstrate to their customers (owners, builders, developers) what the different lighting scenarios can be. Both the lighting calculator and simulator are provided free.

"Not understanding lux levels and lighting options will present a minefield to

contractors working in this space," says Rod. "This course will give contractors the ability to adjust lighting to suit their customers' desires and also allow them to innovate to overcome any lighting shortfalls."

Additionally, NECA will be running a series of seminars throughout the state over the next 18 months designed at educating stakeholders affected by the BCA's changes – builders, developers, architects and the general public.

"This is a major initiative and investment in the industry," says Rod. "These seminars will also be informing attendees that there are qualified electrical contractors who understand the lighting requirements of the BCA because they have undertaken the course. We will be encouraging patrons to use these contractors.

Training courses will commence in early February 2011 and will be at a variety of locations across both metropolitan Melbourne and regional areas. Locations and times will be advertised in early January 2011 with all electrical contractors receiving notification through the mail.

For more information, contact NECA on 03 9645 5533 or visit [www.necacourses.com](http://www.necacourses.com) to register your interest.

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# ESV takes role in Victoria's Electric Vehicle Trial



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ESV HAS BEEN APPOINTED A MEMBER OF THE VIP ADVISORY COMMITTEE FOR WHAT HAS BEEN DESCRIBED AS VICTORIA'S GROUNDBREAKING ELECTRIC VEHICLE TRIAL, WHICH WAS ANNOUNCED BY THE PREMIER, MR BRUMBY IN EARLY OCTOBER.

Other organisations appointed to the Committee include the Australian Conservation Foundation (ACF), Australian Electric Vehicle Association (AEVA), Australian Energy Market Operator (AEMO), Consumer Utilities Advocacy Centre (CUAC), Energy Networks Association (ENA), Environment Victoria, Federal Chamber of Automotive Industries (FCAI), RACV, Victorian Automobile Chamber of Commerce (VACC) and Vision Australia.

A statement from ESV provided for the electric vehicle trial's information paper stated: "Energy Safe Victoria supports the initiative to introduce a trial of electric vehicles in Victoria. Energy Safe Victoria is pleased to be part of the VIP advisory committee as this will ensure that all aspects of the program comply with the relevant electrical safety standards. This includes the charging infrastructure, charge heads and vehicle connections."

Launching the trial, Mr Brumby said that more than 50 organisations and 180 households across the state would participate in the five-year trial.

He said Victoria was a step closer to an electric vehicle future, with the start of the \$5 million trial to make it easier for people to choose electric cars and bikes.

"The Electric Vehicle Trial will create real-life conditions by testing how drivers, vehicles, plug-in charging infrastructure and the electricity network will work in everyday situations.

"This is a real-world test of how these vehicles will operate in Victoria and that means we need Victorians to use electric vehicles and report back on their experiences.

"This is an exciting opportunity for people to be part of the development of low-emission transport options as we look for new ways to cut carbon emissions and provide greener travel.

"Most of the vehicles will be small passenger cars. Some electric light commercial vehicles will be used in freight fleets, while electric two-wheelers will also be tested," he said.

"As part of the trial, charging points will be installed in homes of participants and in workplaces. Public quick charging points will also be set up for when an electric vehicle needs a top-up."

About 60 vehicles will be used in the trial and they have been provided by Blade Electric Vehicles, Toyota, Mitsubishi, Nissan and EDay Life. Public charging infrastructure will be supplied by Better Place, ECOtality and ChargePoint.

Electric two wheelers that are currently being used in fleets will also be featured in the trial.

Applications to participate in the trial can only be made online through the RACV website at [www.racv.com.au/evtrials](http://www.racv.com.au/evtrials).

A valid Victorian driver's licence is required.

The vehicles will rotate between households and fleets for three months at a time, with the trial to look at their experiences and what type of charging infrastructure is needed. The trial is seeking 180 households to take an electric vehicle for the three months.

The State Government will provide the vehicle charging point and pay for insurance, while the households will pay the cost of electricity.

According to the information paper for the trial, the electric vehicle market of the future will be based on purpose-built and designed mass-produced electric vehicles. Most of the vehicles in the trial will be of this type. However, the Victorian Government has been funding a range of locally-manufactured electric vehicle conversions, and some of these will be included in the trial.

Households for the trial are being selected through an application process which will run annually to 2012 through the RACV website.

## Charging infrastructure

Vehicles can be charged from household power points, but they can be charged more quickly from specialised power outlets or charging points. At the moment there are no dedicated electric vehicle charging points in Victoria.

As part of the trial, charging points will be installed in trial participants' homes and some workplaces. For most people, this is where all their charging will happen – at their destination, rather than as a detour. Public 'quick charging' points will also be set up, including 'fast charge' stations for times when an electric vehicle just needs a top-up.





NISSAN LEAF ALL ELECTRIC CAR.



AUSTRALIAN STANDARD SIGN FOR PARKING SPACES WITH RECHARGING FACILITIES.

The trial will look at drivers' experiences in a diverse network, and will work out what types of charging infrastructure are needed in which locations.

#### Environmental impacts

The trial will investigate how real the environmental benefits are.

As the information paper states: "Electric vehicles do not emit greenhouse gases or other air pollutants like nitrous oxides and particulate matter. However, producing the electricity to run them can create pollutants, depending on how it is made. If the electricity is from coal or other fossil fuels, making it will create pollution. If the electricity is from renewable energy, like wind or solar, your electric vehicle can be 'zero emissions', both from your vehicle and at the source.

"The trial will investigate the effects of sourcing and using different types of power to run electric vehicles. All vehicles contain 'embodied' energy and emissions, which means they use energy and create pollution during their construction. The trial will look at the energy and pollution that goes into making of electric vehicles and managing them at the end of their service life, particularly their batteries.

"Electric vehicles are very quiet, which has benefits, but they also have dangers. The trial will investigate how silent cars may endanger pedestrians and other road users and how to balance that against their benefits," said the paper.



TOYOTA RECHARGEABLE PRIUS.



MITSUBISHI iMIEV

# Prosecutions

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

- > A person who had been licensed as an electrician was charged with failure to ensure work is inspected, three counts of non-compliant work and failing to complete a compliance certificate. The defendant was ordered to perform 150 hours of unpaid community work over 15 months and to pay costs of \$3,497.00.
- > A licensed electrical installation worker was charged with giving misleading information. The defendant gave an undertaking to be of good behavior for 12 months and to pay \$500.00 to the court fund. The defendant was also ordered to pay costs of \$1,800.00.
- > Enlighten Power Pty Ltd, an REC, was charged with installing unsafe electrical equipment. The defendant company gave an undertaking to be of good behavior for 12 months and pay \$250.00 to the court fund.
- > An unlicensed and unregistered person was charged with two counts of contracting without registration, one count of carrying out electrical work unlicensed and one count of installing unsafe electrical equipment. The defendant was convicted, fined \$2,000.00 and ordered to pay costs of \$1,400.00.
- > An ES licence holder was charged with working without effective supervision. The defendant gave an undertaking to be of good behavior for 12 months and pay \$100.00 to the court fund. The defendant was also ordered to pay costs of \$1,000.00.
- > YTC Pty Ltd (also known as YTEC Pty Ltd, an REC, was charged with two counts of installing unsafe electrical equipment. The company was fined \$2,000.00 without conviction.
- > A licensed electrical installation worker was charged with installing unsafe electrical equipment and permitting a person to carry out work which does not comply. The defendant was fined \$500.00 without conviction and ordered to pay costs of \$1,349.00.
- > A licensed electrical installation worker was charged with installing unsafe electrical equipment and failing to test. The defendant was fined \$1,500.00 and ordered to pay costs of \$1,350.00.

- > Warmcoil Pty Ltd, an REC, was charged with installing unsafe electrical equipment and failing to complete a certificate of electrical safety. The defendant company was fined \$1,000.00.
- > An unlicensed person was charged with carrying out electrical installation work whilst unlicensed. The defendant was placed on a good behavior bond for six months and ordered to contribute \$500.00 to the court fund.

- > A plumber was charged with aiding and abetting an unlicensed person to carry out electrical installation work whilst unlicensed. The defendant was placed on an undertaking to be of good behavior for 12 months and make a payment of \$500.00 to the court fund. The defendant was also ordered to pay costs of \$1,800.00.

## Infringement notice summary

	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sept 10	Oct 10	Total
<b>Total</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>27</b>

## Infringement notices 2009/10 types of infringement notices issued

2009/2010	REC LEW Other	Offence Code	Offence	Penalty
<b>November 09</b>	OTHER	6220	Unlicensed electrical installation work	<b>\$584</b>
<b>December 09</b>	OTHER	6201	Supply unregistered electrical equipment	<b>\$567</b>
	OTHER	6205	Offer unregistered electrical equipment	<b>\$567</b>
	OTHER	6220	Unlicensed electrical installation work	<b>\$567</b>
	REC	6242	Fails to give certificate within time	<b>\$113</b>
	LEW	6242	Fails to give certificate within time	<b>\$113</b>
<b>January 10</b>	LEW	6350	Interfere with a network asset	<b>\$234</b>
	REC	6350	Interfere with a network asset	<b>\$234</b>
<b>February 10</b>	REC	6243	Fails to lodge copy with the Office	<b>\$117</b>
	LEW	6220	Unlicensed electrical installation work	<b>\$567</b>
<b>March 10</b>	REC	6373	Fails to display number	<b>\$1,168</b>
	REC	6373	Fails to display number	<b>\$1,168</b>
	REC	6373	Fails to display number	<b>\$1,168</b>
<b>April 10</b>	LEW	6228	Fails to complete certificate within time	<b>\$117</b>
<b>May 10</b>	LEW	6227	Fail to disconnect equipment from supply	<b>\$467</b>
	LEW	6237	Certificate does not describe work	<b>\$117</b>
<b>June 10</b>	LEW	6298	Fails to give electronic notice	<b>\$58</b>
<b>July 10</b>	OTHER	6225	Fail to remove unsafe equipment	<b>\$467</b>
<b>August 10</b>	REC	6243	Fails to lodge copy with the Office	<b>\$117</b>
	OTHER	3595	Unauthorised excavation near pipeline	<b>\$1,168</b>
<b>September 10</b>	REC	6377	Non complying installation work	<b>\$2,986</b>
	REC	6242	Fails to give certificate within time	<b>\$117</b>
	REC	6243	Fails to lodge copy with the Office	<b>\$117</b>
	OTHER	3595	Unauthorised excavation near pipeline	<b>\$1,168</b>
<b>October 10</b>	REC	6242	Fails to give certificate within time	<b>\$117</b>
	REC	6243	Fails to lodge copy with the Office	<b>\$119</b>

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- Portable Appliance Safety Testing
- Disconnect/Reconnect Work's Licence
- LEA Coaching

**For more information phone Wendy on 03 9925 4921 or email [wendy.gillies@rmit.edu.au](mailto:wendy.gillies@rmit.edu.au)**

[www.rmit.edu.au/engineeringtafe](http://www.rmit.edu.au/engineeringtafe)



# Linework – an unusual subject matter for an artist!

AT FIRST GLIMPSE, THE CHOICE OF SUBJECT MATTER OF SHARRON OKINES' ARTWORK SEEMS A LITTLE UNUSUAL. HER NEW LINOCUTS FEATURE STARK IMAGES OF LINEWORERS HARD AT WORK ON THE WIRES, POWERLINES AND OTHER TRANSMISSION INFRASTRUCTURE – EVEN A PAIR OF OVERALLS.

But when you hear this Mornington Peninsula artist speak about her respect for her husband's work as a linesman, a 'glover', her choice starts to make perfect sense.

Her series, exhibited in Brunswick Street Gallery's recent printmaking show, is a group of linocut, drypoint and aquatint etching prints inspired by some photos of her husband at work. The series is titled "Love Letter".

"Lineworkers are very proud of the work they do, but they don't really like to draw attention to themselves," says Sharron. "I'm really proud of what my husband does."

First attracted to the unusual perspective – the lines and the patterns – she saw when she started looking up at powerlines, Sharron became interested in what her husband did all day – and started to really appreciate it.

"It's a very dangerous job, but you don't take any notice of it," says Sharron. "It's just *there*. But without people like him working on the wires, there's simply no electricity. I wanted to create a new way of looking at something you see everyday."

Sharron also wants people to pay attention to the dangers of electricity. With their strong black and white lines the artworks certainly have a "dark edge" to them, suggesting warning signs.



ARTIST SHARRON OKINES AND SOME OF HER WORK.



"I'm very aware that my husband does a very dangerous job," says Sharron. "My husband is one of the most safety-conscious guys I know ... but I don't think other people understand just how dangerous it is. I wanted to bring that into the art."

Sharron also wanted to capture the feeling she had as a child, staring at the sky.

"I was always looking up," laughs Sharron. "Even now, as we are travelling, I always prefer to look up than straight ahead or sideways. You get a fascinating perspective and see things you wouldn't otherwise."

"Hopefully through my artwork, I will get other people to notice what goes on up there."

Her choice of black and white in her art was intentional: she wanted to echo an old-fashioned way of portraying work, "harking back to artwork of the 1940s and 50s." Creating linocuts is an intricate process. It takes a long time to get a perfect result, says Sharron. It took her three months to etch just three images.

"I enjoy the disciplines of printmaking, from the simple lines in linocut prints to the alchemy of processing plates," she says.

"I hope my artwork will draw attention to the quietly diligent men who ensure one of our most essential services."

**You can view and purchase Sharron's artwork on her website:**  
<http://sharronokines.weebly.com/>



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# ESV writes to residents in Euroa and Daylesford seeking volunteers to trial alternative energy options

COMMUNITY MEETINGS WERE HELD IN BOTH EUROA AND DAYLESFORD IN LATE OCTOBER EXPLAINING THE POWER SUPPLY OPTIONS TO BE TRIALLED OVER THE COMING SUMMER.

The options could result in properties receiving their electricity supplies from alternative sources to the main power grid on days of bushfire threat.

As explained in letters from ESV to residents, one option is to install a “remote area power supply” in a number of properties. This option consists of a battery, solar panels to charge the battery and a back-up diesel generator.

The other option is to install a “limited back-up power supply” in properties. Under this option, the households involved will be supplied with a generator to provide electricity for essential appliances only on days of high fire risk.

The households involved in this trial will have the additional benefit of being able to rely on the limited back-up supply whenever outages occur on the electricity network on days other than when bushfires threaten.

Both options will be available to the households involved free of charge.

The local electricity distribution company – SP AusNet and Powercor – nominated a number of properties in the area as being suitable for the trial and delivered the letters on behalf of the Taskforce and ESV.

As previously reported the Taskforce will deliver an interim report on options for minimising bushfire starts from electricity assets to the Director of Energy Safety, Paul Fearon, by 30 January next year with the full report to be provided by 30 June. Paul will pass on the reports with his recommendations to the State Government.

In a news release supplied to local media outlets, Paul said, “Unfortunately a small number of the catastrophic bushfires occurring on 9 February 2009 were started by the electricity network.

“The Victorian Bushfires Royal Commission recommended a number of options including progressively replacing the electricity network with technology that reduces the risk of bushfires started by the network.

“The State Government established the taskforce to consider a broad range of options in more detail – hence the need for the trial of the two options which have been identified and the need for households to take part in testing them.”

Paul said ESV would be contacting households to determine the level of interest in taking part in the trials and provide further information where required.

“We are also interested in talking to those who are not interested in being involved. We believe that understanding why households are not interested is as important as participating in the trial.

“We realise that people living in regional Victoria have a lot on their plate with the threat of the locust plague and other issues but we hope that they realise the importance of these trials and will help us,” said Paul.

## Retirement of Minister for Energy and Resources

VICTORIA'S MINISTER FOR ENERGY AND RESOURCES – AND ESV'S MINISTER – PETER BATCHELOR ANNOUNCED HIS RETIREMENT FROM POLITICS IN EARLY OCTOBER. HE SAID HIS RETIREMENT WAS FOR PURELY PERSONAL REASONS.

It was stated he would remain in the portfolio until the State election on 27 November to continue a range of reforms, including important negotiations on the staged closure of Hazelwood Power Station as part of a commitment to cut emissions by at least 20 per cent by 2020.

In a note to the energy sector, Mr Batchelor said: “I have loved being the Minister for Energy and Resources at a time when energy policy has been so hotly debated and I've appreciated the support I have from the sector.

“In Energy and Resources the State Government has worked to clean up the electricity supply, reform the national electricity market, significantly boost all types of renewable energy, and look after Victorian consumers.”

At the announcement of the retirement, the Premier John Brumby paid tribute to Peter Batchelor as “a Minister of tremendous capacity and experience, a passionate reformer across a range of portfolios, as well as a first-rate Leader of Government Business in the Legislative Assembly”.

“Peter Batchelor has built a legacy of reform and historic investment across a range of portfolios,” Mr Brumby said.

Mr Brumby said Mr Batchelor had overseen significant reforms in the Energy and Resources Portfolio, as a frontline Minister in the Government's actions to address climate change.

“Peter's reform focus was invaluable as we charted Victoria's future energy mix through our Climate Change White Paper and the Future Energy Statement,” Mr Brumby said.

“In his portfolio, Peter has overseen significant new investment in energy generation, including the largest wind farm and solar facility in the southern hemisphere and new gas power generation at Mortlake.”

In a media release, Mr Batchelor listed his key achievements in his 21 years as a member of the State Parliament.

“Through the energy and resources portfolio I am proud to have overseen a significant investment by the State Government to kick-start a clean-up of the energy sector.



RETIRING MINISTER FOR ENERGY AND RESOURCES, PETER BATCHELOR, PHOTOGRAPHED FOR ESV'S 2009/10 ANNUAL REPORT.



# ESV investigates fire in lamp adaptor at a school

ESV INVESTIGATED AN INCIDENT IN A SCHOOL AT NOBLE PARK AFTER REPORTS THAT A T8-T5 ADAPTOR CAUGHT FIRE.

Investigations found that there was no electrical safety approval marking on the rating plate of the appliance.

The adaptor manufactured in China was supplied by a company in Tasmania.

Since the incident the company that fitted these adaptors has replaced them all with normal T8 lamps. An estimated 250 were installed at the school in question. The company reported that a number of other similarly damaged T5 adaptors were found during the replacement process.

ESV obtained three samples of the faulty adaptor which showed various degrees of damage.

One of the samples had extensive damage where the plastic enclosure had melted and the PCB appeared to have been on fire. The damage appeared to have been around a power transistor.

The other two samples showed scorch marks on the plastic enclosure near the transformers of the electronic ballast.

ESV subsequently alerted the Electrical Safety Officer in Tasmania who contacted the supplier of the T8-T5 adaptor. A Stop Sales notice was placed on the company which also agreed to voluntarily recall the suspect batch of adaptors.



A T8-T5 ADAPTOR.

The Electricity Safety Office in Queensland reported three incidents involving similar T8-T5 fluorescent lamp adaptors incorporating electronic ballasts. The mode of failure was also similar internally; however the enclosure was aluminum not plastic. The incidents also occurred in educational facilities.

Before installing any equipment it is important to ensure that the equipment complies with the applicable standards and is approved if required. Suppliers should be asked for proof of compliance. If they cannot provide it do not purchase the product.



PART OF THE ADAPTOR WHICH MELTED.

# ESV detects cooker without evidence of approval

ESV HAS INSTRUCTED A SUPPLIER OF COOKING EQUIPMENT TO ENSURE ALL ITS TRADENAMES AND MODELS SOLD IN AUSTRALIA, ARE LISTED ON THE CERTIFICATE OF APPROVAL AND THAT THE NAMEPLATE LABELS ON EACH COOKING APPLIANCE ARE CORRECT.

Enforcement Officer Trevor Hudson detected a cooker being offered for supply without evidence of the required Australian electrical safety approval mark during a visit to Leisurfest at Sandown Park Racecourse in late September.

The supplier was warned that cooking appliances have been a prescribed class of electrical equipment for many years with the most recent prescription being on 10 June 2010 by notice published in the Victorian Government Gazette No. G23.

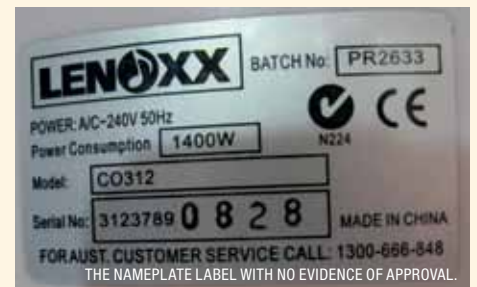
"Electrical equipment being supplied without an approval marking would appear to be not in accordance with Section 57(2) of the Electrical Safety Act. The penalty for non-compliance is up to \$4,778 for a natural person and in the case of a body corporate up to \$23,890," said the letter.

The supplier was also warned that under the Electrical Safety (Infringements) Regulations 2000, ESV may also serve Infringement Notices for any failure to comply with the Act. The penalty for an Infringement Notice ranges from \$478 to \$2,389 for each breach.

ESV has requested a written statement from the supplier advising:

- > full contact details of the cooking appliance supplier and proof of purchase if available;
- > total number of non-compliant cooking appliances sold and number still in stock;
- > why these cooking appliances were being sold without an Australian approval marking;
- > actions being taken to ensure that all prescribed electrical equipment without approval, is immediately withdrawn from supply;

- > actions proposed to approve this cooking appliance and mark it as approved; and
- > that the supplier understands the requirements of Section 57(2) of the Electrical Safety Act.



THE NAMEPLATE LABEL WITH NO EVIDENCE OF APPROVAL.



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# ESV's Annual Report for 2009/10 – “Protecting the Community”

AS DIRECTOR OF ENERGY SAFETY, PAUL FEARON, WROTE IN THE FOREWORD TO THE 2009/10 ESV ANNUAL REPORT THE YEAR WAS MARKED BY ENORMOUS CHALLENGE AND A DEMANDING WORK PROGRAM.

Much of that challenge was across the area of compliance and enforcement.

This is what Paul wrote on the topic:

Throughout 2009–10 ESV implemented a number of compliance and enforcement initiatives as well as regulatory changes that better targeted existing or emerging issues in gas and electricity safety. For gas these included:

- > The introduction of a Code of Practice for Public Events.
- > An audit of the Plumbing Industry Commission inspection processes for standard installations.
- > An audit process for the three gas appliance certifying bodies.
- > A new risk based inspection process for Type B gas Installations.
- > During the year, ESV inspected 2440 complex gas installations and 88.4% were found to be compliant. In addition 910 Type B gas appliances were inspected with 84.2% found to be compliant.
- > ESV's Gas Installations and Appliance Safety (GIAS) detected a number of non-approved gas appliances which had been imported and sold in Victoria on internet trading sites. A prosecution is pending.
- > Gas inspectors investigated three major incidents – two of them involving suspected carbon monoxide poisoning. The most serious being the death of two young boys at Mooroopna in late May. In the other incident, a young medical intern was seriously injured following a gas explosion in a unit in Wangaratta.

Further details of these incidents can be found in the Gas Safety section of the Annual Report.

For electricity the initiatives and regulatory changes included:

- > A greater volume and targeting of audits of electrical installations up from 5% of Certificates of Electrical Safety submitted to 8.5%.

- > An increase focus on unlicensed work and non-submitting of certificates.
- > A more cohesive national approach to equipment safety compliance which will lead to a nation one-stop database of approved electrical equipment.
- > New installation and licensing regulations that are better aligned with the wiring rules and define the responsibilities of electricians and inspectors. The licensing changes have reduced the cost of registration and introduce new categories of restricted licences. These measures will ensure ESV has the regulatory tools and systems to improve the level of safety and compliance of electrical equipment, installation, workers and the public.
- > The design of a new assessment tool for assessing Electricity Safety Management Schemes.
- > A greater number of targeted and routine audits of electricity infrastructure including steel conductor, the asset management records of distributors and the line clearance plans of local councils.
- > New electric line clearance and electricity safety management regulations, replacing the previous regulations.
- > The revocation of the Electricity Safety (Network Asset) Regulations, reflecting a shift away from prescriptive regulation to safety management schemes.

During the year, 139 information sessions were held for electrical contractors, inspectors and workers. Topics covered included the new regulations, changes to the wiring rules and inspection / installation of solar systems with more than 7,700 people attending these sessions. 1,077 point of sale audits for equipment safety compliance were conducted with a compliance rate of 97%.

Of the nine electrical fatalities, five involved customers' installations, appliances or equipment. Out of the four deaths involving the electricity supply network, three related to contact with overhead conductors, highlighting the importance of ESV's publicity campaigns to increase public awareness. All nine electrical fatalities involved non-electrical workers or the general public.



More than 600,000 certificates of electrical safety were sold through wholesalers and 4% online as electronic certificates. The following major electrical incidents were investigated during 2009-10:

- > electrocution of a man using a portable generator to farm worms;
- > electrocution of a teenager using damaged electrical equipment;
- > a factory worker performing mechanical repairs on live machinery;
- > an excavator driver was killed when he picked up live cables he had dug up; and
- > an elderly man died when he made contact with aged, damaged wiring in a roof space.

All these tragedies involved no breach of wiring rules or regulations, but show how important it is to maintain equipment, regularly inspect and test electrical installations, treat electricity with respect and don't work live. A number of similar instances resulting in injuries were investigated and it was only a matter of chance that these incidents did not result in electrocution.

ESV jointly investigated, with MFB and CFA, a number of fires caused by incorrectly installed insulation and provided information and recommendations to the Commonwealth Government.

In the infrastructure area 45 audits of gas safety cases were carried out and nine local council electric line clearance plans were audited.

The Annual Report is available on the ESV website.

## RMIT offers one day solar awareness course

RMIT'S "INTRODUCTION TO SOLAR AWARENESS" IS A NEWLY DEVELOPED ONE DAY COURSE, SPECIFICALLY DESIGNED FOR ELECTRICAL WORKERS THAT ARE NOT SOLAR TRAINED AND ACCREDITED, BUT MAY BE CALLED TO PERFORM ELECTRICAL WORK AT A LOCATION WHERE THERE IS A SOLAR SYSTEM INSTALLED.

Contact Herb Weber on 9925 4386 or [herbert.weber@rmit.edu.au](mailto:herbert.weber@rmit.edu.au) for more information on the course.

Herb told **energysafe**: "As photovoltaic systems are increasingly installed on both residential and commercial buildings, it is imperative that electrical workers and their apprentices working on these premises understand their environment and are aware of all the possible hazards. This crucial information is covered in the course."

In order to install and connect photovoltaic systems in Australia, an electrician must hold an unrestricted electrical license and have completed the appropriate accredited solar training.

Successful completion of the solar training course enables the participant to apply for registration with the Clean Energy Council in the following categories:

- > Design and Install Grid Connected Systems
  - > Design Only, Grid Connected Systems
  - > Installer Only, Grid Connected Systems
- See the Clean Energy Council website under "Accreditation" for further details.

RMIT also delivers block release Solar Accreditation Training – on campus or on site – to suit individual PV Installation companies.



# Getting beyond depression and anxiety

DEPRESSION AND ANXIETY CAN AFFECT ANYONE, ANYWHERE, AT ANY TIME, ACCORDING TO BEYOND BLUE, AUSTRALIA'S NATIONAL DEPRESSION INITIATIVE, AND PEOPLE IN THE TRADES ARE NOT EXEMPT. SO PERHAPS IT'S TIME TO TURN OUR ATTENTION TO OUR MENTAL HEALTH.

It's a normal part of life to feel sad, stressed or anxious at times. But it's certainly not normal to feel such overwhelming feelings of panic, fear and uneasiness that you can't eat or can't sleep. It's not normal to feel such persistent sadness or feelings of worthlessness that they take over your life.

You might be finding it difficult to think straight or concentrate like you used to, or find you have lost interest in things you used to enjoy.

You might be irritable and easily frustrated, finding it hard to take minor personal criticisms or spending less time with friends and family. These are all symptoms of depression and anxiety.

"Men and women experience depression in the same way – the same array of signs, symptoms and feelings – but the difference is in men's response to their own symptoms," says Clare Shann, Deputy CEO of Beyond Blue.

"We know from research that women speak more openly about their health and mental health – they'll talk with family and friends or seek help from a professional like a GP," says Clare. "But men tend not to seek help as readily, for mental health as well as physical health problems."

"It's really concerning that depression can go undiagnosed and, therefore, untreated."

Undetected depression and anxiety disorders can be very serious indeed. Symptoms can become severe and disabling. Depression is a known high-risk factor for suicide.

There is also a considerable impact on workplaces and organisations. According to Beyond Blue, undiagnosed depression in the workplace costs \$4.3 billion in lost productivity each year. On average, every full-time employee with untreated depression costs an organisation \$9,665 per year. Depression accounts for more than 12 million days of reduced productivity each year.

A proactive approach minimises the impact on the person and the work team. A quick mental health check of your own self and the people around you is easy to do.

"There are things to look out for", says Clare Shann of Beyond Blue. "Perhaps someone you work with is finding it hard to concentrate, experiencing memory problems or having difficulty managing the complex tasks they usually do easily."

"They might be turning up late or have a shorter fuse than usual. Social withdrawal is also very common. As is an increased use of alcohol or drugs... look out for a marked change in behaviour over at least two weeks," says Clare.

The good news is that effective treatment is readily available. "There is a range of psychological and practical therapies that can get you on track quite quickly."

If you think you might need some support, or think talking things through might be of help to you, a GP is a good place to start.

There is an info line run by Beyond Blue that provides callers with access to information and referral to relevant services. They can help you find a doctor or other mental health practitioner.

Beyond Blue has also just released a helpful booklet *A Guide to What Works for Depression*, which rates medical, psychological, complementary and lifestyle options you may consider for the treatment of depression.

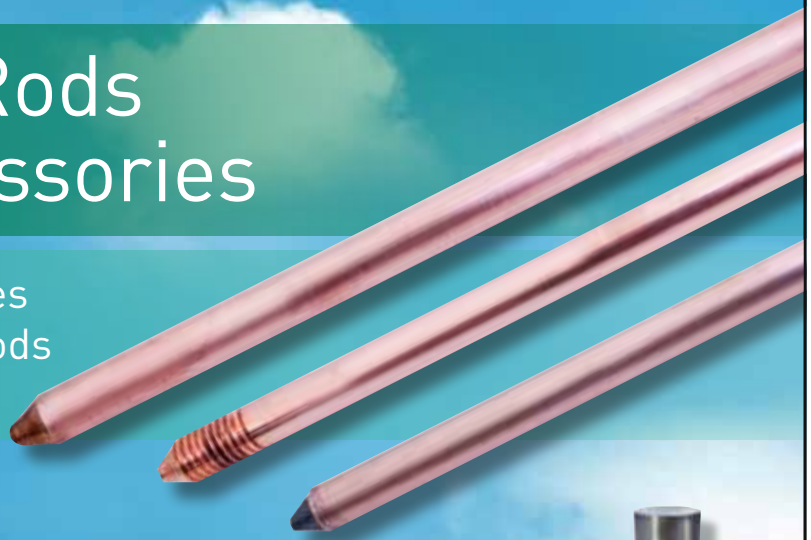
"Be on the lookout early, so you can get on top of the symptoms," says Clare Shann. "Get on top of them before they make a serious impact on your life."

**Beyond Blue: [www.beyondblue.org.au](http://www.beyondblue.org.au)**  
**Beyond Blue info line: phone 1300 22 4636**  
**Lifeline: phone 13 11 14**



## Earth Rods & Accessories

Comply with AS/NZS Wiring Rules 3000:2007 that stipulate Earth Rods need to be 250 microns coated



**EC130**  
Earth Clamp for 13mm



**CL602**  
Earth Clamp for 16mm



**EC19**  
Earth Clamp for 19mm



**CP502**  
Copper Alloy Coupling



**DS81**  
Driving Stud



**DH2**  
Driving Head



[omegapower.com.au](http://omegapower.com.au)

# Your questions on electricity installation issues – and the answers

Compiled by **ESV Electricity Technical Advisor, John Stolk**

**energysafe** continues its regular series featuring some of the questions which **ESV** receives on a range of electricity installation issues, some of them relating to gas installations. Also provided are the answers together with references to the Acts, Standards, Regulations and Clauses which apply to them.

Question	Answer	Standard	Clause
What are the mandatory tests required to be carried out to verify that the electrical work complies and is there documented guidance?	The following tests shall be carried out along with a visual inspection for a low voltage electrical installation: (a) Continuity of the earthing system ( <i>earth resistance of the main earthing conductor, protective earthing conductors and bonding conductors</i> ) (b) Insulation resistance (c) Polarity (d) Correct circuit connections (e) Verification of impedance required for automatic disconnection of supply ( <i>earth fault-loop impedance</i> ) (f) Operation of RCDs AS/NZS 3017 "Electrical Installations – Testing and inspection guidance" sets out some common inspection and test methods.	AS/NZS 3000:2007	Clause 8.3
When installing an underground service what spacing is required from other services such as water, gas and telecommunications?	All underground wiring systems shall be spaced not less than 100 mm from other underground services. <i>Exception – where water service has an internal diameter greater than 65 mm the spacing extends to 300 mm.</i> Wiring system shall be suitably marked with warning tape in accordance with clause 3.11.4.5. of AS AS/NZS 3000:2007.	AS/NZS 3000:2007	Clause 3.11.5
Do I need to equipotential bond the conductive reinforcing of a concrete floor or wall of a toilet?	No, unless the toilet is installed within a room that contains a bath and/or shower.	AS/NZS 3000:2007 Amendment 1	Clause 5.6.2.5
What is the minimum size earthing conductor used for the equipotential bonding the conductive reinforcing of a concrete floor for a shower, bath or swimming or spa pool?	The equipotential bonding conductor shall have a cross-sectional area not less than 4 mm <sup>2</sup> .	AS/NZS 3000:2007	Clause 5.6.3.2
When installing the electrical supply for a combined electric oven and gas cook-top in a domestic installation, do I need to provide an isolating device?	Yes, Clause 5.12.2.5 of AS 5601:2004 (Gas Installations) requires the electrical connection of a gas cooking appliance to be a readily accessible switched socket outlet or double pole isolating switch located outside and adjacent to the oven recess. Any penetration of the partition for the power supply cord shall be of a size to allow the plug to pass through it.	AS 5601	Clause 5.12.2.5
Do I need to provide a compliance certificate if I replace a socket-outlet or an architrave switch with an equivalent replacement?	Yes, the replacement of a socket-outlet or an architrave switch is electrical installation work which requires the issue of a compliance certificate.	Electricity Safety Act 1998	Section 45A
When installing temporary overhead wiring for shows and carnivals, what clearance is required from the ground to cables supported by catenary?	The minimum distance between the ground and overhead wiring is 6 m in areas where vehicles are parked or driven or 3 m in other locations.	AS/NZS 3002:2002	Clause 2.1.3
When do I need to apply for my electricians licence at the completion of my apprenticeship?	Within 3 months, after that period you would be unlicensed.	Electricity Safety Act 1998	Order in council G17
Is the structural metalwork of a house have to be earthed?	Yes, structural metalwork forming the frame of a dwelling shall be earthed.	AS/NZS 3000:2007	Clause 5.4.6.2

## Moves to curb dishonest door to door energy salesmen

**A NEW INITIATIVE BY THE ENERGY INDUSTRY TO CURB DISHONEST PRACTICES BY DOOR-TO-DOOR SALESMEN THROUGH A NEW SELF-REGULATION CODE OF CONDUCT HAS BEEN WELCOMED BY MINISTER FOR ENERGY AND RESOURCES PETER BATCHELOR.**

"Last year I called on the Energy Retailers Association of Australia (ERAA) to clean up inappropriate door-knocking activities and it is great that they have now taken action," he said.

Mr Batchelor said retail laws had clear requirements that people had to give explicit and informed consent before they moved onto another energy contract and the ERAA scheme would work alongside and complement the existing government-administered regulatory regime.

"The self regulatory measures will involve standardised training and recruitment practices, the tracking and registering of door-knockers, an independent complaints process, compliance auditing and potential sanctions against ERAA members whose sales practices generated concerns in the community," he said.



# Update on energy efficiency requirements for lighting incandescent lamp phase-out

SINCE 1 FEBRUARY 2009 THERE HAS BEEN AN IMPORT RESTRICTION FOR GENERAL LIGHTING SERVICE (GLS) INCANDESCENT LAMPS IMPLEMENTED THROUGH COMMONWEALTH REGULATION.

Commencing in November 2009, tungsten incandescent GLS lamps and ELV halogen non-reflector lamps were required to comply with the Minimum Energy Performance Standards (MEPS) that are set out in the AS/NZS 4934 standards.

MEPS improve the end-use energy efficiency by eliminating lower efficiency lamps from the market. MEPS for incandescent lamps are set out as minimum Efficacy in lumens per watt. There are also requirements for Lumen Maintenance (minimum of 80% measured at 75% of rated lamp life) and Minimum Lamp Life (median lamp life of at least 2000 hours). The methods for measurement of these are set out in standard AS/NZS 4934.1 and where possible are based on International Commission on Illumination (CIE) and International Electrotechnical Commission (IEC) methods. The standard does not cover safety requirements, which are covered separately in the AS/NZS 60432 series of standards.

## Compact Fluorescent Lamps

Over the last few years, the retail price of self-ballasted compact fluorescent lamps (CFLs) has dropped considerably, both overseas and in Australia, and the range of lamps available has also increased. Self-ballasted CFLs provide a good energy efficiency solution for the replacement of general service incandescent lamps.

Early fluorescent lighting systems used a single phosphor coating inside the lamp and produced a cool white light. With the development of more efficient 'tri-phosphor' coatings came smaller compact fluorescent lamps with light outputs rivaling those of incandescent lamps of similar size. The three phosphors produce light in the red, blue and green regions of the visible spectrum, giving white light when blended together. By changing the relative balance of these phosphors, manufacturers can produce CFLs in a range of apparent colour temperatures from a cool 4100K (degrees Kelvin) to a warm 2700K. Incandescent lamps have a colour temperature of about 2900K.

The Colour Rendering Index (CRI) of a lamp reflects how accurately the colour of an object can be determined under a given light source. Compact fluorescent lamps typically have a CRI of 82 (out of 100), which is considered excellent for fluorescent sources and good for artificial light in general. Components of a typical CFL consist of a gas filled glass tube with two electrodes mounted in an end cap. It contains a low-pressure mix of argon gas, mercury vapor and liquid mercury and is coated on the inside with the three different phosphors. The electrodes provide a stream of electrons to the lamp and the ballast controls the current and voltage flowing into the assembly.

Since November 2009, self-ballasted CFLs were required to comply with MEPS which are set out in AS/NZS 4847.2. This standard specifies MEPS requirements and related attributes for self-ballasted CFLs with integrated means for controlling starting and stable operation that are intended for domestic and similar general lighting purposes. It applies to self-ballasted lamps of all voltages and wattages irrespective of the type of lamp cap.

The intention of MEPS for CFLs is to ensure that quality CFLs are available in the Australian market and remain a viable alternative for inefficient incandescent lamps. The test procedures are set out in AS/NZS 4847.1. This standard specifies a holistic test method for the performance of electronic self-ballasted CFLs. The IEC is currently working on updating IEC 60969 (the new draft of which is based on AS/NZS 4847.1) and, when complete, it is expected that the IEC standard will replace AS/NZS 4847.1.

As part of the overall MEPS requirements, there are several important performance specifications for CFL attributes, including:

- > Starting time
- > Run-up time
- > Premature lamp failure rate
- > Low temperature starting
- > Lamp life
- > Colour attributes
- > Mercury content

In order to conform to MEPS, the standard states that CFLs must comply with one of the following:

- > Model certification with AS/NZS 4847, which describes the required number of test samples and the statistical conditions for compliance;
- > Model certification with the Efficient Lighting Initiative (ELI). More information is available from [www.efficientlighting.net](http://www.efficientlighting.net);
- > Model certification with the Energy Savings Trust (EST) version 5 or version 6. More information is available from [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk).

There have been concerns on the mercury present in fluorescent lamps and standard AS/NZS 4782.3 sets out the test method for determination of mercury content in fluorescent lamps (including CFLs). This part of the Standard outlines a procedure for quantitative analysis of mercury present in fluorescent lamps that are used in general lighting service and which are covered within the scope of AS/NZS 4782.1 and AS/NZS 60901 (as well as AS/NZS 4847). The testing method specifies the procedures that can be used to determine accurately the mercury content in a fluorescent lamp in which mercury is introduced as the medium for discharge between the electrodes. The IEC is developing a test method for mercury determination, and it is expected that the IEC standard will replace this test method at a future date.

## Summary of Relevant Standards for Lighting

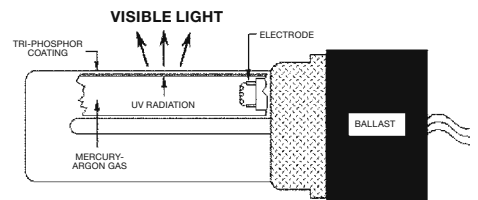
Test procedures and regulatory standards for these lamps are published by Standards Australia. The following parts are relevant:

- > AS/NZS 4934.1 Incandescent lamps for general lighting service – Test methods – Energy performance.
- > AS/NZS 4934.2 Incandescent lamps for general lighting services – MEPS requirements.
- > AS/NZS 4847.1 Self-ballasted lamps for general lighting services – Test methods – Energy performance.
- > AS/NZS 4847.2 Self-ballasted lamps for general lighting services – MEPS requirements.
- > AS/NZS 4782.3 Double-capped fluorescent lamps – Performance specifications, Part 3: Procedure for quantitative analysis of mercury present in fluorescent lamps (note this also applies to CFLs).

For further information contact **ESV** on 03 9203 9700 or [info@esv.vic.gov.au](mailto:info@esv.vic.gov.au).

<http://www.energyrating.gov.au/>

<http://www.climatechange.gov.au/en/what-you-need-to-know/lighting.aspx>



COMPONENTS OF COMPACT FLUORESCENT LAMPS

## Heritage boost for iconic Latrobe Valley coal dredger

THE ICONIC 700 TONNE NUMBER 21 DREDGER WHICH DUG BROWN COAL IN THE MORWELL OPEN CUT MINE FROM 1955 TO 1992 HAS RECEIVED A \$10,000 HERITAGE GRANT FOR CONSERVATION WORKS.

Minister for Energy and Resources Peter Batchelor said: "The Number 21 Dredger is one of the state's largest heritage objects. It is a key historical asset for the local community," Mr Batchelor said.

"It represents a time of great expansion of the activities of the State Electricity Commission of Victoria during the post-war years and it was included earlier this year in the Victorian Heritage Register, recognising its scientific and historical value to the State."

He said the grant would provide important conservation works for the Dredger.

"The Dredger represents a remarkable piece of engineering that operated in this area for almost 50 years and it is a well known piece of community infrastructure."

# New brochure warns households of the dangers of carbon monoxide

ESV'S NEW GAS SAFETY BROCHURE HAS THIS STARK MESSAGE: OWNERS AND TENANTS OF PROPERTIES WITH GAS HEATERS MUST BE AWARE OF THE POSSIBILITY THAT CARBON MONOXIDE (CO) IS PRESENT AND THAT IT IS DANGEROUS.

With an image showing a family enjoying the warmth of a properly and safely functioning gas wall heater, the new brochure has been prepared to alert households to the dangers of carbon monoxide.

The words "Beware Carbon Monoxide – it's a silent killer" and "Keep the Family Safe" complete the front cover of the brochure.

As the brochure points out, landlords and their agents have particular responsibilities under the Residential Tenancies Act 1997 to ensure gas appliances in rented accommodation are safe to use and properly maintained.

Tenants should also be aware of their responsibilities when it comes to the care and use of gas appliances, says the new publication.

The brochure continues: "It is mainly faulty, unserviced gas heaters which can cause carbon monoxide to be produced. If carbon monoxide spills into the room because of a range of issues including an obstruction in the flue terminal or inadequate building ventilation to the outside, carbon monoxide poisoning may occur.

"ESV and the Plumbing Industry Commission (PIC) strongly recommend that gas appliances be serviced regularly by a licensed or registered gasfitter before the start of winter at least every two years.

## What should be done to avoid carbon monoxide entering properties?

IT IS ESSENTIAL THAT ADEQUATE BUILDING VENTILATION TO THE OUTSIDE IS MAINTAINED TO ENSURE ADEQUATE AIR FLOW EVEN IF THE HEATER IS WORKING PROPERLY. DOORWAYS AND WINDOWS SHOULD NEVER BE SEALED UP, SAYS ESV'S NEW BROCHURE ON THE DANGERS OF CARBON MONOXIDE.

"Regularly check the colour of the flame in the heater. A blue flame burning within the heater is normally an indication of a good flame and that the heater is working properly.

"A yellow or sooty flame indicates a faulty heater – apart from appliances where yellow flames are deliberately used as a decorative effect.

"Look for the following visible warnings that problems exist:

- > soot or discolouration around the gas appliance;

"If a person is exposed to a large amount of carbon monoxide for a long period, that person may die from carbon monoxide poisoning.

"While there have been a number of deaths from CO poisoning in Victoria in the last few years, ESV is also aware of countless near misses where people have nearly died from carbon monoxide poisoning."

The new brochure together with new television and radio commercials focussing on the dangers of carbon monoxide have been prepared as part of an extensive programme of communications and other activities initiated by ESV and PIC.

The initiatives have been developed following the deaths of the two young boys at Mooroopna near Shepparton earlier this year and the alarming near misses reported fully in the last issue of **energysafe**.

A new DVD for the gasfitting trades showing how gas appliances should be serviced is also being prepared. It is proposed the production should be finalised next year.

Copies of the new brochure are available from ESV.



- > yellow flame;
- > heater goes out after a short time for no apparent reason;
- > debris falling down the flue pipe; and
- > missing or damaged cowl on the top of the flue pipe.

If property owners and tenants have any concerns about the adequacy of the ventilation in their homes they should arrange an inspection by a registered or licensed gasfitter. Alternatively call ESV on 1800 65 563 or the Plumbing Industry Commission (PIC) on 1300 815 127.

The gasfitter who services the appliance must have a carbon monoxide (CO) analyser / detector that has been calibrated correctly in the required time frame to detect CO. The CO reading must be less than 10 parts per million (ppm).

### Advice for landlords

The Residential Tenancies Act 1997 requires a landlord to ensure that rented accommodation is maintained in good repair.

"Good repair" includes all gas appliances provided by the landlord. They must be safe to use and properly maintained.

## What are the symptoms of carbon monoxide poisoning?

EARLY CARBON MONOXIDE (CO) POISONING SYMPTOMS INCLUDE TIREDNESS, SHORTNESS OF BREATH, MILD HEADACHES AND NAUSEA, SAYS ESV'S NEW BROCHURE ON THE DANGERS OF CO.

It explains:

When CO poisoning gets worse, people may experience:

- > severe headaches;
- > dizziness;
- > weakness and sleepiness; or
- > nausea and vomiting.

If the poisoning is extreme, it may lead to confusion, loss of consciousness and death.

Loss of consciousness can occur quickly.

Some people are especially sensitive to CO. This includes people with:

- > heart disease;
- > anaemia;
- > young children;
- > unborn babies; and
- > the elderly.

It is very important to note that small children are more susceptible to CO poisoning than adults.

Symptoms may occur when using or immediately after using a gas appliance. Doctors should be alerted when CO poisoning is suspected. Tests can be conducted but they need to be done quickly after exposure to CO so that it registers on the results. A pattern of symptoms in more than one person is a very strong warning of CO poisoning.

## What are the dangers of carbon monoxide?

AS ESV'S NEW BROCHURE ON THE DANGERS OF CARBON MONOXIDE EXPLAINS: "IF THE PRODUCTS OF COMBUSTION FROM A GAS APPLIANCE INSTALLED INSIDE A BUILDING ARE DISPERSED TO THE OUTSIDE ATMOSPHERE AS THEY SHOULD BE VIA A SUITABLE, SOUND FLUE, THERE IS NOT A PROBLEM.

"The danger arises when large quantities of carbon monoxide are being produced during combustion and the flue products are not being dispersed to the outside atmosphere."

According to the brochure, flue products may not be dispersed to the outside atmosphere if:

1. The flue does not terminate outside the building;
2. The appliance heat exchanger is split;
3. The flue terminal of an open flued appliance is blocked; or
4. The flue is broken or blocked.

The danger is highly accelerated when the carbon monoxide is spilling into:

- > A bedroom or caravan where all the door and window openings are tightly sealed.
- > A confined space such as a toilet or bathroom where people spend some amount of time.



# Your questions on gas installation issues – and the answers

Compiled by the **ESV Gas Installations and Appliance Safety team**

**As promised in the last issue of energy**safe**, this time we are pleased to provide answers for an extended range of frequently asked questions received on the ESV 1800 652 563 gas technical helpline. The feature on electricity installation question and answers has been a popular part of the magazine for some time and we are hopeful that this gas equivalent will become equally popular among plumbers/gasfitters.**

Question	Answer	Standard	Clause
Can I install a gas space heater in a bedroom?	A gas space heater installed in a bedroom or a bathroom shall be: > a room sealed heater; or > an open flued heater fitted with a flame safeguard system.	AS 5601-2004	Clause 5.12.8 5.12.8.1
Am I required to fit an isolation valve at each appliance on a new commercial installation?	Yes. A means of isolation, as required by Table 5.2, shall be provided on the inlet connection of an appliance. The means of isolation shall be accessible for operation. Table 5.2	AS 5601-2004	Clause 5.6.3
Does an appliance require a means of disconnection at the appliance?	Yes. The appliance connection shall include a means of disconnection. Where a means of isolation is provided to satisfy Clause 5.3.6, the means of disconnection shall be at the outlet of the means of isolation.	AS 5601-2004	Clause 5.6.4
What is an atmospheric burner and where would you find one?	A burner is a device that positions a flame in the desired location. An atmospheric burner is a system where all the air for combustion is introduced by the inspirating effect of the gas or the natural draught in the combustion chamber or a combination of the two without mechanical assistance. Atmospheric burners are commonly found in space heaters and wall furnaces.	AS 5601-2004 (Index under burner, see Atmospheric burner)	Clause 1.4.14.1 page 9
What are the characteristics of a 'room-sealed appliance'?	Room-sealed appliances are designed such that air for combustion or combustion products are not able to enter into the room in which the appliance is located.	AS 5601-2004 (Index under appliance, see Room Sealed Appliance)	Clause 1.4.3.9 page 8
How is a Type B Appliance defined?	Type B appliances cover all appliances with a gas consumption in excess of 10 MJ/h and for which a certification scheme does not exist.	AS5601-2004 (Index under Appliance Type B)	Clause 1.4.3.2 page 7
Can I use UPVC to AS/NZS 1260 for a flue?	Yes, but only for low temperature flues, not exceeding 60 °C. There is no requirement for a protective finish and there are no limitations on this material.	AS 5601-2004 (refer to Table 3.2, pages 35–37)	Clause 3.2.6 page 25 and 5.13.2 page 93
In situations where an additional appliance is required to be added to an existing consumer piping system what three items need to be checked prior to commencing work and why?	Prior to connecting an additional appliance to an existing consumer piping system you must check the existing piping, the meter and the regulator to ensure that adequate capacity is available to accommodate the additional load.	AS 5601-2004 Appendix F (page 147)	F3 Existing Consumer Piping Systems
If I install an appliance in a residential garage, what restrictions should I be aware of?	Where an appliance, other than a room-sealed appliance, is to be located in a residential garage, all of the following shall apply. > The appliance is to be installed with: > The burners, including pilots, and combustion air intake to the appliance at least 450 mm above the floor. > A rigid permanently fixed non-combustible vapour-proof wall at least 450 mm high. The wall is to surround the appliance and have sufficient clearance to allow an adequate supply of combustion air and access for servicing. > A warning notice stating: NAKED FLAMES – DANGER FLAMMABLE VAPOUR NOT PERMITTED WITHIN 3 METRES OF THIS APPLIANCE This warning is to be affixed in a prominent position adjacent to the appliance or appliances.	AS 5601-2004 (Index, see under Application Location)	Clause 5.3.10 page 70

# Important Safety Alert for Gasfitters – check open-flued IGWHs

**ESV ALERTS GASFITTERS THAT ALL OPEN-FLUED INSTANTANEOUS GAS WATER HEATERS (IGWHs) IN TOILETS, BATHROOMS, BEDROOMS OR SLEEPING AREAS MUST BE CHECKED TO ENSURE THAT THEY MEET THE REQUIRED CONDITIONS TO REMAIN IN OPERATION. THE CONDITIONS TO BE MET FOR AN OPEN-FLUED IGWH TO REMAIN IN OPERATION ARE GIVEN BELOW.**

**Note:** Open-flued IGWHs in a confined living space can expose gas users to the risk of carbon monoxide (CO) poisoning. Gasfitters are uniquely placed to help in removing this risk.

This important safety alert supersedes previous safety alerts and warnings issued by ESV and ESV's predecessor, the Office of Gas Safety (OGS), after the death of a young woman in March 2003 in a Housing Commission home. This safety alert is not limited to any particular housing type or ownership and covers all installations in Victoria.

What should I do if I find an open-flued instantaneous gas water heater in a toilet, bathroom or sleeping area?

Determine when the open-flued IGWH was installed. If the unit was installed after 1 November 2003, the installation is illegal and must be removed. Advise the gas user that the appliance installation is illegal and of the hazard of using such an appliance. Explain that you are required by law to take all steps to make the installation safe and notify ESV. Take all reasonable steps to isolate the gas supply to the open-flued IGWH and notify ESV.

If the open-flued IGWH was installed prior to 1 November 2003:

> Explain to the gas user and the gas owner (if this is not the same person) the dangers and symptoms of CO poisoning and the possibility that their open-flued IGWH may produce CO. Provide the gas user / owner with the ESV brochure "Beware Carbon Monoxide. It's a Silent Killer. Keep The Family Safe". There are details on the new brochure in this issue.

> Inform the gas user/owner that:

> ESV strongly recommends that the open-flued IGWH be replaced.

> \$500 is being offered by ESV to provide financial assistance to health and pension card holders towards replacing their open-flued IGWH.

> Their open-flued IGWH must be urgently checked to determine whether the required conditions are being met for their installation to remain in operation.

> There will be costs for such a check and additional costs if any repair work needs to be carried out following the findings from the check.

> If checks show that their installation is satisfactory, six monthly servicing of their open-flued IGWH must be carried out.

> Determine whether the gas user / owner wants their open-flued IGWH checked.

> If no, explain that you are required by law to take all steps to make the installation safe and notify ESV. Take all reasonable steps to isolate the gas supply to the open-flued IGWH and notify ESV.

> If yes, organise a time as soon as practicable to carry out the checks. This must be within the next month.

> If the checks are carried out and it is found that the open-flued IGWH *does not meet* the required conditions for it to remain in operation then advise the gas user / owner of the repair costs to make the installation comply and advise them again of the fact that six monthly servicing of the open-flued IGWH must be carried out.

> *If the gas user / owner agrees* to have all the repairs carried out in the next month, ensure that all the necessary repairs are carried out satisfactorily in the next month.

> *If the gas user / owner does not agree* to have all the necessary repairs carried out in the next month, explain to them that you are required by law to take all steps to make the installation safe and notify ESV. Take all reasonable steps to isolate the gas supply to the open-flued IGWH and notify ESV.

> If the checks are carried out and it is found that the open-flued IGWH *does meet* the required conditions for it to remain in operation then advise the gas user / owner again that six monthly servicing must be carried out.

## Conditions to be met for an open-flued IGWH to remain in operation

> The flue must be complete, in good condition and unobstructed.

> If the flue cowl is fitted with bird-proof mesh, the mesh must be in good condition and unobstructed, otherwise the cowl must be replaced.

> Flue integrity and effectiveness must be confirmed. Refer to ESV's Gas Information Sheet No. 28, 'Confirming flue integrity and effectiveness'. See ESV's website at <http://www.esv.vic.gov.au/Portals/0/Gas%20Professionals/Files/Information%20sheets/28ESVConfirmingflueintegrityandeffectiveness.pdf>.

> Fixed ventilation complies with AS 5601-2004.

> IGWH must be in good working order under all types of running conditions, i.e. with doors and windows open or closed and any exhaust fans operating or not operating.

What action has ESV and ESV's predecessor, OGS, taken so far?

> We have previously warned gasfitters not to install a new or replacement open-flued instantaneous gas water heater in a toilet, bathroom, bedroom or sleeping area. These installations were originally prohibited by the Gas & Fuel in 1985.

> We have offered financial assistance to health and pension card holders to replace their existing open-flued IGWHs since 2003.

**If you need more information on this important matter, please contact ESV on 1800 652 563.**

## Victoria to have the largest solar power station in Australia

**VICTORIA IS SET TO HAVE THE LARGEST SOLAR POWER STATION IN AUSTRALIA WITH THE VICTORIAN GOVERNMENT COMMITTING \$100 MILLION TO A NEW LARGE-SCALE SOLAR DEVELOPMENT NEAR MILDURA.**

The Premier Mr Brumby announced in October that the Victorian Government would back a bid by energy company TRUenergy to develop a major new solar plant south of Mildura with \$100 million for renewable energy generated.

Mr Brumby said TRUenergy's proposal to build the Mallee Solar Park would create 200 new jobs in construction and 20 ongoing jobs, deliver 345 gigawatt hours of clean electricity each year and generate enough power to run 60,000 homes each year.

"The TRUenergy proposal will utilise world's best-practice to create jobs in regional Victoria, cement the northern part of our State as a key solar energy region in Australia and will make a valuable and lasting contribution to our clean, green energy supply," he said.

Under the proposal a photovoltaic plant will be built on a 600 hectare site with construction to be undertaken in four stages between 2012 and 2015.

**DON'T FORGET TO TELL US WHAT YOU WOULD LIKE TO SEE IN ENERGYSAFE. CONTACT US BY FAX AT (03) 9686 2197, OR BY EMAIL AT [INFO@ESV.VIC.GOV.AU](mailto:INFO@ESV.VIC.GOV.AU)**



# One man's waste is another man's treasure!

by **ESV Gas Safety Officer, Roger Lambie**

**THERE IS AN OLD SAYING THAT ONE MAN'S WASTE IS ANOTHER MAN'S TREASURE. THAT'S POSSIBLY WHY PEOPLE FLOCK TO GARAGE SALES AND TRASH AND TREASURE MARKETS AT WEEKENDS.**

The idea of obtaining that bargain or even a hidden treasure is becoming very popular to the point that some recycling stations are now collecting old wares that can be decorated to appeal as a novelty or feature say in a back garden.

Bargains and treasures as such are fine, but where old or discarded gas or electrical appliances or components are obtained for reuse then due caution needs to be taken particularly with appliances or components that have no certification or approval labels attached. In some cases caution has to be taken even with those appliances that do display them!

ESV was recently alerted by a retired boiler maker who had concerns that a recycling depot was selling what appeared to him to be an unapproved LP Gas regulator.

This report was investigated by an ESV inspector and it was found that the recycling depot had received approximately 250 of these dumped regulators that bore no certification badges or in this case did not have screwed connections for attaching to an LPGas cylinder and only had a hose barb connection as the outlet of the regulator.

What might appear to be a money spinner complete with packaging etc is something else entirely – basically an untested, unproven and possibly an unsafe device that coupled with LPGas should it leak, that expands 270 times from a liquid to a vapour that is heavier than air at 0.6 specific gravity and which could prove to be quite dangerous.

Without putting too fine a point on it, under the wrong circumstances it could injure or even prove fatal to the operator. It is therefore not the bargain anyone is looking for!



Certified/Approved appliances that have seen many years of use will not last forever particularly where subjected to high temperatures.

Space heaters, wall furnaces and central heating units fall into this category simply due to the fact that they are intended to provide heat to a given space.

These three appliances in most cases incorporate a circulating fan to disperse this heat, where the fan may become clogged with lint or may slow in its designed RPM the heat within the appliance will intensify possibly causing metal fatigue and loss of insular attributes, servicing/maintenance of an appliance of this type is most critical and should be carried out at least every two years.

Certified/Approved appliances can also be the subject of an order/recall to be modified to offset an evident design or installation fault. Appliances picked up off the front nature strip, a recycling depot or a second hand dealer will require the greatest caution possible prior to any reinstallation. Advice is available through ESV or a competent registered plumber/gasfitter who will then take responsibility for the reinstallation of the appliance.



THE LP GAS REGULATOR AND ITS PACKAGING.

## Sizing a gas fitting line

By **ESV Gas Safety Officer, Roger Lambie**

**FOR ANY GAS APPLIANCE TO WORK AT ITS MOST EFFICIENT THE GAS SUPPLY TO THE APPLIANCE IS TO MEET THE DESIGNED OPERATING PRESSURE AND VOLUME THAT THE APPLIANCE REQUIRES.**

A lot of emphasis is placed on the operating pressure when in fact the volume of supply is so critical to the overall performance of the appliance and its efficiency.

The same flowing pressure can be applied to varying sized pipes of any material but the volume of gas emitting from each individual pipe will be different.

As depicted in the image the common drinking straw can have the same pressure flow as a section of 100 mm pipe but the volume will be vastly different

What basic information is required when using the pipe sizing tables in AS5601?

1. What material is the fitting line?
2. What is the pressure drop?
3. What is the type of gas NG or LPG?
4. What is the maximum load in MJ/h of all the appliances served by the fitting line?

Method of sizing fitting line:

1. Sketch a plan of the fitting line layout.
2. Detail the length in metres of each section of the fitting line.
3. Nominate a letter of the alphabet to each intersection or junction of fitting line and to every location of the installed appliances. Start with the letter "A" at the location of the gas meter.

4. Determine the main run. AS5601-2004 Page 148 Clause F6.2

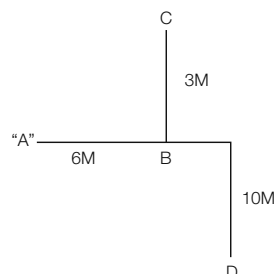
*"The main run is the length of consumer piping from the meter to the furthest appliance location. The main run is a critical measurement that will be used throughout the pipe sizing calculations."*

5. The **same main run length** in metres is used in **all** calculations when pipe sizing any installation.

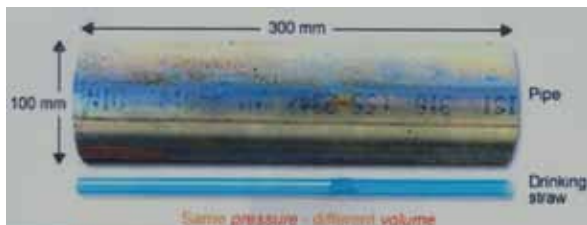
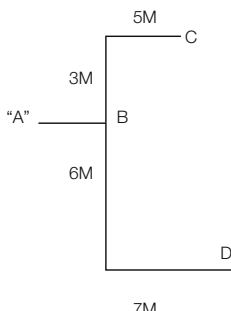
6. Where the main run length does not equal any of the stated "Length of straight pipe in metres" on any of the sizing tables go to the next largest length stated. i.e. Table F2 on page 153, AS 5601-2004. A pipe length on a given job is 32M go to 35M.

Where a gas meter is not located at the head of the installation and the fitting line may run in more than one direction **ALWAYS** determine the longest run and use that in **all** your calculations.

Meter at head of Installation:



Meter in middle of Installation:







PIC LICENCE NUMBER

Information to be supplied by persons seeking acceptance of a gas installation

**PREMISES**

- Residential
- Commercial
- Industrial

**Residential Information**

- 6 - 10 Storeys above the Ground
- Where Type B appliance has been installed

**Commercial Information**

- Hospital / Aged Care
- School / Training Centre
- Day Care Centre Children
- Correctional Facility
- Restaurant
- Shopping Centre (incl Food Court)
- Retail (i.e. Shop)
- Place of Assembly (Church)
- Hotel / Motel / Backpackers etc.
- Community Services Buildings
- Mobile Installation (e.g. catering)
- Marine Craft not "in Survey"
- Gymsnasiums
- Caravan Parks
- Commercial Building
- 6 - 10 Storeys above the Ground

**Fuel Type**

- Natural Gas
- LPG
- Bio / Other
- Gas / Air / Oxy mix

**Fuel Conversion**

- FROM
- Natural Gas
- LPG
- TO
- Natural Gas
- LPG
- Other (specify)

**Consumer Piping Material**

- Natural Gas
- LPG
- Other (specify)

**Metering / Supply Pressure**

- 0 kPa - 2.75 kPa
- 2.76 kPa - 7 kPa
- Exceeds 7 kPa

**APPLIANCES**

- Consumer Piping Only?
- Yes
- No
- If Yes, go to OTHER

**Type A (General)**

- Cook Top
- Free Standing Cooker
- Oven
- Refrigerator
- Griller / BBQ
- Room Heater
- Wall Furnace
- Decorative Log Fire
- Central Heater
- Radiant Tube Heater
- Radiant Heater
- Patio Heater
- Laundry Dryer
- Hot Water System (Cont)
- Hot Water System Inst
- Hot Water System Storage
- Pool / Spa Heater

**Flueing**

- Natural Draft
- Power Flue
- Power-Balanced Flue
- Combined
- Unflued
- Canopy

**Ventilation**

- Natural Direct
- Mechanical
- Natural Via another Room
- Combined

**Protection of Combustible Surfaces**

- A/c Combustible Surfaces Present? (i.e. Timber wall behind cooking equipment)
- Yes
- No

**Fire Protection Systems**

- Is there a Sprinkler System present in the building?
- Yes
- No

- Yes - Appliance Not Affected when Fire Equipment Operates
- Yes - Appliance Shuts Off when Fire Equipment Operates

**OTHER**

- Volatiles Present? (including Dust)
- Yes
- No

**Submeter Present?**

- Yes
- No

**Other Plumbers?**

- Involved with Gas Works
- Yes
- No

Statement of Compliance in Relation to a Gas Installation

**INSTALLATION DETAILS**

Client Name

Installation Address

Suburb  State  Post Code

**Schedule 10**

Section 73  
Regulation 31(5)

**START WORK NOTICE**

**CERTIFICATION**

By signing my name below, I certify that I am the person named below and that I understand that it is an offence to provide false or misleading information to Energy Safe Victoria under section 117 of the **GAS SAFETY ACT 1997**.

Signature

Date (ddmmyy)

Print Name

PIC Licence Number

**Schedule 11**

Section 73  
Regulation 31(6) and 33(3)

**COMPLIANCE NOTICE**

**CERTIFICATION**

By signing my name below, I certify that I am the person named below and that I understand that it is an offence to provide false or misleading information to Energy Safe Victoria under section 117 of the **GAS SAFETY ACT 1997**.

ESV JOB NUMBER (if previously issued)

Signature

Date (ddmmyy)

Print Name

PIC Licence Number



ELECTRICAL SAFETY  
**DO NOT WORK  
“LIVE”**

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.