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Office of **Energy**

Office of Energy Presents 10,000th Gas Licence

On 5 October 2000, gas fitter licence number GF 010000 was allocated to Mr Lewin (Lew) MacPherson of Alcoa World Alumina Australia. Mr Lewin was one of five Alcoa employees to be issued a licence on that day. He is a supervising gas fitter.

In recognition of such a milestone, arrangements were made for Lew to receive his licence from the Director of Energy Safety. ALCOA management arranged a reception at their Pinjarra Alumina Refinery for Lew and his wife Eileen to celebrate the occasion in the company of colleagues (see photograph on page 4).

The very first gas fitter licences – Certificates of Competency – were issued in the early 80s with the introduction of the *Gas Standards Regulations 1983*. This was the first time people in WA had to be formally licensed to carry out gasfitting work. Previously less formal, gas supplier operated schemes were used to ensure safety.

The major gas suppliers then were the State Energy Commission of WA (SECWA) for Natural Gas and Kleenheat Gas for LPG. In 1983 with the introduction of the first regulations, Kleenheat Gas' registration system was wound down and SECWA became the gas fitter licensing body for both NG and LPG.

A training program embracing the regulations was a prerequisite for industry workers to obtain a licence.

The Office of Energy now administers the licences previously issued by SECWA and issues all new gas and electrical workers' licences.

In 1999, after considerable industry consultation, new gasfitting regulations came into effect for the purpose of making significant improvements. New and more logically structured licensing classes were introduced, such as Class G for general gasfitting, Class E for automotive, Class P for automotive refuelling installations and Class I specifically for industrial gasfitting.

Certificates of Competency are now no longer issued or upgraded. The use of Permits and Authorisations was expanded so that they now form the core of the gas licence structure.

ALBERT KOENIG
DIRECTOR OF ENERGY SAFETY

Office of
Energy WA

Gas Inspectors' Code of Practice

When the Office of Energy commenced operations on 1 January 1995, a new system for the appointment of inspectors came into effect through changes in the legislation.

Since that time, all electrical and gas inspectors, whether employed by the utilities, the Office of Energy or operating independently, have been "designated" (or authorised) by the Director of Energy Safety or the Director's delegates.

Particular effort was made by the Office of Energy in 1995 and 1996 to consult with the gas industry about the inspection (or "approval")

of Type B (industrial) gas appliances. This resulted in the current scheme under which certain inspectors have been designated as Type B gas appliance inspectors. Some other inspectors have also been designated to approve reconditioned commercial gas appliances.

Hence although the majority of gas inspectors are still what may be termed "Installation Inspectors", other categories also exist and some individuals hold more than one function. Given this situation and an increasingly competitive industry environment, the Office of Energy has prepared a "Code of Practice" for gas inspectors, to assist them to better

understand their respective roles and certain options they may have at times. The Code also sets out how to avoid conflicts of interest, how to seek variations to standards and the like. It also makes them aware that their work is subject to audit by the Office of Energy.

A draft copy of the Code was recently mailed to all gas inspectors and gas utilities for comment. A final version will be issued to each late this year. It is expected that a similar document will be developed for electrical inspectors during 2001.

This example serves to demonstrate the increasing complexity and sophistication of our State's energy sector and that nothing stands still!

OFFICE OF ENERGY ACTIVITIES 1999-2000

This part of the Energy Bulletin focuses on the highlights and activities of the Technical & Safety Division of the Office of Energy during the period July 1999 to June 2000.

The information includes details of overall electrical and gas safety outcomes, which will be of general industry interest. Further details of the Technical & Safety Division's activities are available in the Office of Energy Annual Report 99/00, which is available via the agency's website.

Guidelines for the Design and Planning of Interconnected Gas Distribution Networks in WA

A working group of representatives from industry and the Office was established to develop these guidelines.

As the gas industry is opened up to competition, new network owners are able to set up discrete distribution networks that are connected to existing networks. The third-party access code provides for third parties to transport gas through covered pipelines, but guidelines were

needed to deal with interconnection issues between networks owned by different parties. The working group developed the guidelines to assist new network owners in planning, operating and obtaining a connection to an existing network.

These guidelines have been published.

Guidelines for the Application of Safety Instrumented Systems for Industrial Gas Appliances

These guidelines were prepared with the assistance of industry

specialists in instrumentation and process control systems. Based on industry codes where practicable, the guidelines outline recommended principles, procedures and safe practices for the application of Safety Instrumented Systems (SIS) to Type B gas appliances.

Safety Programs

"Turn on common sense...turn on safety" was the slogan chosen for an auto gas safety inspection campaign. The campaign, supported by the Royal Automobile Club, Transport WA



Vehicle queued O'Connor for a LPG inspection as part of the Office of Energy's Autogas Safety Campaign

and the auto gas installation industry, was conducted in several regional locations for owners of motor vehicles fitted with LPG fuel systems. The campaign focused on the correct installation of auto gas systems and the age and test date of LPG fuel containers.

Gas Standards (Gas Supply and System Safety) Regulations 2000

The development of regulations covering the technical and safety aspects of gas distribution (gas supply) was completed. The work was carried out in conjunction with a working group of representatives from AlintaGas, Origin Energy and Kleenheat Gas and included a comprehensive consultation process.

The regulations ensure:

- safety of the public, gas consumers and gas workers in the vicinity of gas distribution (gas supplier) assets; and that
- gas supplies conform to acceptable standards of quality and metering accuracy to protect all gas consumers.

The regulations were gazetted in July 2000.

Other Gas Distribution Issues

A paper on gas technical and safety regulation was also prepared and issued for public comment. The paper detailed proposed changes to the *Energy Coordination Act 1994* and the *Gas Standards Act 1972* to ensure the gas regulatory regime is suitable for the new gas industry environment and structure, including new gas distribution licence holders and a privatised AlintaGas. A forum was conducted to discuss comments received on the consultation paper and further consultation is planned prior to finalising the legislation.

Review of Gas Licensing Operative Applications

Following the introduction of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*, the Office undertook a comprehensive review of gas fitter licensing policies.

Working groups comprising representatives from industry, training providers and the Office of Energy were formed to assist this review, for each class of gasfitting:

Class G – domestic and small commercial

Class I – industrial installations

Class E – automotive (mobile engines)

Class P – automotive refueling.

Work is continuing to develop guidelines for training providers to embrace industry best practices, codes and standards as well as to ensure national consistency for each class of gasfitting. These guidelines will assist training providers to develop new training programs acceptable for licensing purposes.

Regulations for Electricity Transmission and Distribution

Regrettably no progress was made on this project as the electricity supply authorities continued to express opposition to regulation proposed by the Office of Energy. The form of regulation suggested by the Office is identical to that agreed with the gas supply industry as implemented earlier this year. This project is now almost five years old and the Office is therefore considering alternative means for developing regulations for the electricity supply industry.

Support was given to the development of a National Electricity Network Safety Code by the Electricity Supply Association of Australia (ESAA). This document is expected to be referenced in the proposed *Electricity (Supply Standards and System Safety) Regulations*.

Vegetation Near Power Lines

Readers may remember that there was extensive consultation with Local Government, the community and electricity suppliers on this issue in the period 1993 to 1995.

During 2000, there was some further progress on the drafting of proposed new legislation for the control of vegetation in the vicinity of overhead power lines, consistent with the outcome of the consultation process. However, the work could not be completed due to the demands of other legislation drafting.

Minimum Energy Performance Standards

Minimum Energy Performance Standards (MEPS) were introduced in May 2000 for some domestic electrical appliances through amendment of the *Electricity Regulations 1947*. MEPS aim to progressively eliminate from sale or hire highly inefficient appliances, thus leading to reductions in greenhouse gas emissions as well as savings in operating costs to consumers.

The standards initially require that new refrigerators, freezers and electric storage water heaters meet specific minimum energy efficiency performance levels that are consistent across Australia. The scheme involves testing to verify compliance with minimum energy efficiency benchmarks and registration of the appliance details on a national database.

The Office contributed to the National Appliance and



Lew MacPherson (pictured second from right) Supervising Gas Fitter of Alcoa World Alumina Australia, proudly displays his gas licence No. GF 010000 with Office of Energy staff, from left to right, Jillian Reynolds Principal Engineer Gas Installations & Appliances, Albert Koenig Director of Energy Safety and Peter Tuck Manager Regulatory Services

Equipment Energy Efficiency Program, under which the star rating label system for some electrical appliances was modified to reflect energy efficiency improvements.

Licensing of Gas Operatives

The new gas licensing system, which was introduced with the implementation of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*, operated successfully in 1999/2000. At 30 June 2000, a total of 6,067 persons were registered for gasfitting work.

An internal Gas Licensing Committee was established to assist the Director of Energy Safety to issue gas operative licences and to provide advice on matters of discipline. Ten disciplinary investigations were carried out, including one formal inquiry that resulted in the suspension of the gas operative's certificate of competency for six months and a requirement to

undergo retraining. Two other licence holders were subject to lesser disciplinary measures and five operatives were censured.

Increases in Operative Licensing Fees

Licensing fees for both electrical and gas operatives were increased on 2 May 2000. These increases are part of a series designed to achieve full cost recovery for the provision of services to licence holders.

Inspection of Consumers' Gas Installations by Utilities

The gas utilities' Inspection Plans and Policy Statements are required to be approved by the Director of Energy Safety. During the year, the Director issued revised guidelines to reflect experience gained during the past two years and recent changes to the regulatory framework. Inspection Plans submitted by AlintaGas, Wesfarmers Kleenheat Gas and Origin Energy were approved for use for the next two years.

Trans-Tasman Trade in Gas Appliances

The Trans-Tasman Mutual Recognition Agreement (TTMRA) continues to cause problems for Regulators in Australia and New Zealand. The Australia New Zealand Gas Technical Regulators Committee (GTRC) has been looking at ways to ease the current restrictions on trade in domestic and commercial gas appliances but presently it appears unlikely that the two countries' regulatory differences can be resolved. Work on this is continuing through GTRC.

Mine Site Inspections

The inspection and auditing of gas installations at mine sites and associated accommodation camps to ensure that regulatory requirements are being met is a new initiative. It included checking the approval of Type B gas appliances and the maintenance and record keeping associated with these appliances. Many deficiencies were found and are being attended to by mine operators.

Gas Sampling

Sampling of natural gas was witnessed and sampling of liquefied petroleum gas (LPG) was carried out throughout the

State. There were 35 natural gas and 51 LPG samples tested for heating value, quality and odorant levels, as well as for compliance with legislative requirements.

Licensing of Electrical Operatives

The Director of Energy Safety administers the licensing of electrical workers and contractors. The statutory Electrical Licensing Board, reporting to the Minister and the Director, approves the issue of licences and deals with related matters.

At 30 June 2000, there were 22,232 electrical workers, 3,018 electrical contractors and 214 in-house licence holders registered.

The Electrical Licensing Board reviews those matters that impact on the qualifications of electrical operatives such as training programs. It also maintains standards of conduct of operatives through a disciplinary process. The Board informs the Minister and the Director on matters relating to the safety of electrical workers and other persons.

The members of the Electrical Licensing Board on 30 June 2000 were:

Mr R Pritchard
Chairman, Consulting Engineer

Mr T Banton
Nominated by the WA Department of Training and Employment

Mr J Murie
Nominated by the
Communications, Electrical,
Electronic, Energy, Information,
Postal, Plumbing and Allied
Workers Union

Gas Inspection Work

Type A Gas Appliance Approvals:

Submissions received	81
Number of appliances approved	163

Gas Installations Inspections/Audits:

Mine sites	31
Autogas installations	231
Caravans/campervans	196
Marine	68
Appliance retail outlets	46
Hire/camping company audits	125
Second hand outlets	251
Total inspections/audits	948

Number of Notices of Defect issued on new gas installations inspected by Gas Inspection Branch	36
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Number of Inspectors' Orders written where gas installations were inspected by Gas Inspection Branch and required maintenance or repair 103

A total of 129 investigations into various incidents (including fires) resulted in 7 prosecutions and 25 warnings.

Incident/Accident Reports:

Number of reported gas incidents with completed reports 45

[Reporting of gas incidents/accidents became mandatory with the introduction of the *Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999*]

Number of gas accident reports (where injury had been sustained requiring hospital treatment) 3

Gas related fatalities 0

Mr R Campbell
Nominated by the Electrical
Contractor's Association

Mr C Dundas
Appointed as a person
with knowledge of restricted
electrical work

Mr J Jarvis
Nominated by the Chamber of
Minerals and Energy and the
Chamber of Commerce and
Industry of WA (Inc)

Mr I George
Nominated by the Director of
Energy Safety

The Board met 24 times during the
year and meetings were held at the
Office of Energy, Worsley Alumina,
the Plumbing & Painting Training
Company, the College of Electrical
Training and the Combined Skills
Training Association.

The Board dealt with 51
investigations including eight
formal disciplinary hearings and
16 summary proceedings. Ten
operatives had their licences
cancelled, suspended or had a
condition placed on their licences,
19 operatives were required to
undergo a competency
examination and four had to
undergo further training. Four
operatives were required to
demonstrate they had implemented
corrective work practices and
censures were issued to 26
operatives.

Inspection of Consumers' Electrical Installations by Utilities

All electricity supply authorities
are required to operate their
consumer installation inspections
in accordance with their
Inspection Plans and Policy
Statements, approved by the
Director of Energy Safety.

At the end of the last financial
year, approval for Western Power's
Inspection System Plan expired.
Prior to the expiry of this plan, the
Director had issued guidelines to
Western Power under the
Electricity Regulations 1947
setting out the investigative,
reporting, administrative and other
requirements with which Western
Power's Inspection System needed
to comply. At the same time, it
was requested that a new Plan be
submitted for approval.

Western Power submitted a new
Plan to the Director but this Plan
did not give effect to the
guidelines and in the view of the
Director did not provide for an
effective system of inspection.
This Plan was rejected and another
Plan was requested. Western
Power submitted another Plan that
was approved subject to
amendments. Western Power then
appealed against this decision to
the Minister under Regulation
253(6) of the *Electricity
Regulations 1947*. The Minister
referred the matter to the Director
for further action.

Western Power subsequently
submitted another Plan and the
Director sought further
clarification from Western Power.
(Presently the Director is awaiting

*the submission of an entirely new
Plan which is expected to be
based on principles which have
been agreed between the Director
and Western Power*). Western
Power is using its existing Plan
until approval of a new Plan and
Policy Statement is granted.

During the year, the Office
continued to audit the supply
authorities' inspection
performance to assess compliance
with their approved Plans. Three
audits were conducted during the
year, two at country offices of
Western Power and one at WMC
Resources' Leinster operation.

The following electricity supply
authorities are subject to audit:

BHP Iron Ore
Hamersley Iron
Robe River Iron Associates
Rottneest Island Authority
Western Power Corporation
WMC Resources

Electrical Installations and Appliances

*The Electricity (Licensing)
Regulations 1991* were reviewed
by a consultative process using a
public discussion paper.
Responses were analysed and a
comments paper was finalised. It
is planned to amend the
regulations during 2001.

The *WA Electrical Requirements*
document is issued by the Director
of Energy Safety under the
authority of these regulations,
principally to deal with service
rules that set out how installations
may be supplied with electricity.
During the year, the document was



Office of Energy Electrical Inspectors, Peter Wright (left) and Pat Smith processing an appliance approval application

revised to reflect the major changes in the nature and technology of the electrical industry and the roles of the Office of Energy and network operators. A detailed consultative process was carried out with industry and stakeholders. (The final document was published late July 2000).

Electrical Inspection Work

The following electrical inspections and investigations were carried out:

- 321 inspections of installations not supplied from utility supply systems;
- 414 investigations into breaches of the Electricity Act and Regulations, resulting in 123 prosecutions and 74 warnings;
- 485 inspections of mine sites and the processing of 121 submissions;

Electricity Related Accidents

A number of electricity related incidents were reported. There were 523 electric shocks and 28 accidents, including six fatalities;

1. A child received a fatal electric shock when his finger touched the active pin of a plug that was partially inserted into a socket outlet.
- 47 investigations into various types of reported electrical safety incidents, including fatalities;
- 21 audits of electrical appliance retailers in respect of compliance with statutory safety and energy efficiency labeling requirements;
- 19 surveys/audits of electrical contractor/air conditioning installers' work systems and practices; and
- 17 safety assessments and 13 approvals of various types of electrical appliances/ products.

2. A rigger received a fatal electric shock while assisting in the erection of a concrete wall panel suspended from a crane. The crane contacted a 22kV power line.
3. An engineer contacted the live HV bushing of a transformer in a Coolgardie sub station containing two ground-mounted transformers and received fatal burns.
4. A child in a bath contacted the water taps and received a fatal electric shock. An old rubber extension lead in the house had a phase-to-earth fault. There was no MEN connection at the house sub-board and the water pipes had become live.
5. A deck hand using an angle grinder on the deck of a fishing trawler at sea received a fatal electric shock. A wave washed over the deck, wetting the grinder.
6. A man was using an extension lead to obtain electricity from a neighbouring house. His house had been disconnected from the supply due to non-payment of the electricity account. The lead had been damaged and the active conductors were exposed at the socket end of the lead and the temporary repairs to the lead had deteriorated over time. The man was standing in wet grass when he contacted the exposed conductors and received a fatal electric shock.

New Edition of Wiring Rules

In September 1999, Standards Australia released the new edition of AS/NZS 3000:2000 Australian/New Zealand Wiring Rules. The office participated in the presentation of two seminars in Perth and one each in Bunbury and Karratha.

Installation Inspection Seminar

A seminar was conducted for 67 electrical inspectors from the six electricity supply authorities. The seminars focused on the application of the new AS/NZS 3000:2000 Wiring Rules and accident investigations.

Technical Investigations

Technical investigations were carried out into a number of issues and incidents, including:

- The electrocution of a Western Power engineer in a substation in Coolgardie
- A capacitor fire in Western Power's North Perth Substation
- A switch-room fire in Western Power's Victoria Park Substation
- EMF effects from Western Power's 330 kV transmission line in Wellard
- An electric shock from a Western Power underground connection pit

Mine Sites

The contract with the Department of Minerals and Energy for the Office of Energy to administer electrical provisions of the *Mine Safety and Inspection Act* expired on 31 December 1999. The contract was extended until 30 June 2000 to allow the Department of Minerals and Energy to set up its own resources for this work. The Office of Energy's role under this Act ceased from that date. However, the Office is still responsible for

gas and electrical safety regulation generally, including at mine sites.

Apprentice Seminars

Several safety and information seminars were conducted for first-year electrical apprentices, their parents and apprentices' supervisors, presenting information on the electrical licensing system, safe work practices and legislative requirements. The seminars provided an opportunity to address some of the issues that electrical apprentices face, such as on and off-the-job training, levels of supervision and how to find help and guidance during their apprenticeship.

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