



Office of **Energy**

Energy Bulletins

Energy Bulletin 6

Gas Industry Developments

It was widely expected that opening the WA energy market to competition would involve considerable change, with expanded use of natural gas, the need for improved inspection and industrial gas appliance approval strategies.

What wasn't anticipated by most, was the speed with which new infrastructure projects would progress from drawing board to reality. Major players such as Western Mining and Pilbara Energy had plans, some well advanced, for gas-based power generation and process applications, often using overseas technologies and hardware.

This presented our newly formed Office of Energy with a problem: how would the gas regulations relating to these gas consuming plants be administered, and the necessary safety and regulatory outcomes achieved, without holding up these developments?

Principal Engineer Gas Installations Mel Stokes, later joined by Senior Engineer Kim Wong, already had underway a major consultative exercise to clarify the roles and responsibilities of gas industry stakeholders in respect of industrial gas use in the new environment. However, the projects already under way could not be delayed pending the outcome of the consultative process.

With cooperation from industry, Mel and Kim have to date carried out the necessary technical appraisals of all these major projects, enabling them to be put into production. This was a task made more difficult by the size, complexity and remoteness of some projects and the need to interpret international design and acceptance criteria.

These individual industrial gas appliance approvals will in future be conducted by gas suppliers' inspectors or independent inspectors designated by this Office for the purpose and engaged by users on a fee for service basis. The Office of Energy will progressively withdraw from this approvals process.

Mel and Kim will, however, still be available for consultation and advice on consumers' gas installations, particularly industrial applications.

ALBERT KOENIG

DIRECTOR OF ENERGY SAFETY

Guidelines for the Certification of Proposals for High Voltage Electrical Installations for Mine Sites

The following guidelines are issued by the Director of Energy Safety under Section 33AA of the Electricity Act 1945.

Part 5 of the Mines Safety and Inspection Regulations 1995 sets out requirements for the provision, installation and operation of electricity in mines. The requirements are additional to those in the Electricity (Licensing) Regulations 1991.

Before any HV equipment is installed on a mine site, complete details of the proposal are to be provided to the electrical inspector at the Office of Energy. These details are to include a letter outlining the proposal with drawings/details of the site, a single line schematic diagram, substation and earthing system drawings.

A statement listing the technical standards and codes to which these installations must comply, and any proposed departures therefrom, is also to be provided.

Where the proposed HV installation is rated at 5MVA or above, a chartered professional electrical engineer is to certify by letter to the Office of Energy that:

a) Design Stage (before construction)

- the design is adequate to meet both the functional and safety requirements.

b) Construction Stage (before commissioning)

- the completed installation complies with all the requirements of the design; and
- operational procedures and work practices intended to be used in the operational management of the HV system have been established before commencement of operation of the plant.

Where there is associated civil, structural or mechanical work etc. involved, additional certification from a relevant chartered professional engineer is also required, eg. where a HV overhead line is being constructed.

Where the proposed HV installation is rated at 2MVA or up to 5MVA, the certification is only required for the design stage of the project.

For HV installations rated below 2MVA, proposals may be submitted without professional certification of the design.

Submissions for high voltage installations on mine sites should be forwarded to the Office of Energy's Senior Electrical Inspector for that area.

This first full year of operation of the Office of Energy has seen continuing development of the electrical and gas regulatory functions. Highlights of the Technical and Safety Division's year are as follows.

Legislation was introduced into Parliament to make it compulsory to display energy efficiency rating labels on specific electrical appliances. It is expected to become law by 1997.

A substantial advertising campaign, covering television, press and shopping centre displays, was undertaken, warning against the dangers of illegal "do-it-yourself" electrical work by householders and others. The television advertisement won a WA industry award and reached the finals of the national awards.

The Gas Technical Regulator's Committee was established during the year to address the coordination of gas industry regulation. The Committee has representation from all States and Territories and New Zealand.

Electricity supply authorities prepared and submitted their first consumer electrical installation Inspection Plans and Policy Statements.

The gas industry indicated support for a consumer installation inspection regime approach basically similar to that being used in the electricity supply industry, but tailored for natural gas and LPG. This approach was put forward to industry stakeholders in a discussion paper.

Industry and community consultation was completed on the control of vegetation near powerlines, allowing new legislation to be planned. New statutory rules have since been introduced to promote safety of tree cutting contractors and their employees.

The Minister for Energy commissioned the Director of Energy Safety to carry out a Review of the electrical installation inspection regime. The Review is presently in progress and will recommend to the Minister the strategy necessary to ensure an effective and administratively efficient installation inspection regime in the future.

Many electrical and gas project enquiries were dealt with throughout the year, as were many inspections, investigations and licensing matters. It was a very busy year.

Electricity Related Accidents

During the year, 277 electrical shocks and 37 accidents (see Note) including 6 fatalities were reported.

The six accidental fatalities were as a result of:

- an unlicensed person attempting to illegally install a lighting fitting;
- a licensed electrical worker contacting an exposed "live" wiring joint in a confined roof space;
- a person cutting a branch of a tree near HV power lines;

- an unlicensed person attempting to rewire part of his dwelling;
- an unlicensed person attempting to illegally install a ceiling fan in his dwelling; and
- an unlicensed building worker attempting to illegally carry out electrical work on the circuit of an external electric sign outside business premises.

Note: The electrical figures are different to those printed in the Office of Energy Annual Report 1996. The figures in the Report are incorrect due to an error, although the number of fatalities was correctly stated.

Gas Related Incidents

During the year, 56 gas related incidents were reported.

Of these, 16 involved injuries to persons, including the death of a young girl that appears to have been caused by misuse of a gas heater.

SHOCKS AND ACCIDENTS CAUSE SUMMARY

1 July 1995 to 30 June 1996

Cause	Shocks	Accidents	
		Non Fatal	Fatal
Substations	5	1	0
Power Lines	8	6	1
Fixed Wiring in Consumer's Premises	156	15	5
Flexible Cords and Cord Fittings	11	3	0
Appliances, Equipment and Tools	68	5	0
Supply Authority Service Apparatus	28	1	0
Other	1	0	0
Totals	277	31	6

GAS RELATED INCIDENTS STATISTICS

1 July 1995 to 30 June 1996

Injury Only	Death Only	Injury & Damage	Death & Damage	Damage Only	Without Injury or Death	Total
4	0	11	1	32	8	56

The Technical Services Branch

In previous editions of the Energy Bulletin, we have introduced readers to the various Branches of the Technical & Safety Division of the Office of Energy and the function of those Branches. Finally, we would like to introduce the Technical Services Branch.

The Technical Services Branch is headed by Deputy Director Energy Safety Kevan McGill and comprises four Sections:

- **Electricity Supply**
- **Electrical Installations & Appliances**
- **Gas Supply**
- **Gas Installations & Appliances**

In this issue of the Bulletin, we will focus on the Electricity Supply and Electrical Installations & Appliances functions.

Electricity Supply

Principal Engineer Terry Corfield, is responsible for developing and maintaining a technical and safety regulatory system for electricity suppliers that will ensure public, consumer and worker safety in relation to supply facilities (HV lines, substations etc.) and minimum performance standards for supply quality, reliability and metering accuracy. Currently, regulations are being developed to cover these issues within an increasingly competitive energy industry.

One of the Section's projects is, for example, to develop a Code of Practice for distribution substation enclosures. The Code will deal in practical ways with the principles of fire protection, operator safety and the prevention of unauthorised access.

Electrical Installations & Appliances

Under the direction of Principal Engineer Bob Briggs, the Section is responsible for electrical consumer-related regulatory activities including:

- reviewing and developing electrical equipment and installation standards;
- reviewing and developing licensing competencies;
- safety approval and energy efficiency regulation of electrical

- appliances;
- promoting electrical safety to industry and the public;
- reviewing major project proposals;
- reviewing training requirements for licensing outcomes;
- developing of technical and safety promotional material including Energy Bulletins.

Significant projects currently being undertaken include:

- participating in the development of the next edition of Australian Standard AS 3000; and
- reviewing the manual "WA Electrical Requirements".