

## ISSUE NO 21

JULY 2005

The Energy Safety Review Bill was recently introduced to the House and that Bill marks the end of the work done by many people from the industry on the EnergySafe Working Party.

The Bill can be traced back to 1996 when a Labour Select Committee Inquiry found that the current safety regime is weakened by legislative duplication.

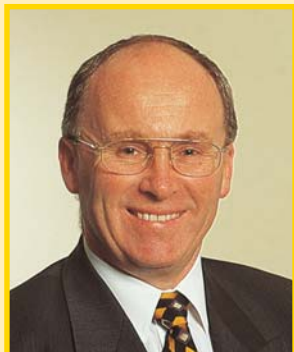
In 1997 the Board completed its review of the Electricity Act 1992 which was done in accordance with section 158 of the Act and presented its findings to the then Minister of Energy.

The then Minister asked for a broader review to be carried out than that done by the Board, and that review subsequently became EnergySafe.

A further review conducted in 1999 and the EnergySafe Working Party both found that the current safety regime is basically sound but has a range of problems which require improvement and legislative change.

The changes proposed in the Energy Safety Review Bill are seen as addressing the legislative duplication while at the same time keeping the broad shape of the current regime.

Further details on the Energy Safety Review Bill are contained in this issue of ELECTRON.



**John Sickels**

Registrar/Group Manager EWLG

A new series of information on accidents commences in this issue of ELECTRON and it is concerning to note the number of trainees that are involved in accidents.

The Board has introduced new requirements for its examinations and further information is available in this issue of ELECTRON.

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*Safety • Competency*

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# Board Examinations

In January 2005 people and organisations whose names appeared on the EWRB/EWLG mailing lists were advised of proposed changes to the Boards examination format and given the opportunity to comment.

In issue 18 of ELECTRON all registered electrical workers were also given the opportunity to comment on the proposals.

The Board has considered comments received and noted that while a low number of people and organizations commented all commentators supported the proposals.

The Board has now adopted the proposals as policy and as from the commencement of the 2006 tutorial year the format for all categories of Board examinations will be as follows:

- All examination papers will be presented in the same two section format. The first section will consist of ten 2 mark questions and the second section will be eight ten mark questions.
- The pass mark for all examination papers will be 60%.

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## Accidents

The Energy Safety Service recently published its summary of reported accidents.

As part of its strategic goal to make all information available the Board will reproduce the summary of reported accidents that relate to registered workers and trainees in this and future issues of ELECTRON.

The Board wishes to advise that any conclusions relating to the accidents reported are conclusions of the Energy Safety Service.

### Accident 1

A trainee electrician working in a substation received burns to his hands and chest when he came in close proximity to live 11,000 bushings on a bank of capacitors.

The trainee's task was to isolate the capacitor bank and then examine the metalwork for rust and carry out repairs.

The 33,000 volt section of the substation had been isolated and the plastic covers of the capacitors removed.

When the trainee approached the capacitor bank to inspect it, a flashover occurred.

The trainee received burns and was found lying on the ground.

It was later discovered that isolating the 33,000 volt section of the substation did not isolate an 11,000 volt capacitor bank.

The company concerned reviewed its procedure for working in substations.

### Accident 2

A trainee electrician was fitting a miniature circuit breaker for a new circuit in a switchboard installed at a college.

The trainee had isolated the switchboard, but when a teacher complained that the computers were not working, the trainee restored the power and continued working.

The trainee was having problems with the switchboard connection not lining up with a MCB termination and as he attempted to adjust the connection, his pliers contacted a busbar, causing a flashover.

The trainee received burns to his finger as a result.

Most of the MCB rail connection block was melted, showering blobs of copper inside the switchboard.

The company concerned reviewed procedures for working 'live' to ensure every effort was made to isolate power.

### Accident 3

An 11,000 volt switchboard at a major substation was being replaced over a three-month period.

The switchboard had been livened, the access permit for the stage of the project having been signed off and returned.

A trainee electrician was assigned the task of removing temporary cables from one new circuit breaker cabinet for transfer to another.

The trainee was working with an electrical fitter who was to wire control and metering circuits on the switchgear.

A second cabinet was not available for re-termination of the cables until its metering had been calibrated and tested by another team still awaiting an access permit.

Once the tasks were assigned, the supervisor proceeded to mark panels not being worked on that day with crosses in red tape.

The trainee and the electrical fitter removed the back cover from the second cabinet, apparently in order to change over the cable gland plate.

The trainee and electrical fitter may not have realised the cable termination was live, having been confused by the absence of a red cross on the panel. No access permit was held for this task.

The metering calibration team was preparing for work in front of the cabinet when there was an explosion in the back, and the fitter and trainee ran outside with their clothing on fire.

Fellow workers extinguished the flames and poured on water until emergency services arrived.

Both the trainee and the fitter had received extensive burns, from which the trainee died soon after.

Evidently one of the men came too close or contacted the live 11,000 volt terminals, initiating a flashover.

The major causes of the accident were the failure to follow the industry safety rules regarding access permits, the use of an informal system of marking the permit area and poor hazard identification procedures.

## Accident 4

A meter test technician was performing calibration tests on a

revenue meter when he received an electric shock from a test lead on a bench test unit. He was taken to hospital for ECG tests.

The technician had forgotten to isolate the test bench when making the connections. He was advised to obtain registration as an electrical service technician.

Improvements to the safety of the test room were also recommended.

## Accident 5

A line mechanic received flash burns to his eyes when he applied portable earths to a live 33,000 volt overhead line in a substation structure.

The 33,000 volt SF6 circuit breaker was opened and the breaker panel indicated that the mechanism had opened but, when the line mechanic tested the lines for isolation, he found one was still live. He discussed the test result with a switchroom operator, who suggested that it was possibly induction and he should carry on and earth the lines. As the line mechanic applied the earths, there was an explosion and the lines tripped. One of the contacts on the circuit breaker was not fully open.

The company subsequently reviewed its procedures on testing and the use of voltage detector probes, requiring further tests to be performed when in doubt.

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# Energy Safety Review Bill

Major features of the Energy Safety Review Bill as it relates to electrical workers are:

- The Board will be renamed the Electrical Workers Licensing Board.
- The Board will define electrical worker licence categories as opposed to those categories being listed in legislation as at present.
- The current registration and licensing system will be replaced by a licensing system based on assuring the ongoing competence of licence holders.
- Complaints Assessment Committees will be replaced by Investigators.
- The Board may exempt workers from having to uplift a practicing licence.
- The Board will be able to review the competence of licensed persons. If the Board believes the competence of a licensed person is deficient the Board may require the person to

undertake a competence programme or place conditions on the persons licence.

- The Board will be able to issue employer licences.
- An infringement offence regime will be introduced which enables the Secretary or the Registrar to issue an infringement notice if there are reasonable grounds to believe that a specified offence has been committed.
- Monetary penalties have been amended.
- People who hold practicing licences prior to the commencement of the new licensing regime will be deemed to hold a licence under the new provisions.
- Registers must contain all of the information and documentation contained in the present registers.

The Commerce Select Committee has called for submissions on the Bill and if any person wishes to make a submission full details on how to do that can be found at [www.parliament.govt.nz](http://www.parliament.govt.nz)

# Gas and electrical safety for caravans and motorhomes

*The following article has been supplied by the Energy Safety Service.*

Visitors to New Zealand are increasingly touring the country in caravans and motorhomes, and more residents are renting or buying recreational or lifestyle vehicles.

A new pamphlet produced by the Energy Safety Service illustrates the safe use of gas (particularly LPG) and electrical appliances in recreational vehicles. Anyone who owns, rents, sells, travels or lives in a vehicle that uses LPG or electrical appliances should read the

new pamphlet "Gas and Electrical Safety in Caravans and Motorhomes".

Anyone who works on gas, LPG or electrical installations would also find the information useful.

Copies of the pamphlet can be ordered by emailing [info@ess.govt.nz](mailto:info@ess.govt.nz) or visit the Safety Information section on the ESS website [www.ess.govt.nz](http://www.ess.govt.nz) to view the pamphlet online.

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## Results of complaints

Since issue 19 of Electron Complaints Assessment Committees have considered twenty-eight complaints, which had been laid against three inspectors, seventeen electricians, four electrical service technician and four line mechanics.

The Committees are referring fifteen of the twenty-eight complaints to the Board for disciplinary hearings.

One complaint is adjourned. The Committees dismissed the other twelve complaints.

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## Results of Disciplinary Hearings

A complaint was lodged against an electrician from Waitakere by another electrician from Auckland. The complaint alleged that a switchboard, air-conditioning and refrigeration control panel was installed without fuse carriers, missing terminal covers and a live wire exposed and that the electrician inadequately connected conductors, failed to adequately protect cables and failed to adequately test the work carried out.

The Board considered the complaint and found the electrician not guilty of a disciplinary offence because the electrician did not personally carry out the work in question. The Board took no further action.

### Electrician

A complaint was laid against an electrician from Rangiora by an electrical inspector from Christchurch. The complaint alleged that the electrician, while repairing a microwave oven, disabled a door switch on the oven.

The Board considered the complaint and found the electrician guilty of a disciplinary offence in that the electrician:

Contravened regulation 69, by virtue of regulation 76A(1)(a), of the Electricity Regulations 1997 by disabling a safety device on a microwave meaning that, in the event of abnormal operation, the appliance would function unsafely so as to cause danger to persons or property.

The Board censured the electrician. The Board also ordered the electrician to pay costs of \$500.00. The Board made an order suppressing publication of the electrician's name.

### Electrician

A complaint was laid against an electrician from Hamilton by another electrician, from an electrical contracting company in Hamilton. The complaint alleged that the electrician, while installing lighting points and socket outlets to a garage, failed to install a "phase splitter" and that the garage was supplied using 2.5mm<sup>2</sup> TPS twin and earth cable run in conduit from an existing socket outlet in an adjoining house. The complaint further alleged that a combination of cable sizes was protected by a 20 amp MCB.

The Board considered the complaint and found the electrician not guilty of a disciplinary offence because it did not consider the work carried out by the electrician to be non-compliant. The Board took no further action.

