

energy

Bulletin

ISSN 1323-8957

• In this issue...

- Overview of activities 2006-07 2
- Operational work including compliance enforcement activities 2
- Summary of prosecution action for breaches of electricity related legislation 4
- Summary of prosecution action for breaches of gas related legislation 4
- Major policy work 5
- Safety statistics: Serious accidents and fatalities 6
- Serious electricity related accidents' notified per million population 6
- Serious gas related accidents notified per million population 7
- Corporate Activities 7

Electrical Focus 8

- New edition of Wiring Rules released 8
- Electrical safety alert – Dangerous fuse bases 9
- Caution when installing down lights 9
- EnergySafety audits of electrical contractors and air conditioner installers 9
- EcoSmart Electricians 10
- Accreditation to install photovoltaic systems 10
- Prosecutions for breaches of electricity legislation 11

Gas Focus 13

- Submission of Completion Notices 13
- Illegal and dangerous water heater installation 13
- Testing for gas leaks 14
- Variations and exemptions on website 14
- Changes to Australian Standards 14
- Compliance with revised Standards 15
- New edition of AS/NZS 1425:2007 15
- Prosecutions for breaches of gas legislation 16

New energy powers to safeguard consumers

Laws providing stronger powers of enforcement for safety standards came into effect with the proclamation of the *Gas and Electricity Safety Legislation Amendment Act 2007* on 30 November 2007.

The Act amends the existing energy legislation and contains a number of improvements that will ensure the regulatory framework continues to provide adequate protection for the community given the changes that have occurred within the energy sector.

The major amendments include:

- Substantially increasing the maximum penalties for breaches of the gas and electricity safety standards to \$50,000 for an individual and \$250,000 for a Corporation; and
- Increasing the order-making powers of inspectors when dealing with gas and electricity network problems and unsafe work practices, as well as potentially dangerous activities by any persons near electricity or gas infrastructure.

Although a competitive industry environment delivers benefits to consumers, the continuing increase in competition occurring in the gas and electricity industries does put financial pressures on electricity and gas network operators. A legislative framework is therefore needed to protect workers and the public from energy infrastructure hazards. These legislative amendments provide such powers to EnergySafety and ensure the necessary protection is in place.

I take this opportunity, on behalf of all at EnergySafety, to wish all our readers a safe and prosperous 2008.



ALBERT KOENIG
DIRECTOR OF ENERGY SAFETY

NEWSFLASH

Long awaited amendments to the *Electricity (Licensing) Regulations* were gazetted on 31 December 2007. They will come into effect on 1 July 2008.

Changes in the regulations, which were the subject of extensive industry consultation, will have significant impact on the electrical contracting industry, particularly in the way in which electrical installing work is notified.

Details of the changes in the regulations will be provided to industry in the next Energy Bulletin.

As part of providing this important information to industry, EnergySafety will also conduct a series of information presentations throughout the State. Details of times, dates and venues will be advised in this next edition of the Energy Bulletin.

EnergySafety



Overview of activities 2006-07

This report on activities overviews the work of EnergySafety during the financial year 2006-07.

Introduction

EnergySafety is Western Australia's technical and safety regulator for the electricity industry and most of the gas industry.

EnergySafety is a Division of the Department of Consumer and Employment Protection. Albert Koenig is the Executive Director of EnergySafety and has the statutory title of Director of Energy Safety.

EnergySafety comprises three Directorates:

1. Gas Directorate (previously Gas & Emergency Management Directorate);
2. Electricity Directorate; and
3. Business Services Directorate.

Its principal functions can be summarised as:

- administering electricity and gas technical and safety legislation and providing policy and legislative advice to the Minister and Government;
- setting and enforcing minimum safety standards for electricity and gas networks;
- enforcing natural gas and LP Gas quality standards;
- for the purpose of ensuring satisfactory billing of consumers by gas suppliers, administering the regulatory scheme that determines the "higher heating value" of natural gas in

distribution systems subject to the commingling (mixing) of gas from different sources;

- providing technical advice and support to the Economic Regulation Authority (ERA) and the Energy Ombudsman;
- at the request of the ERA or Energy Ombudsman, investigating the performance of electricity and gas network operators, particularly in respect of energy supply reliability and quality;
- setting and enforcing minimum safety standards for consumers' electrical and gas installations;
- setting and enforcing safety and energy efficiency standards for consumers' electrical and gas appliances;
- licensing electrical contractors, electrical workers and gas fitters and carrying out accident investigations;
- promoting electricity and gas safety in industry and the community; and
- promoting energy infrastructure security and resilience.

EnergySafety derives most of its statutory functions through the statutory functions of the Director of Energy Safety, an independent statutory office (established 1 January 1995) that is held by the head of EnergySafety. Since its inception in 1995 as part of the first major restructuring of the State's energy utilities, EnergySafety has had a busy corporate life and has

seen its functions considerably expanded to include *inter alia* electricity and gas network regulation, energy efficiency regulation, natural gas higher heating value regulation and critical energy infrastructure protection.

As part of these changes, EnergySafety became fully industry funded from 2006-07 following the passing of legislation and the subsequent publishing in the *Government Gazette* of the *Energy Safety Levy Notice 2006* in June 2006. This mirrored what other major jurisdictions had also done and 2006-07 was the first financial year under which EnergySafety was fully industry funded.

The following highlights the work carried out by EnergySafety during 2006-07.

Operational work including compliance enforcement activities

Presentations to Autogas installers

EnergySafety conducted a series of industry awareness presentations to autogas installers, to alert them to problems caused by contaminants collecting in the autogas vaporiser of converted motor vehicles, affecting the safe operation of those engines. The presentations enabled EnergySafety to make public the findings of its investigations into the contamination caused by plasticisers

Continued over page

© Department of Consumer and Employment Protection 2007

ISSN 1323-8957

The Energy Bulletin is published by EnergySafety, a Division of the Department of Consumer and Employment Protection. It is distributed free of charge to licensed electrical contractors, in-house electrical installers, electrical inspectors, gas certificate holders, gas authorisation holders, gas permit holders and gas inspectors.

The Energy Bulletin may be downloaded free of charge from EnergySafety's website.

Articles in this publication may be reproduced, provided they are reproduced in full and show acknowledgement to EnergySafety.

Alternative formats of this publication may be available to meet the needs of people with disabilities.

For enquiries:

Editor: Harry Hills

Phone: 08 9422 5208

Fax: 08 9422 5244

Email: hhills@docep.wa.gov.au

Internet: www.energysafety.wa.gov.au

Continued from previous page

being extracted by the autogas from the flexible hose connections, causing some vapouriser/converter deterioration and failures. The presentations provided information to autogas installers on how they can prevent this problem occurring in existing converted vehicles. Appropriate measures will be introduced for all new autogas vehicle installations to prevent these types of contaminants forming.

Promotion of the safe use of gas appliances

EnergySafety, in conjunction with safety promotional initiatives of Alinta, participated in lifestyle shows on commercial television, to promote the safe use of gas appliances. The presentations focused on gas barbecues, particularly those used in alfresco areas. Lifestyle television shows have become popular with people seeking more leisure time and the safety messages prompted many inquiries about the safe use of gas appliances in general.

Audit of Western Power's wood pole management systems

In November 2006, EnergySafety released the outcome of its major compliance audit, commenced in 2005, into Western Power's wood pole management systems, designed to ensure poles are structurally safe for the duty imposed and ongoing service. Many non-compliances were found and EnergySafety is following up with Western Power on the specific issues required to be addressed. EnergySafety considers the remedial actions triggered by the audit will significantly improve community safety and electricity network performance.

Indian Ocean Territories inspections

Senior EnergySafety electricity and gas inspection staff carried out an inaugural visit to the Indian Ocean Territories under DOCEP's

Service Delivery Agreement with the Commonwealth Department of Transport and Regional Services (DOTARS). The purpose of the visit was to meet key stakeholders for Indian Ocean Territories, to advise of EnergySafety's services and to overview compliance with WA technical and safety legislation, such as licensing of electrical and gas workers, energy efficiency, appliance labelling, appliance approval etc. A program for future inspections was developed.

Unprecedented increase in demand for licensing services

The Licensing Office at EnergySafety experienced an unprecedented high volume of electrical and gas licence applications as a result of the sustained high level of industry activity throughout the State, triggering applications from persons from other states and from overseas. This resulted in delays in the processing of electrical and gas licence applications, restorations of expired licences and reapplications for gasfitting permits. The increase in workload was well managed by staff of the Licensing Office. Electrical and gas workers were requested, via Energy Bulletins, to avoid unnecessary telephone and email inquiries, as well as to ensure licence payments and notifications of changes of address were made on a timely basis.

Electrical licensing

At 30 June 2007, there were **26,477** electrical workers, **3,346** electrical contractors and **234** in-house licence holders registered.

The Electrical Licensing Board grants licences to eligible electrical operatives and conducts competency assessments of operatives where appropriate. Members of the Electrical Licensing Board as at 30 June 2007 were:

- Mr K McGill – Chairman
- Mr J Murie – representing the interests of electrical workers

- Mr P Beveridge – representing the interests of electrical contractors
- Mr G Grundy – representing the interests of electrical workers with restricted licences
- Mr D Retallack – representing the interests of large businesses, who are consumers of electrical services
- Mr P Mittonette – representing the interests of small businesses, who are consumers of electrical services
- Ms A Ciffolilli – a residential consumer of electrical services
- Mr D Saunders – nominated by the Director of Energy Safety

The Electrical Licensing Board met **23** times during the year.

Gas licensing

At 30 June 2007, there were **5,800** persons registered for gasfitting work.

The Gas Licensing Committee operates under delegated authority of the Director of Energy Safety and considers applications for licences for gas operatives. Routine applications are dealt with by licensing staff under delegated authority, as in the case of electrical licences.

The Gas Licensing Committee met **3** times during the year.

EnergySafety audits of electrical contractors and air conditioner installers

During the year, EnergySafety electrical inspectors commenced a program of carrying out audits of electrical contractors, air conditioner installers and appliance retailers.

The purpose of the audits is to identify departures from legislative requirements, in particular, the *Electricity (Licensing) Regulations 1991* and the *Electricity Act 1945*.

During these audits, electrical inspectors checked for compliance particularly in the following areas:

- Submitting Notices for electrical installing work;

Continued over page

Continued from previous page

- Maintaining a register of electricians;
- Supervising electrical apprentices;
- Displaying “EC” numbers on advertising material, which includes vehicles; and
- Displaying energy efficiency labels on appliances.

The main area of non compliance found was the non submission of Notices, particularly by air conditioner installers. Businesses to be audited are selected on a random basis. Electrical contractors or air conditioning installers with

a ‘chequered history’ are likely to be selected for audit. The audit program uncovered many breaches of legislation which have required further action including warning letters and prosecutions.

Variations and exemptions

The Director of Energy Safety, pursuant to regulation 32(2) of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*, issues variations and exemptions from requirements in standards, in response to requests from industry.

These variations/exemptions are available for various types of gas installations in Western Australia. The related gas installation must conform to the conditions imposed in the variation/exemption. During the year, 85 such requests for variations or exemptions were received, mostly in respect of requirements for industrial gas appliance installations. After careful consideration of the requests, decisions approving or rejecting the requests were conveyed to applicants.

Prosecutions

The following tables provide summaries of prosecutions finalised during 2006-07:

Summary of prosecution action for breaches of electricity related legislation

Legislation	Breach	Number of Offences	Fines (\$)	Court Costs (\$)
<i>Electricity Act 1945</i>	<i>Section 33(B)(2)</i>	18	6,400.00	2,484.20
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 19(1)</i>	5	8,000.00 *	2,453.50 *
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 33(1)</i>	2	750.00 *	475.70 *
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 49</i>	13	9,650.00 *	6,192.40 *
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 50(1)</i>	1	1,500.00	475.40 *
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 50A</i>	1	1,000.00	1,000.70
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 52(3)</i>	10	3,500.00 *	1,026.40 *
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 53(2)</i>	1	750.00	475.70
<i>Electricity (Licensing) Regulations 1991</i>	<i>Regulation 63(1)</i>	1	1,000.00	*
Totals		52	32,550.00	14,584.00

* Global Penalty (more than one offence)

Summary of prosecution action for breaches of gas related legislation

Legislation	Breach	Number of Offences	Fines (\$)	Court Costs (\$)
<i>Gas Standards Act 1972</i>	<i>Section 13A(2)</i>	2	450.00	1,329.15
<i>Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999</i>	<i>Regulation 8</i>	1	1,600.00 *	475.70 *
<i>Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999</i>	<i>Regulation 28(2)</i>	7	3,850.00 *	2,803.60 *
<i>Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999</i>	<i>Regulation 28(3a)(b)</i>	6	*	*
<i>Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999</i>	<i>Regulation 28(3a)(c)</i>	6	*	*
<i>Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999</i>	<i>Regulation 38(1)</i>	1	*	*
Totals		23	5,900.00	4,608.45

* Global Penalty (more than one offence)

Major policy work

Amendments to Part VIII of the Electricity Regulations 1947

Part VIII of the *Electricity Regulations 1947* dealing with the supply of electricity to consumers was amended in October 2006. The amendments removed many old regulations made redundant by the electricity reforms of recent years. They also made all operators of electricity supply networks responsible for carrying out inspections of consumers' electrical installations.

Infringement notices

EnergySafety introduced an infringement notice system late in the year to apply to many breaches of legislation that it administers. Infringement notices are a means for more efficient and lower cost compliance enforcement. For example, after an Inspector's Order or Defect Notice has been issued to an electrical contractor or gas fitter, EnergySafety can now decide if the alleged offender will be prosecuted in a Magistrate's Court or an Infringement Notice will be served. The Infringement Notice is much more efficient for low level offences.

New publication "Guidelines for Approval of Type A Gas Appliances"

A booklet to assist manufacturers, retailers, hirers and users who sell, hire or use Type A gas

appliances has been published by EnergySafety to explain why the appliances need to be approved. Type A gas appliances are mainly domestic or commercial gas appliances and are required by legislation to be approved. Such approval ensures that the appliances are safe and suitable for use in Western Australia. The booklet also explains the approvals processes that apply.

Standards development work

During the year, EnergySafety played a significant role in redrafting Australian Standards relating to electrical installations (AS/NZS 3000 Wiring Rules), electricity substations, marina electrical installations, gas installations, industrial gas appliances and gas distribution networks.

Committee participation

Aside from major work on several key technical standards committees, EnergySafety is involved in a number of national regulatory coordination and other technical standards bodies. The following is a summary list:

- National Regulatory Coordination Bodies
 - Electrical Regulatory Authorities Council (ERAC)
 - Gas Technical Regulators Committee (GTRC)
 - National Appliance and Equipment Energy Efficiency

- Committee (NAEEEC)
 - National Oil Supply Emergency Committee (NOSEC)
- National Standards Councils, Boards and Committees
 - Council of Standards Australia (representing the Government of WA)
 - Standards Accreditation Board
 - Electrotechnology Sector Standards Policy Board
 - Gas Technical Standards Council
 - AG6 Gas Installations
 - AG8 Gas Distribution
 - AG9 Natural Gas Vehicle Technical Standards
 - AG10 Specification for Natural Gas Quality
 - AG11 Gas Component & Industrial Equipment Standards Committee
 - CH-038 Liquefied Petroleum Gas
 - EL1 Wiring Rules and related sub-committees
 - EL2 Electrical Appliance Safety
 - EL4 Electrical Accessory Safety
 - EL11 Electricity Metering
 - EL42 Renewable Energy Power Supply Systems
 - EL43 High Voltage Electrical Installations
 - ME46 Gas Fuel Systems for Vehicle Engines.

Safety statistics: Serious accidents and fatalities

Serious electricity related accidents and fatalities

The following were reported to EnergySafety during the year:

Electric shocks:	929
Serious electricity related accidents ¹ :	22
Fatalities (included in serious electrical accidents):	5

Serious electricity related accidents¹ notified per million population

Year	Serious Electricity Related Accidents per Million Population	Five year average
1997-98	14	20
1998-99	21	19
1999-00	15	17
2000-01	11	15
2001-02	12	15
2002-03	16	15
2003-04	16	14
2004-05	23	16
2005-06	15	16
2006-07	10	16

Note: In the above table, some of the numbers of serious electricity related accidents notified per million population differ from the figures given in previous reports on activities. These corrections resulted from a comprehensive review of statistics of serious electricity related accidents notified.

¹ Electrical shock incidents resulting in the person requiring assessment and/or treatment at a medical facility

The serious electrical accident rate for the reporting period was ten serious accidents per one million population. While this represents a reduction from the previous reporting period, there has been an increase in fatalities. Further safety promotional activities are being planned.

The serious electricity related accidents included five fatalities in which electricity was found to be the cause:

- A tree lopper received a fatal electric shock when carrying out vegetation control work from the bucket of an elevated work platform. His pole-mounted chainsaw contacted 22,000 volt powerlines.
- An electrical contractor was electrocuted when he contacted a live cable junction in a roof space.
- A person was electrocuted when connecting hydraulic hoses to a hydraulic machine that was plugged into a 415 volt socket outlet. The active and earth conductors of the flexible supply cable were transposed at the plug-top and therefore the metal frame of the machine and conductive hydraulic hoses became live.
- A 14 year old person was electrocuted while dismantling a pedestal fan. He came into contact with exposed live terminals on the fan controller after he plugged the appliance supply cord into the electricity supply.
- A person was electrocuted by a home made device which was connected to his body. The electricity source applied to his body was derived from an electric arc welder with a measured AC open circuit voltage of 72.1 volts.

Gas related incidents and fatalities

The following were reported to EnergySafety during the year:

Incidents:	64
Serious gas related accidents (persons injured):	22
Fatalities:	3

Serious gas related accidents notified per million population

Year	Serious Gas Related Accidents per Million Population	Five year average
1997-98	5	7
1998-99	6	6
1999-00	4	6
2000-01	9	6
2001-02	13	7
2002-03	10	8
2003-04	9	9
2004-05	9	10
2005-06	8	10
2006-07	10	9

Note: In the above table, some of the numbers of gas related accidents notified per million population differ from the figures given in previous reports of activities. These corrections resulted from a comprehensive review of statistics of gas related accidents notified.

The gas accident rate for the reporting period was ten accidents per one million population, an increase over the previous reporting period.

The number of accidents includes three fatalities in which gas may have been the cause:

- A two burner LP Gas camp stove and LP Gas cylinder found under rubble (collapsed roof) after a house fire appeared to have been in use prior to or at the time the fire was initiated. The fire trapped a mother and her two children in the house and they subsequently died.

Corporate Activities

Industry funding for EnergySafety

During 2006-07, EnergySafety was for the first time fully industry funded through a combination of:

- a levy on electricity and gas distributors; and
- revenue from the licensing of electrical contractors, electrical workers and gas fitters.

This scheme came into effect on 1 July 2006, following passage of legislation in the preceding months. This new arrangement is a major improvement as it provides EnergySafety with a stable and predictable funding basis.

Transfer to portfolio of the Minister for Employment Protection

One of the final parts of the “Machinery of Government” initiatives of 2001 took place when EnergySafety and the legislation it administers were transferred from the portfolio of the Minister for Energy to the Minister for Employment Protection. This means that EnergySafety, which handles most of the technical and safety regulation of the State’s energy industry, is now reporting to the same Minister as WorkSafe and Resources Safety. EnergySafety continues to provide technical support to the Energy Ombudsman and the Economic Regulation Authority. As part of the changes, EnergySafety developed and agreed with the Office of Energy (which remains in the portfolio of the Minister for Energy) a Memorandum of Understanding on the administration of certain legislation and other functions which have areas of mutual interest.

New Electrical Licensing Board

A new Electrical Licensing Board was inducted during December 2006. Members are appointed to the Board for a three-year term by the Minister for Energy, following nominations from industry and the community. The structure of the board includes persons who have industry interests and others who have consumer interests. In particular, one board member must be a person representing the interests of residential consumers.

Office relocation for EnergySafety

Early in September 2006, EnergySafety (including the Licensing Office) relocated its Perth-based office from West Leederville to a new location at 303 Sevenoaks Street (corner Grose Ave), Cannington. The transition to this new location was carried out during one weekend and it was business as usual at the start of a new week. Telephone and facsimile numbers remained the same, so the disruption to normal business was minimal.

electrical focus

New edition of Wiring Rules released

The new edition of Australian/New Zealand Standard AS/NZS 3000:2007 "Wiring Rules" was released in November 2007.

The new edition is a 'must have' for electricians, electrical contractors, design consultants, inspectors, regulators, industry training bodies as well as manufacturers, importers, wholesalers and retailers of electrical equipment and accessories.

Prepared by the joint Standards Australia / Standards New Zealand Committee EL-001, the revised edition expands on issues relating to electrical installations, improves safeguards and addresses the needs and expectations of stakeholders through a concise and comprehensible two-part publication.

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

Changes in the new edition reflect the increasing use of residual current devices (RCDs) to all socket outlets and lighting circuits rated up to 20 amps for all types of installations. It also addresses restricting the number of circuits that can be connected to any one RCD and the required division of lighting circuits over RCDs.

Taking into consideration the experience gained through the application of the previous edition and a survey of the electrical

industry, this new edition flows more logically, is easier to understand, reinstates much of the supporting information omitted in the previous edition and contains more diagrammatic representations of concepts and more real-life examples.

The new edition, encompassing 450 pages, is now in a two-part format with improved layout:

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

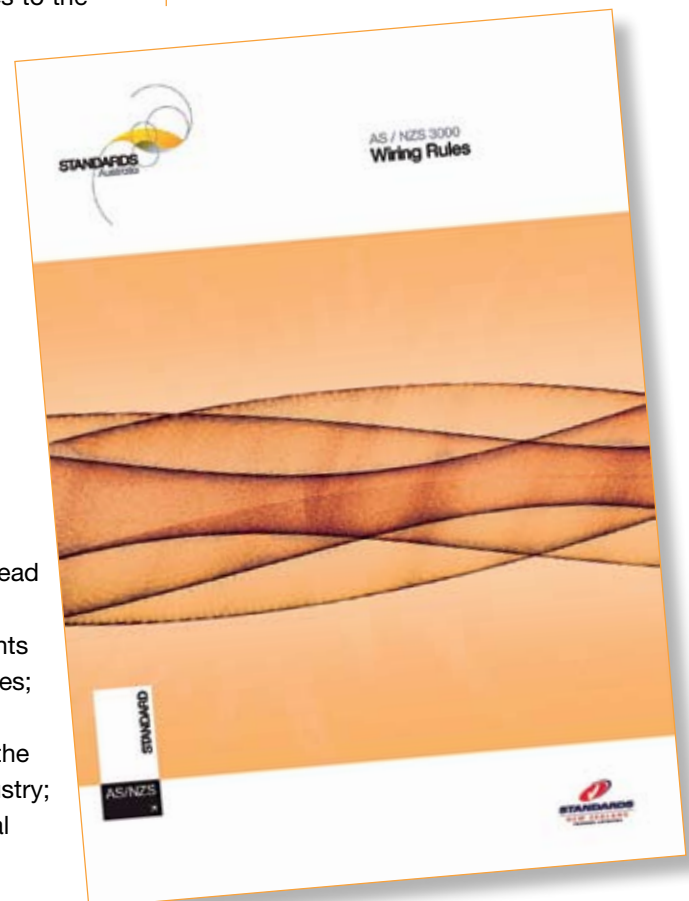
Some of the key changes to the Wiring Rules include:

- the extended application of residual current devices (RCDs) and testing for correct operation;
- protection against arcing faults;
- requirements for selectivity (discrimination) between circuits;
- strengthening of requirements for the prevention of the spread of fire;
- enhanced requirements for recessed luminaries;
- requirements for sanitisation areas in the food processing industry;
- inclusion of additional detailed guidance material;

- a more intuitive index; and
- additional appendices, illustrations and background information.

An introductory period of approximately six months from the date of publication will apply for the transition from the requirements of the "2000" edition to the new "2007" edition. The new edition will apply from 1 June 2008 at which time the "2000" edition ceases to have validity.

The new 2007 edition of the Wiring Rules will be available from SAI Global at www.saiglobal.com/shop or by telephoning 13 12 42.



Electrical safety alert – Dangerous fuse bases

Accessory manufacturer IPD Group Limited has advised industry of a batch of dangerous fuse bases.

Contamination in a batch of moulding powder lead to the lowering of resistance values in two of the moulded pieces for IPD's Series 7 fuse bases manufactured early in March 2007. The affected product was withdrawn from sale in August 2007.

The fuses are primarily used by network operators as a service protective device (meter fuse).

The manufacturer advises that independent testing of the affected batch has produced test results that show a higher leakage current than the Australian Standard AS 60269.1 allows. As a result, the perception limit has been exceeded but it is well below the let go limit of 5 mA outlined in the Standard.

Details of the affected products follows:

Batch Dates: March 2007-10-30

Part numbers:

- S71002ABWS
- S71002BBWAI
- S71002BFWAI
- QLDSERVICE-K* (S7102ABWS sold as a kit)
- DMP7 (panels utilise S71002ABWS)
- DMP8 (Panels utilise S71002ABWS)

Colour: Black only, bases

Sold between: 20 April 2007 to
20 August 2007

Any fuse base from the affected range must be replaced.

Extreme caution must be used when handling such fuses fitted between March and August 2007.

IPD Group Limited has advised its clients and placed notices in newspapers to alert industry to this dangerous product.

Technical related questions on this safety alert should be directed to IPD's Fusegear Product Manager Mr Michael Woods by telephoning (02) 9645 0717.



Caution when installing down lights

EnergySafety joins with other organisations (Western Power, Fire & Emergency Services Authority of WA) in again alerting electrical contractors and electricians to ensure that down lights and associated equipment are installed correctly and safely.

Across Australia, there have been many instances of fires in ceiling spaces caused by thermal insulation covering, or in close proximity to, down lights and associated ancillary equipment.

Down lights installed correctly are intrinsically safe provided the introduction of thermal insulation does not compromise that level of safety. Therefore bulk insulation must not be over, close to or around the lights or associated ancillary equipment (lamp holders, transformers) in a way that the lights or equipment cannot effectively dissipate generated heat.

Clause 4.5.2 of AS/NZS 3000:2007 provides clear information in relation to lighting equipment near thermal insulating materials and the minimum clearances required.



Fire damage caused by down light covered by loose fill insulation

EnergySafety audits of electrical contractors and air conditioner installers

EnergySafety electrical inspectors are continuing a program of carrying out audits of electrical contractors, air conditioner installers and appliance retailers during this year.

The purpose of the audits is to identify departures from legislative requirements, in particular, the *Electricity (Licensing) Regulations 1991* and the *Electricity Act 1945*.

During these audits, electrical inspectors are examining non compliances particularly in the following areas:

- Submitting Notices for electrical installing work
- Maintaining a register of electricians

Continued over page

Continued from previous page

- Displaying “EC” numbers on advertising material, which includes vehicles
- Displaying energy efficiency labels on appliances

The main area of non compliance is still the non submission of Notices, particularly by air conditioner installers. Each time this is exposed, the response is “I didn’t know” or “I don’t have time”. It might be a cliché, but ignorance of the law is no excuse. Action is being and will be taken, mostly in the form of a breach of Regulations 51 and 52 of the *Electricity (Licensing) Regulations 1991*.

To date, the audit program has uncovered many breaches of legislation which have required further action. This has resulted in warning letters being issued and prosecutions. More recently, Infringement Notices have also been issued.

Industry should recognise this article as a warning and take the time to ‘get their house in order’ and avoid the time impost, cost and embarrassment of prosecution.

EcoSmart Electricians

NECA WA (National Electrical and Communications Association of Western Australia) has announced its national training and accreditation program for licensed

electricians in energy efficient electrical products, technologies and installations.

The training course is designed to familiarise electricians with the latest regulatory requirements relating to energy efficiency, energy efficient products, technologies and installation issues. The course uses case studies and other tools to equip participants to be able to advise and market energy efficient solutions to customers, be they domestic, commercial or industrial.

The course consists of four compulsory modules totalling 20 hours:

- Energy Management
- Pumps, Fans and Motors
- Solar, Heating and Cooling
- Lighting

Electricians who successfully complete the course will be awarded with Energy Efficiency Certification under the program.

Electrical contractors employing these electricians become eligible for accreditation as an EcoSmart Electrician subject to them meeting the other accreditation requirements under the program.

The EcoSmart Electricians program is currently being held at NECA WA’s College of Electrical Training. For further information, telephone 9321 8637, email pprothero@eca.asn.au or visit www.neca.asn.au .

Accreditation to install photovoltaic systems

The Australian Government’s Photovoltaic Rebate Program provides cash rebates for the installation of solar photovoltaic systems to homes, schools and community-use buildings. The rebate has recently been increased to a maximum of \$8,000.

This may provide opportunities for suitably qualified electrical contractors to install solar photovoltaic systems.

Under the Photovoltaic Rebate Program, photovoltaic system installers must be accredited by the Business Council for Sustainable Energy.

Courses required to be completed for Business Council for Sustainable Energy accreditation are provided by TAFE. Central TAFE (East Perth Campus) is canvassing expressions of interest for candidates for a short bridging course to be held in December for electricians to acquire the units needed for provisional accreditation.

Further information on this program is available by contacting John Paskulich by telephone on (08) 6211 2267 or by email to john.paskulich@central.wa.edu.au .

Prosecutions for breaches of electricity legislation 1 July 2007 to 30 September 2007

Name (and suburb of residence at time of offence)	Licence No.	Legislation and Breach	Offence	Fine (\$)	Court Costs (\$)
Jeffery Ball (Waikiki)	NA	E(L)R Regulation 19(1)	Carried out electrical work without holding an electrical workers licence	1,000.00	475.70
Brian Dix (Gidgegannup)	EW 127736	E(L)R Regulation 49(1) (5 breaches)	Carried out substandard electrical work	4,500.00 *	480.70 *
Brian George Dix t/a Stoneville Electrical (Gidgegannup)	EC 004472	E(L)R Regulation 52(3)	Submitted a Notice of Completion when the electrical installing work was defective and therefore not complete	*	*
Christopher Fowler (Armadale)	EW 126407	E(L)R Regulation 49(1)	Carried out substandard electrical work	3,000.00	1,525.70
Kenray Enterprises Pty Ltd t/a Freeway Electrical (Wangara)	EC 002492	E(L)R Regulation 52(3)	Submitted a Notice of Completion when the electrical installing work was defective and therefore not complete	1,000.00	480.70
GJ Johnson & Co P/L t/a G J Johnson & Co (Fitzroy Crossing)	EC 000104	E(L)R Regulation 51(1)	Submitted a Preliminary Notice to relevant supply authority within the required time frame	700.00 *	1,520.70 *
GJ Johnson & Co P/L t/a G J Johnson & Co (Fitzroy Crossing)	EC 000104	E(L)R Regulation 52(3)	Submitted a Notice of Completion when the electrical installing work was defective and therefore not complete	*	*
Archie James (Wagin)	EW 100362	E(L)R Regulation 49(1)	Carried out substandard electrical work	400.00	480.70
Timothy Lewis (Calista)	EW 143109	E(L)R Regulation 49(1) (6 breaches)	Carried out substandard electrical work	3,000.00	569.20 *
Timothy Lewis (Calista)	EW 143109	E(L)R Regulation 33(1) (2 breaches)	Carried on business as an electrical contractor without a licence	4,000.00	*
Owen Lowden (Forrestfield)	EW 118353	E(L)R Regulation 49(1) (9 breaches)	Carried out substandard electrical work	7,500.00	480.70
Brian Martin (Karrinyup)	EW 101761	E(L)R Regulation 53(2)	Employed and instructed an unlicensed person to carry out electrical work	600.00	775.70

Name (and suburb of residence at time of offence)	Licence No.	Legislation and Breach	Offence	Fine (\$)	Court Costs (\$)
Wayne Martinovich (Yokine)	EW 116895	E(L)R Regulation 19(1) (2 breaches)	Carried out electrical work without holding an electrical workers licence	1,000.00	775.70
David McEwan (High Wycombe)	EW 139485	E(L)R Regulation 50(1)	As an employer, failed to ensure effective supervision of an apprentice	750.00	480.70 *
David McEwan (High Wycombe)	EW 139485	E(L)R Regulation 63(1)	Failed to report an electrical accident	450.00	*
Dene Mosconi (Quinns Rock)	EW 124745	E(L)R Regulation 49(1)	Carried out substandard electrical work	3,000.00	480.70
Michael Rudd (Bute, SA)	EW 144239	E(L)R Regulation 33(1)	Carried on business as an electrical contractor without holding a licence	1,000.00	475.70
Kenneth Sibley (Alice Springs, NT)	EW 103536	E(L)R Regulation 49(1)	Carried out substandard electrical work	750.00	569.20
Uplands Nominees P/L t/a Ord River Electrics (Kununurra)	EC 005747	E(L)R Regulation 52(3)	Submitted a Notice of Completion to the relevant Supply Authority when the electrical installing work was defective and therefore not complete	750.00	569.20
Wayne Vicary (Merredin)	NA	E(L)R Regulations 19(1)	Carried out electrical work without holding an electrical workers licence	1,000.00 *	1,093.00 *
Wayne Vicary (Merredin)	NA	E(L)R Regulation 33(1)	Carried on business as an electrical contractor without holding a licence	*	*
David Waldock (Edgewater)	EW 131031	E(L)R Regulation 49(1)	Carried out substandard electrical work	1,000.00	480.70

Legend:

* Global fine and costs – more than one offence

NA Not applicable – no licence held

E(L)R Electricity (Licensing) Regulations 1991

Note: Offences where a conviction was recorded but a spent conviction order was issued are not shown in the above table.

g a s focus

Submission of Completion Notices

If you think you've read this before, you're right. But the problem persists and is still widespread. Please read on ...!

All gasfitting work on a consumer's gas installation requires a Notice of Completion to be duly completed and submitted to the gas supplier and the person requesting the work.

A compliance badge is also required to be fitted for work carried out on a gas installation.

Gas fitters are required to complete a Notice of Completion **in full**. Particular attention needs to be given to providing:

- the location of the installation;
- the name of the owner/occupier;
- the installation address; and
- details of the work carried out,

as well as:

- a fixed or mobile telephone number; and
- if applicable, an email address,

at which the gas fitter can be contacted.

Gas fitters who fail to submit a Notice of Completion and/or fail to fit a compliance badge will be initially subject to either an Infringement Notice or prosecution.

Gas fitters who continually fail to submit Notices may well in addition to a prosecution find themselves the subject of an application to the State Administrative Tribunal to have their gasfitting licences cancelled.

Gas fitters who are prosecuted for non submission of Notices can expect to see their details published in the prosecution list in the Gas Focus.

Illegal and dangerous water heater installation

EnergySafety was advised of an incident at the Kelmscott Senior High Farm School where an assistant sustained burns whilst attempting to relight a gas storage water heater after the LP Gas cylinders had been changed.

The assistant had relit the water heater on previous occasions. However, this time when he pressed the piezo igniter, a sheet of flame erupted from the base of the water heater, engulfing his face and arms.

A local gas fitter was contacted to check the water heater. The gas fitter isolated the area, tagged off the water heater and contacted EnergySafety.

Investigations conducted by EnergySafety revealed that this was a replacement water heater for the unit that was originally installed.

The gas connection to this water heater appeared to be a flared fitting. When the installation was tested for soundness, the fitting was found to be leaking. Undoing the flare nut revealed thread tape and no flare.

The person who installed this replacement water heater was obviously not a licensed operative and had left the LP Gas installation in an unsafe condition.

The incident highlights the consequences of leaking gas. In this incident, a person was injured while lighting the appliance. Had there been an undetected accumulation of gas, there may well have been a much larger explosion, causing a much larger fire and as a result serious injury or loss of life to students and others nearby.

As all gas fitting must be carried out by a licensed person, your assistance eliminating unlicensed

Continued over page



Fire damage to the water heater



Non compliant and dangerous connection to the appliance

Continued from previous page

gasfitting is needed. Therefore any defective or non-compliant gas installations found before commencing any rectification work must be reported to the gas supplier

And importantly, upon completion of any gasfitting work, always carry out a pressure test to ensure the gas installation is safe to use – see following article “Testing for gas leaks”.

Testing for gas leaks

Gas leaks rate very high on the list of non-compliances found during gas suppliers’ auditing of gas installations.

Regulation 26(1) of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999* requires a gas fitter to ensure that a gas installation is gas-tight before it is commissioned or recommissioned.

Using soapy water is not a sure-way of determining if there is a leak in a gas installation. A pressure test using a simple instrument, such as a water gauge or manometer, is the only proven method.

Any gas fitter who is found not to have ensured that a gas installation is gas-tight will be either issued with an Infringement Notice or prosecuted.

The Infringement Notice currently carries a penalty of \$400.00 and a prosecution could be substantially more. It is therefore much cheaper and less embarrassing to buy and use appropriate test equipment.

Variations and exemptions on website

The Director of Energy Safety, pursuant to regulation 32(2) of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*, may issue a variation and exemption in response to requests from industry for a part of a gas installation from complying with a specific requirement of an Australian Standard.

A list of generic and global variations and exemptions that have been issued are on EnergySafety’s website.

These variations/exemptions can generally be applied to gas installations in Western Australia.

The related gas installation must conform to the conditions imposed in the variation/exemption.

Each variation/exemption in the table is provided with a number when issued. A gas fitter who carries out a gas installation that applies one of these variations/exemptions is required to record this number on the compliance badge.

Changes to Australian Standards

Standards Australia has announced projects to revise some gas-related Standards, with the intention of publishing the revised standard during 2008.

AS 5601-2004

Australian Standard AS 5601-2004 “Gas installations” will be amalgamated with the New Zealand Standard NZS 5261-2003 “Gas installation”. The result will be a joint Australian New Zealand Standard.

The new Standard will have some significant differences when compared with the current edition AS 5601. These differences are expected to include:

- A changed scope;
- Introduction of a performance based section;
- A changed method of pipe sizing;
- Removal of Section 6 – LP Gas requirements for caravans, motor homes and marine craft;
- Publication of a separate Standard for LP Gas installations for non-propulsive purposes in caravans and boats; and
- Inclusion of a new section covering gas installations in high rise buildings.

AS 3814-2005

Australian Standard AS 3814-2005 "Industrial and commercial gas-fired appliances" is currently being revised.

It is expected that the revised Standard will have some significant additions, particularly in gas/air ratio control and gas turbines, compared with the current edition of AS 3814-2005.

Compliance with revised Standards

Where the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999* refers to Australian Standards, the reference applies to the latest (current) edition of the Standard.

Gas fitters must obtain a copy of the revised edition of a Standard as soon as practicable after it is published.

Compliance with a revised Standard where there are significant changes may be managed by a transitional period of six months from the date of publication of the revised Standard. Any transitional period will be advised in the Energy Bulletin.

New edition of AS/NZS 1425:2007

SAI Global has announced the publication of newly revised Standard, AS/NZS 1425:2007 "LP Gas fuel systems for vehicle engines".

This Standard gives designers, manufacturers and installers the technical requirements for LP Gas fuel systems. It specifies requirements for engines mounted on motor vehicles, either for the propulsion of the vehicle or for driving an auxiliary function, like a mixer or a pump.

The Standard provides requirements for the design

and construction of component parts and for their installation in vehicles. Requirements for tests, commissioning and periodic inspection are also specified.

New information in this edition includes:

- New requirements for valve materials and testing procedures;
- Simplified emission testing requirements.

Multiple container installations

One major change affecting conversions relates to the installation of multiple container installations. Clause 4.7 requires that automatic fuel shut-off devices (AFSODs) shall not be operated independently on a multiple container installation with a common fill point.

Should a vehicle with multiple fuel containers installed with separate electrically isolated AFSODs be presented to a workshop, it is recommended that this isolation be removed. If in doubt, the preferred method of connecting additional fuel containers is to have a separate fill point. This alleviates the possibility of overfilling what may be perceived as a reserve fuel container.

Appendix D "Procedures for Demonstrating Compliance with Exhaust Emission Standards" is simplified. No longer is there a need for the cold start test. This testing is mandatory for kit suppliers marketing certified kits to the conversion industry. The bulk of this work is undertaken in the Eastern States.

Heat shielding for fuel containers and gas service lines

In some vehicles, the fuel container and/or the gas service line are installed close to the vehicle's exhaust components (pipe, muffler and catalytic converter).

AS/NZS 1425 does not adequately address the heat

shielding requirements where the components are subjected to elevated exhaust temperatures – refer to Clauses 3.21 "Heat shielding (fuel containers)" and 4.5(f) "Fuel service line".

Where appropriate clearances cannot be achieved, a heat shield is to be fitted. EnergySafety recommends heat shielding be fixed to the vehicle body, not to any part of the exhaust system. Fixing to the exhaust system may compromise the safety and integrity of the gas installation.

Other related Standards include

AS/NZS 2739:2003 "Natural gas (CNG) fuel systems for vehicle engines – applies to all vehicle types including rigid chassis, articulated chassis and semi trailers and provides safe and functional installations for CNG fuel systems for motor vehicle engines, as well as requirements for design and construction of component parts and their installation, testing, commissioning and periodic inspection.

AS/NZS 3509:2003 "LP Gas fuel vessels for automotive use" – specifies requirements and tests for welded carbon steel LP Gas fuel vessels.

AS 4838-2002 "Gas cylinders – High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles" – provides manufacturers with material requirements for light-weight cylinders, together with details of installation and maintenance for the end users.

AS/NZS 1596:2002 "The storage and handling of LP Gas" – provides requirements for the location, design, construction and operation of installations for the storage and handling of LP Gas.

AS 2746-1999 "Working areas for gas-fuelled vehicles" – sets out guidelines for the premises and

Continued over page

Continued from previous page

procedures for converting and equipping vehicles to use LP Gas or Compressed Natural Gas as an engine fuel.

Gas forklifts must comply with Australian Standard AS 4983

Recent audits of gas forklift facilities by EnergySafety's Gas Inspection Branch have found that the some gas fitters carrying out gasfitting work on gas powered forklifts are

not applying the requirements of Australian Standard AS 4983 "Gas fuel systems for forklifts and industrial engines".

Regulation 36(3) of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999* requires that if a consumer's gas installation is a mobile engine that uses LP Gas or natural gas as fuel, the consumer must ensure that the installation is maintained and serviced by a registered gas fitter

with, in the case of a forklift mobile engine, AS 4983.

AS 4983 is also listed in Schedule 7 of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*. Schedule 7 lists the codes and Standards containing requirements for consumers' gas installations.

It is an offence pursuant to the Regulations for a gas fitter to not maintain and service a gas forklift in accordance with AS 4983.

Prosecutions for breaches of gas legislation 1 July 2007 to 30 September 2007

Name (and suburb of residence at time of offence)	Licence No.	Legislation and Breach	Offence	Fine (\$)	Court Costs (\$)
Victor Holloway (Bull Creek)	GF 000913	GSR Regulations 28(2), 28(3), 28(3a)(b), 28(3a)(c)	Failed to fit a compliance badge to the gas installation Failed to submit a Notice of Completion to the gas supplier Failed to give a copy of the Notice of Completion to the customer	750.00	480.70
Adrian Walker (Warwick)	GF 004887	GSR Regulations 28(2), 28(3), 28(3a)(b), 28(3a)(c)	Failed to fit a compliance badge to the gas installation Failed to submit a Notice of Completion to the gas supplier Failed to give a copy of the Notice of Completion to the customer	1,000.00	480.70
William Clarke (Perth)	GF 000694	GSR Regulations 28(2), 28(3), 28(3a)(b), 28(3a)(c)	Failed to fit a compliance badge to the gas installation Failed to submit a Notice of Completion to the gas supplier Failed to give a copy of the Notice of Completion to the customer	600.00	569.20
Stephen Britten (Mindarie)	GF 004984	GSR Regulations 28(2), 28(3), 28(3a)(b), 28(3a)(c)	Failed to fit a compliance badge to the gas installation Failed to submit a Notice of Completion to the gas supplier Failed to give a copy of the Notice of Completion to the customer	800.00	569.20
Rocknedin Medhat (Balcatta)	GF 009208	GSR Regulation 26(1)(a)	Failed to ensure a consumer's gas installation was gas-tight	750.00	569.20

Legend:

GSR Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999