

A Review of the Safety Regime for Electrical and Gas Work

Report to the Minister for Enterprise and Commerce

Ministry of Commerce/Occupational Safety and Health Service

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Executive Summary

1. This report presents the conclusions of the Commerce and Occupational Safety and Health Service (OSH) review team. Recommendations are given for improvements to the safety regime for both electrical and gas work.

2. The problems identified with the operation of the current regime are:

- the overlap and duplication between the HSE Act and the Electricity, Gas, and PG&D Acts causes confusion and adds unnecessary costs;
- accountabilities for safety are not sufficiently clear in legislation;
- the licensing regime does not cover some areas of work where regulation is needed and includes others where it is not;
- the high level of prescription, particularly in the licensing processes, adds unnecessary costs and inhibits adapting to change;
- some existing processes are less effective than they could be; and
- the level, scope, and range of penalties and remedies is too limited to work effectively.

3. The aim of the review was to develop a regime which would:

- maintain or increase safety levels;
- minimize legislative overlap and duplication;
- lower the cost of complying with the regulatory regime; and
- ensure clarity in regulatory and administrative regimes on safety.

4. The proposed approach is based on regulating according to the degree of risk. It builds on the strengths of the present regime and the structures and processes that underpin it. It is recommended that changes are made to:

- clarify that the HSE Act is the primary piece of legislation governing safety when electrical and gas work is being carried out, and align other legislation and allocate resources in line with that principle;
- clarify and make explicit, accountabilities for electrical and gas safety in legislation;
- remove much of the prescriptiveness on worker licensing so that organisations with alternative means of delivering safety are not required to use only licensed workers;
- ensure that aspects of safety not able to be dealt with effectively under the HSE Act (i.e. public safety and the long term safe use of electricity and gas) are handled in a way that is consistent with the HSE Act;

- improve the complaints and audit processes, and the accountability of the licensing boards;
- increase maximum penalties and broaden the scope and range of penalties and remedies available in the legislation; and
- make the EWRB, which currently operates as a unit of Commerce, an independent self-funded statutory body accountable to the relevant Minister for its performance on safety and worker competence.

5. The report's key recommendations have been put to the Government for decisions in principle. If these recommendations are adopted, the next stage will be more detailed work on implementation, involving both government agencies and the industry representatives directly concerned, and will lead to drafting changes to the legislation. Once legislation is developed, the industry and public will have further opportunities to comment through the Select Committee process.

Review Team

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1. Review Proceedings

6. The review arose from an Inquiry by the Labour Committee of the House of Representatives into the administration of occupational safety and health policy in August 1996. Among other things, the Select Committee recommended "...That appropriate amendments be made to the Gas Act 1992 and the Electricity Act 1992 to provide single coverage under the Health and Safety in Employment Act (HSE Act)." The formal Government response to the report of the Labour Committee undertook that further work on the boundaries between the HSE Act and the Gas and Electricity Acts would be carried out by the Occupational Safety and Health Service (OSH) in consultation with Commerce and the electricity and gas industries.

7. The review started with industry meetings and the release of a discussion document *A Review of the Safety Regime for Electrical and Gas Work* in December 1997. Sixty-three individuals and organisations representing a wide range of views made submissions. A document summarising these submissions was published in July 1998.

8. The review team appreciated the many submissions, comments and ideas put forward. While perspectives differed considerably, the range of views expressed was very helpful in informing the conclusions reached.

9. As a result of the submissions, the review team decided to broaden the scope of the review to ensure that aspects of concern to the submitters were considered. The team also decided to undertake a further round of consultations with groups representing sectors of the electrical and gas industries, the licensing boards and consumer representatives.

2. Other Reviews

10. Commerce is currently carrying out a separate internal review of the functions of the Energy Inspection Group. Commerce has also proposed that a broad review of the responsibilities, functions and operations of all Government agencies dealing with any aspect of public and consumer safety should be carried out. As at 10 March 1999 there was not yet a commitment to go ahead with the broader review but if it is carried out it will include the question of where the public and consumer safety aspects of electricity and gas, currently administered by Commerce, should reside.

3. Background to Electricity and Gas Work

11. Unless exempted, all people undertaking electrical work must be registered, but only those undertaking work for gain or reward are also required to be licensed. There were 30,697 people registered as electrical workers in the year ending June 1998. This total comprises 9,810 registered electrical service technicians, 16,552 registered electricians, 1,698 registered line mechanics, and 2,637 registered electrical inspectors. Currently 19,479 of these electrical workers have practicing licenses. Thirty-five companies have employer licences for electrical work. The number of electrical Certificates of Compliance issued in the year up to 30 June 1998 was 141,310.

12. All people undertaking gas work are required to be registered and have a current annual licence, unless exempted. The PG&D Board's database shows that there are currently 1,011 licensed registered gasfitters, 1,720 licensed craftsman gasfitters, and 27 licensed gas inspectors. There are also 295 holders of Limited Certificates. This Certificate allows the holder to carry out work under the supervision of a registered gasfitter or craftsman gasfitter. The PG&D Board estimates that 370 craftsman gasfitters are not currently licensed. It is likely that these people have retired and are no longer undertaking gas work. One company has an employer licence and there are currently 14 large installations where there is an exemption from the requirement to use registered workers by virtue of the "approved person in charge" provision.

13. Gas Certificates of Compliance received in the year ended 31 March 1998 totalled 22,257.

Cost of Current Safety and Licensing Regime

14. The Electrical Workers Registration Board (EWRB) spends \$3 million per year administering the registration, licensing, and disciplinary processes. This includes an audit budget of \$482,000. In addition, Commerce spends \$200,000 running the complaints assessment process for electrical workers.

15. Commerce spends \$2.7 million on the administration of the electrical safety legislation in addition to the items above. This includes the costs of general safety publicity, the production of electrical safety standards, the investigation of electrical accidents, the provision of general safety monitoring and the provision of information to the public and the electrical industry. Commerce spends \$600,000 carrying out similar work on gas safety.

16. OSH estimates that about 0.8% of its work is spent in the electricity and gas industry sectors, equivalent to about \$160,000 of its operational budget.

17. The total cost of running the PG&D Board's registration and licensing functions for the year ending 31 March 1998 was \$348,000, of which approximately \$87,000 was spent on gas registration and licensing. The total cost of running the certification system and undertaking gasfitter competency audits was \$453,000 for the same period.

4. The Existing Safety Regime

18. The current safety regime for electrical and gas work is defined primarily in the Electricity, Gas, and the Plumbers, Gasfitters and Drainlayers (PG&D) Acts and Regulations, and the relevant Standards and Codes of Practice. These minimize the risks of injury to the public and damage to property by placing responsibilities for ensuring safety on workers and employers and through pre-market intervention, such as restricting defined tasks to licensed workers, and prescribing safe working practices.

19. Commerce is responsible for administering the Electricity and Gas Acts and their Regulations and ensuring the safe supply and use of electricity and gas. The Energy Inspection Group within Commerce is responsible for: the development of technical standards; provision of safety and technical information to the public and trade; safety education campaigns; administering the Electricity and Gas Acts and Regulations; providing advice to the Minister of Energy on safety matters; and providing services to the EWRB. The Ministry of Health administers the PG&D Act and Regulations.

Electricity

20. The key safety features contained in the Electricity Act 1992, Regulations, Electrical Codes of Practice (ECPs), and Standards governing electrical work are:

- a. Minimum qualifications are prescribed in the Regulations and recognised via a registration process. There are several classes of registration: electrical service technician, line mechanic, electrician, and electrical inspector.
- b. The recognition and registration function is undertaken by the EWRB, which is a self-funding statutory body serviced by Commerce staff. The EWRB is also responsible for monitoring the on-going competence of registered workers.
- c. People without the required recognition are prohibited from doing potentially dangerous work.
- d. If working for reward or gain, and unless exempted, registered workers are required to obtain a practising licence before they can undertake the range of “prescribed electrical work” specified for their class of registration.
- e. “Prescribed electrical work” includes work on installations (such as house wiring), the repair and maintenance of electrical appliances, and the construction or maintenance of electricity generation, transmission, and distribution systems.
- f. Practising licences are issued by the EWRB. While the EWRB can issue licences for a maximum period of five years, licences are currently issued on an annual basis.
- g. Refresher safety training is compulsory for electrical workers and proof of attendance must be provided on a periodic basis when applying for a practising licence. (The frequency of training depends on the class of registration.)
- h. Employers can be exempted (upon approval by Commerce) from the requirement to use licensed workers if an adequate safety management system is in place. (Exemptions may apply for up to five years under the employer licensing system, but are currently issued on a two yearly basis).
- i. There is a general exemption from licensing to allow unqualified people under appropriate supervision to carry out prescribed electrical work.
- j. A general exemption from licensing also exists to allow householders to carry out a defined range of prescribed electrical work under certain conditions.
- k. Electrical workers are required to demonstrate accountability for the safety of a specified range of work via a self-certification system. Copies of Certificates of Compliance issued for completed work must be kept for three years.
- l. An audit system based on the Certificates of Compliance that have been issued is operated by the EWRB. (This process is under review at present).
- m. The EWRB has the power to fine, de-register, or suspend registered workers for a certain period of time or until certain conditions (such as re-training) are met. The EWRB can also prosecute non-registered workers.

- n. A Complaints Assessment Committee (CAC) managed by Commerce assesses complaints about registered workers. The CAC then reports to the EWRB on whether the complaint should be heard by the board.
- o. The Secretary of Commerce has the power to initiate prosecutions against anyone who breaches the Electricity Act or Regulations.
- p. OSH can prosecute electrical workers in the case of accidents or unsafe practice in the place of work. In addition, the Building Industry Authority and the territorial local authorities have the power to initiate prosecutions in relation to building safety.
- q. The Secretary of Commerce and the Building Industry Authority have the power to grant exemptions from selected parts of the Regulations.
- r. Significant accidents must be notified to the Secretary of Commerce. OSH must also be notified if the accident is significant and occurred to an employee at work.
- s. Significant accidents are investigated and are likely to lead to remedial action or prosecution. The Chief Electrical Engineer of the Energy Inspection Group within Commerce is responsible for accident investigation. Significant accidents in places or work are normally investigated jointly with OSH.

Gas

21. The key safety features contained in the Gas Act 1992, the Plumbers, Gasfitters and Drainlayers Act 1976, Regulations, Codes of Practice, and Standards governing gas work are:
- a. Minimum qualifications are prescribed in Regulations and recognised by the PG&D Board through a registration process. The PG&D Board is a self-funded, stand-alone, statutory body. There are three classes of registration for gas workers: registered gasfitter, craftsman gasfitter and gas inspector.
 - b. "Gasfitting" work includes work on installations (such as gas piping in a domestic situation), but does not include most work relating to the repair and maintenance of gas appliances.
 - c. Unless exempted, people must have a current practising licence to carry out gasfitting work. Licences are issued by the PG&D Board on an annual basis.
 - d. Once registered, gas workers are not required to undertake any further safety training.
 - e. Employers can be exempted (upon approval by Commerce) from the requirement to use licensed workers if an adequate safety management system is in place. (Exemptions may apply for up to 5 years under the employer licensing system, but are currently issued on an annual basis).
 - f. Industrial plants can be exempted if a technical person in charge of work can establish his or her suitability to monitor performance and deliver safety.

- g. There is a general exemption from registration and licensing which allows unqualified people to carry out “gasfitting” work as long as it is certified as safe by a craftsman gasfitter or completed under appropriate supervision.
- h. The requirement to use licensed workers applies only to work below the gas meter (i.e. it does not cover the production and supply of gas). However, the Gas Act and Regulations contain general obligations to operate safely and for workers to be competent.
- i. Self-certification is required for almost all gasfitting work. Only craftsman gasfitters are able to self-certify. Copies of Certificates of Compliance issued by gasfitters and holders of individual exemptions must be sent to the PG&D Board within 5 days and copies must be kept by the worker for 7 years.
- j. The PG&D Board hears complaints about registered workers and is empowered to fine, de-register, or suspend workers. The PG&D Board can also prosecute non-registered workers.
- k. The Secretary of Commerce has power to initiate prosecutions against anyone who breaches the Gas Act or Regulations.
- l. OSH can prosecute workers in the case of accidents or unsafe practice in the place of work. In addition, the Building Industry Authority and the territorial local authorities have the power to initiate prosecutions in relation to building safety.
- m. Significant accidents must be notified to the Secretary of Commerce. OSH must also be notified if the accident is significant and occurred to an employee at work.
- n. The Chief Gas Engineer of the Energy Inspection Group within Commerce is responsible for accident investigation. Significant accidents in places of work will normally be investigated jointly with OSH.

Occupational Health and Safety Legislation

22. The HSE Act 1992 administered by OSH covers the safety of all work for gain or reward while it is being carried out. In contrast with the special purpose legislation, and the Electricity Act in particular, the HSE Act imposes minimal prescriptive regulation, relies on performance-based criteria, and is not concerned with minimizing risks of damage to property unless such damage could result in injury. Where necessary to ensure safety, additional regulations can be developed under the HSE Act. Codes of Practice can also be approved under the HSE Act as a means of compliance.

23. The main safety features of the HSE Act are:

- a. Employers, and to a certain extent, self-employed people and employees, are obliged to take "all practicable steps" to manage hazards in the place of work. This involves managing hazards that may affect not only workers, but also other persons in the place of work.

- b. The HSE Act places a continuing responsibility on the employer for electricity and gas hazard control in places of work.
- c. Liability under the HSE Act for ensuring the continued safety of completed work ceases six months after completion in situations where the site ceases to be a place of work (e.g. in homes).
- d. OSH has strong enforcement powers and 180 enforcement and inspection staff in 18 field offices.
- e. Significant accidents to employees (including accidents involving electricity or gas) must be notified to OSH and will usually be investigated by OSH, or Commerce.
- f. Accidents in places of work involving non-employees currently do not have to be notified to OSH, but must be recorded and investigated by the employer who controls the workplace. OSH has the power to investigate significant accidents to non-employees, where these come to its attention.
- g. OSH tends to prosecute breaches of worker safety; public safety issues are left to Commerce.
- h. The level of penalties available under the HSE Act is currently higher than that of the Electricity, Gas and PG&D Acts.
- i. The HSE Act provides for the making of regulations setting technical standards and the approval of Codes of Practice that set means of compliance. However, OSH does not currently use these powers where technical standards and means of compliance information are already being provided under the electricity and gas regimes.
- j. Regulations have been made under the HSE Act placing duties on designers, manufacturers and suppliers of equipment, including gas and electrical appliances and equipment, used in places of work.
- k. The HSE Act provides for making regulations requiring persons engaged in particular work or activities to hold certificates of competence, and for the recognition of organisations issuing certificates of competence.

Current Levels of Safety

24. The risk of accidents to electrical and gas workers is reasonably low relative to other sectors of the construction industry. For example, during the period 1992 to 1996 there were a total of 223 accidents in the electrical sector (a rate of 21.33 per 1,000 workers) compared to 1,162 for carpentry (37.28 per 1,000) and 627 for painting (49.37 per 1,000). Some work done by OSH using census data for 1996 and the ACC claims database found that the rate of claims for electricians per full time equivalent workers for 1996 was 81.1. This compared to a rate of 89.3 for Building Finishers and Related Trades Workers and 108.9 for Building Frame and Related Trades Workers.

25. Workers in the electrical and gas industries have developed a culture of safety over time. This is reinforced through training and through industry and government awareness campaigns.

Accidents

26. Although serious accidents are required by law to be reported to the Secretary of Commerce (and to OSH if the accidents involve employees), reporting is very patchy. It appears that only serious accidents to workers employed by the larger companies are consistently and reliably reported. Accidents to members of the public are rarely reported. This means that accurate total accident figures do not exist.

27. In any event, the total number of accidents per year is a very poor measure of safety in statistical terms. A more accurate measure would be something like accidents per 1000 users per megajoule of energy consumed, as this would reflect the number of people exposed to the risk and the amount of time they are exposed.

28. An additional problem with interpreting accident data to form conclusions about changes over time is that increased figures may be the result of more comprehensive notification and recording of accidents or more effective data collection, rather than an actual increase in accidents. In addition, the numbers are generally too small to allow any statistically significant conclusions to be reached, though they are useful in identifying problem areas.

29. The accident data does not suggest a decrease in safety following the decision in 1992 to have self-certification instead of third party inspection and to allow householders to do a defined range of electrical and gas work. However, as discussed, using changes in the level of accidents to establish whether a policy is effective is fraught with difficulties. There is an additional complication in this case, as it appears from surveys done by the Office of the Chief Electrical Engineer that the amount of "householder" work carried out is about the same now as it was before it was legalised in 1992.

Electricity

30. The numbers of electricity related fatalities in recent years are listed below.

Electrical Fatalities (Calendar years)		
<i>Year</i>	<i>Electrical Worker Fatalities</i>	<i>Other Fatalities</i>
1992	2	5
1993	2	4
1994	1	4
1995	2	3
1996	2	4

1997	1	8
1998	3	5

31. Most electrical accidents are not attributable to faulty appliance design or installation practices, but to poor maintenance or misuse. For example, fatalities reported in the *Summary of Accidents for the year ending in December 1997 (Number 150)* included a factory worker receiving a fatal shock from a faulty machine; a person unloading pipes that made contact with a 11,000 volt overhead line; a farmer slipping and connecting with an electric fence and a water trough; a member of the public contacting a live conductor which had blown down in a cyclone; a homeowner touching the overhead mains while painting the house; a young person taking a fan heater apart; and a child on a metal slide who came into contact with the guttering of a house which was live.

32. An analysis carried out in 1997 indicated an increasing trend of accidents occurring to younger people and people in rural areas. This prompted the Office of the Chief Electrical Engineer to focus safety publicity on these areas.

33. The Gas Act requires that accidents involving serious injury or significant property damage be notified to the Secretary of Commerce. The number of gas-related fatalities recorded in recent years is listed in the following table.

Gas Fatalities (Calendar years)	
<i>Year</i>	<i>Fatalities</i>
1992	2
1993	1
1994	1
1995	1
1996	6
1997	3
1998	3

34. Analysis of the causes of death in gas-related accidents shows that fatalities are very rarely related to gasfitting work and that the majority involve LPG. In 1996 for example, the fatalities involved two deaths from carbon monoxide poisoning in a tent, another poisoning in a caravan, and two separate fatalities from teenagers sniffing gas. One fatality was caused by a fire resulting from bed-clothes being placed too close to a natural gas heater.

Injuries

35. OSH has examined ACC claims data from 1 July 1992 to 31 December 1997. The results should be seen as indicative only as some of the categories used by ACC are very imprecise (e.g. "other event, unclear").

36. Electrical workers lodged 1,787 claims during the July 1992 to December 1997 period. The cause of accident was described as "electrical shock or short circuit" for 22 claims, "explosion" for 4 claims, and "fire" for 4 claims. However, the major cause of injury to electrical workers was "loss of balance or personal control" (395 claims), followed by "lifting, stretching, carrying or strain" (313 claims). This pattern of injuries is similar for gas workers.

5. Rationale for Government Intervention

37. The review of the safety regime for electrical and gas work is in line with the Government's Strategic Result Area (SRA) 7:vi on "...improving the regulatory and administrative frameworks for public and workplace health and safety...so as to minimise the risks, incidence and impacts of illness and injury..." and SRA 2, which emphasises providing clear law that minimises compliance costs.

38. The review team believes that there is strong justification for intervention in the way in which gas and electrical work is carried out because of the nature of the risk involved and, therefore, the severity of the consequences of potential market failure.

39. Electricity and gas are inherently hazardous. The risks involved in working with and consuming electricity and gas are of high magnitude (there is the risk of death), risks may be unknown, and may be beyond the individual's control (i.e. the risk is involuntary).

40. There is a danger that electrical and gas accidents will occur as a result of market failure. For example, if there are information problems. Consumers may not have the information, time, or ability to judge the competence of the service provider, or the safety of the completed work. Similarly, electrical and gas workers may be confronted with new technology or unfamiliar procedures, or may work in an organisation that does not have formalised safety procedures or does not make them known to their workers. There is also a risk of market failure where there is no strong incentive to ensure safety where a safe outcome is essentially a public good. For example, there is little incentive for any one individual, organisation, or sector of the industry to co-ordinate overall supply of electricity or gas and monitor the quality of that supply, yet these functions are essential to delivering a safe and effective product.

41. Legislation is needed to assign liability when market mechanisms are either not available or are too costly. For example, while responsibility for personal injury that is the result of unsafe work may be clear, compensation by those at fault is generally not possible under the Accident Compensation regime. The exception is where criminal proceedings are brought against those at fault. Without appropriate regulation, prosecution would not be possible and there would be reduced incentives for industry participants to maintain safety standards.

6. Guiding Principles

42. The Review Team believes that a safety regime should be based on the following principles:

Certainty - the regime must be certain as to: what is required of those who undertake gas and electricity work; who is responsible for ensuring safety; the rights of workers, consumers and the general public; and the way in which the regime is to be enforced.

Flexibility - where changes, for example in technology or preferences, make standards or methods inappropriate or outdated, it should be possible to change those without undue delay or cost.

Transparency - the process for developing regulations and the criteria for making decisions under those regulations must be clear and open to ensure good quality regulation and a high level of compliance.

Competitiveness - the regime should not reduce competition, consumer choice, or incentives to innovate.

Clarity - the whole regime and the individual rules applying in particular situations should be clearly expressed and easy to understand.

Level of intervention - the amount of regulation required should be in proportion to the degree of risk involved in the practice of the occupation. (Note: this was one of the central principles of the policy framework for the Government's intervention in regulating occupations, agreed to by the Government on 10 August 1998).

Cost Effectiveness - The benefits of change must outweigh the costs of the proposed changes.

7. Problems with the Existing Regime

Overlap and Duplication

43. Under the current regime, the Electricity, Gas, and PG&D Acts and Regulations overlap significantly with the HSE Act. This overlap occurred because of the difficulty in separating public and workplace safety and the view that specific aspects of electrical and gas safety should be covered by the special purpose legislation, rather than HSE legislation. As an example of the overlap, the Electricity Act requires workers to undertake periodic safety training courses even though the training relates primarily to worker safety.

44. The overlap in the jurisdictions of Commerce and OSH causes particular problems in the notification and investigation of accidents that occur in places of work. Although the agencies co-operate so that there is normally only one investigation and prosecution, there is confusion in industry about the scope and responsibilities of each agency and uncertainty about which one to notify when accidents occur.

45. Industry also bears unnecessary costs from the collection of accident information as Commerce and OSH use different forms with different criteria to collect information about the same accident. Each agency involved in an aspect of safety collects and analyses its own data using whatever criteria are relevant to its own specific purposes.

46. While there are elements of safety covered under other legislation such as the Building Act, the Dangerous Goods Regulations, and the new Hazardous Substances and New Organisms Act, the industry and groups consulted did not identify any practical problems of overlap and duplication with these pieces of legislation.

Level of Prescription

47. The electricity and gas licensing regimes are highly detailed and prescriptive. The high level of prescription is inconsistent with the performance-based approach of modern legislation, including the HSE Act, and has led to the following problems:

- a. specific mandatory skill requirements for registration and licensing in regulations reduce the opportunities for the industry to develop training to meet the future needs of the industry;
- b. there are excess costs when workers are compelled to acquire the full range of skills required for registration rather than the specific skills they need for their particular job;
- c. all sectors of the electrical industry (except some companies with employer licences) are required to use registered workers as a means of ensuring safety, even where adequate alternatives are available; and
- d. requiring a fuller range of skills than is needed for a particular job is a barrier to entry for workers who may not be able to acquire the full set of skills. This may artificially reduce the supply of people able to do particular kinds of electrical and gas work.

Accountability

48. There is confused accountability for electrical and gas safety which has the potential to endanger the safety of workers and the public. If people do not know their responsibilities under the legislation or are unsure if they or someone else is responsible for safety, important matters may fall between the cracks.

49. There was anecdotal evidence that employers considered that electricity and gas work done within the workplace was a special situation which they had no responsibility for, apart from employing licensed electrical or gas workers. Some employers relied upon the assumption that licensed gas and electrical workers would have the full range of skills and knowledge necessary to ensure their safety and the safety of the work. This was not necessarily the case when the hazards arose from the conditions of the site rather than from the use of gas or electricity.

50. The review team considered that changes were needed to ensure that the responsibility for protecting workers and the public from potential hazards always

rested with the person best able to control the situation. In the workplace this is the person in charge of the workplace.

51. There is also some confusion about the responsibility of employers under the HSE Act for the safety of the public when electrical and gas workers are sub contractors. It is recommended that this is resolved through changes to the HSE Act.

52. Accountability needs to be crystal clear in legislation and the legislative provisions need to be backed up by clear and unambiguous information about the duties of employers and employees under the legislation. The United Kingdom's *HSE Electricity at Work Regulations 1989* were seen as a good example of clear information on the duties of the various parties involved as well as information about processes and equipment to be used. Something along these lines could be developed as regulations or codes under our HSE Act

Coverage of the Licensing Regime

53. The review team considered that a key problem with the current licensing regime is that it covers areas of work where regulation is needed and includes others where it is not. This issue covers several matters dealt with in more detail in this report. However to illustrate the problem:

- Licensing is required for workers in the supply industry in addition to the safety requirements under the HSE Act on employers and employees, and company safety management systems.
- Only licensed electrical workers may repair electrical appliances. This means that an appliance manufacturer may employ anyone to assemble a washing machine, but if the same machine comes back to the same company for repair, a licensed electrical worker must be called in to fix it.
- Connecting gas appliances to cylinders below a particular weight falls outside the definition of "gasfitting" and therefore does not require licensed gasfitters to do the installation. However low weight of cylinders is no protection against accidents and there have been several serious accidents as a result of unskilled installations to small cylinders in caravans.

Penalties and Remedies

54. The review team considers that the penalties and remedies currently available under the relevant legislation need reviewing in order to be effective.

55. There are problems with the level of penalties and the scope and range of penalties and remedies available to disciplinary bodies.

56. If the approach in this report is adopted, the emphasis moves in some areas, particularly in electrical work, to a less prescriptive, more performance-based regime which allows more scope for judgement. Experience elsewhere suggests that a performance-based regime needs to be backed up with significant penalties to encourage compliance and deter unsafe behaviour.

57. The review team also thought that changes to current penalties and remedies were needed to introduce more flexibility to deal with the whole spectrum of behaviour that breached safety. For instance, under the Electricity Act there needs to be a penalty for minor offences which has a less serious impact than suspension which prevents a person from carrying on their livelihood.

Processes

58. The review team (and many of those who made submissions to the discussion document) considered that some of the existing processes are less effective than they could be, and take too much time. Top of the list for processes that need improvement was the complaints and disciplinary process. Although it is recognised that there need to be steps in the process which ensure that the rights of the individual complained against and the rules of natural justice are protected, the delays involved are substantial. In many cases the legislation or regulations prevents speedier and more effective solutions to problems that have been identified for some time. In a few cases current handling practice could be improved upon.

59. Groups consulted also expressed concerns about the coverage, effectiveness and scope of audit processes for both electrical and gas workers.

8. The Proposed Regime

Legislation

60. A safety regime for electrical and gas work needs to deliver safety while the work is being undertaken and safety of the completed work (i.e. product safety). Several submissions to the team argued that the overlapping legislation in the existing regime creates problems and that they wish to be covered solely by the HSE Act. The review team considers that the HSE Act is capable of delivering safety while work is being done. However, the HSE Act was not designed to provide comprehensive coverage of public safety. In public places and domestic situations once work is completed the site ceases to be a place of work. In these situations, proceedings under the HSE Act must be commenced within six months of the alleged offence, in accordance with the Summary Proceedings Act. This means that accountability for the continued safety of the completed work ceases after six months. As the risk to public safety is particularly high for completed work such as installations in domestic dwellings, either the HSE Act would need to be extended to provide better coverage of safety of the completed work or special purpose legislation (such as the Electricity, Gas and PG&D Acts) would continue to be needed to cover this kind of safety.

61. Neither the review team, nor OSH is in favour of extending the HSE Act to provide for all aspects of product safety, since the Act was specifically designed to cover safety in a place of work and changing it would dilute its effectiveness. Consequently, the need to comply with more than one piece of legislation will be unavoidable in many cases. The review team believes that an overlap is preferable to leaving gaps in the coverage of safety.

62. As two agencies and several pieces of legislation will still be required in the foreseeable future, it is important that the agencies involved in administering the regime develop clear procedures to ensure that there is a seamless interface between the different Acts, common processes, and consistent information and advice for the public and industry.

63. The boundary where HSE legislation stops and special purpose legislation starts and the level of regulation required in terms of particular types of work has been considered at length by the review team. A range of options has considered including:

- Option 1: having the HSE Act cover all work except domestic installations and installations accessible to the public. For these, licensed workers would be required;
- Option 2: as for Option 1 but with exemptions from using licensed workers possible for organisations with an approved safety system;
- Option 3: licensed workers required for all gas and electrical work unless companies or employers gain exemptions through a formal exemption process. Exempted operations would be covered solely by the HSE Act;
- Option 4: HSE Act covers all work in the workplace. Compliance with the HSE Act would require meeting pre-set criteria or using licensed workers. Outside the workplace licensed workers would be used.

64. Option 2 was seen as the best option as it was the most likely to deliver safety without imposing unreasonable compliance costs.

65. A significant factor in choosing an option broadly similar to the existing regime was the recognition that the existing regime has substantial sunk costs. It contains a licensing process that is widely understood and structures that operate to deliver safety effectively. Although groups and individuals consulted wanted improvements in processes, there was no strong case built for a radical change to the key elements of the basic structure of the regime.

66. It was noted that substantial effort and resources had gone into establishing the current regime and building a culture of compliance among industries over many years. Radical changes to key elements of the current regime would impose new costs and could undermine that culture.

Safety in the Place of Work

67. The review team considers that the HSE Act, which allows employers to develop their own means of compliance, should continue to provide for worker safety. The HSE Act should also be recognised as the primary piece of legislation governing safety while the work is being carried out, whether by electricity and gas workers, and for the safety of other workers using electricity and/or gas at work. The existing HSE regime appears to be working well in terms of providing for safety, especially for larger operations. OSH has experienced some difficulties monitoring compliance with the HSE Act for small operations providing services to domestic consumers, including appliance repair work. These difficulties are not due simply to a resource

problem, but also stem from problems of notification and accessibility. In view of these practical difficulties, some additional mechanism is needed to ensure safety. The review team considers that this is best achieved by requiring the licensing of workers providing services to domestic consumers and small scale businesses.

68. The review team noted an anomaly in that Section 18 of the HSE Act places duties on principals only in relation to their contractors (and any subcontractors and/or employees of contractors and subcontractors), but not in relation to the public who may be harmed by the work the contractor is engaged to do. This is inconsistent with the duty placed on employers to take all practicable steps to ensure that no action or inaction of any employee while at work harms any other person. The review team recommends that this anomaly be removed.

69. The HSE Act provides for Ministerial approval of Codes of Practice stating mandatory means of compliance with the HSE Act and Regulations. In addition, the requirement in the Act to take “all practicable steps” includes a requirement to consider the “current state of knowledge” about means to achieve a result required by the Act or Regulations. This enables industry-developed standards to also be recognised as means of compliance. However, such voluntary means of compliance may not always be followed and the review team considers that, because of the high level of risk involved in electrical and gas work, voluntary means of compliance should not be relied upon to deliver safety. The review team recommends that additional control over electrical and gas hazards while the work is being carried out be provided through regulations under the HSE Act where necessary. OSH’s current policy is that regulations under the HSE Act may be made if there is a significant risk of non-compliance with voluntary controls or alternative control measures are not likely to be effective.

70. The review team recommends that regulations be developed to provide minimum requirements for the management of electrical and gas hazards, such as those being drafted under the HSE Act for petroleum pipelines. Regulations should also require periodic worker safety training for particularly high risk electrical and gas work. The current Electricity Act already requires periodic safety training as part of the licensing regime. It is recommended that these training requirements be modified as discussed in the worker competence section later in this report. Requirements for training would logically be placed in Regulations under the HSE Act as they focus on worker safety.

Safety of Completed Work

71. The review team considers that some form of Government intervention is necessary to ensure safety in relation to electrical and gas installations and the repair and maintenance of electrical and gas appliances for the following reasons:

- a. Of all electrical and gas work, the public is most at risk from installations and appliances (primarily electrical), because of the high level of exposure members of the public have to these. Incompetent work on both installations and electrical appliances has led to serious injury and deaths.
- b. Consumers, and domestic consumers in particular, generally lack the knowledge required to judge whether the worker is competent and whether the completed work is safe.

- c. Worker competence is usually the most critical factor in ensuring safety.

Installation Work

72. The safety of installation work is determined to a large extent by the competence of the individual worker. Installation work is frequently carried out by a single worker, therefore, there are few opportunities to check whether the correct method of installation/repair has been followed. Often it is either very difficult or very costly to inspect the completed work, as wiring/piping may not be accessible to the inspector. Moreover, inspectors may not have the competence to inspect specialised or uncommon types of installations. Consequently, the review team considers that the most appropriate method of intervention will be one that focuses on the skills and knowledge of people carrying out installation work.

73. As a result of the high volume and variety of installation work coupled with problems of accessibility, after-the-event methods of checking competency (such as auditing to identify incompetent workers) are unlikely to deliver adequate levels of safety. Therefore, the review team recommends that the pre-market intervention of restricting entry via a licensing regime, which requires formal recognition of competencies, be employed to ensure the safety of installation work.

Extended Coverage of Work on Gas Installations connected to Small LPG Cylinders

74. There is a gap in the regulatory regime as the definition of work for which a registered gasfitter is required, excludes small LPG cylinders of the sort commonly used in caravans and mobile homes. There have been accidents and fires attributed to incorrect installation and poor maintenance of these installations.

75. The need for change in this area has been highlighted before and the industry was generally in favour of extending the safety regime, as is still the case. The solution to this problem is not as simple as merely extending the definition of “gasfitting” to require registered workers to do the work, as this would impose excessive compliance costs by catching appliances like barbecues and cabinet heaters. The definition may need to exclude certain appliances or be limited to fixed installations. Compliance costs could be reduced by allowing people who are suitably qualified to undertake particular tasks, rather than requiring that the work be done by fully licensed workers.

76. However these options do not address the secondary problem of installations becoming unsafe due to lack of maintenance. An option that has been discussed is the introduction of warrant of fitness requirements for gas installations in caravans. Another option is to provide consumers with safety information and new gas hoses when they bring their gas cylinders in for testing. The Dangerous Goods Regulations require that LPG cylinders must be tested every ten years and it is against the regulations for filling stations to fill untested cylinders.

77. After discussions with the Office of the Chief Gas Engineer and the Motor Caravan Association, the Motor Trade Association began offering voluntary safety checks for caravans and motorhomes by its alternative fuels technicians. This is a welcome step. However, the review team believes that more needs to be done in

this area and recommends that further work be undertaken to identify cost-effective mechanisms of covering this gap in the safety regime.

Appliance Work

Safety of Appliance Manufacturing Work

78. The requirement to use licensed workers in the manufacture of electrical appliances became an impediment to competition between imported and locally manufactured equipment and was removed in the 1992 energy sector reforms. The safety responsibilities applying to importers, manufacturers and sellers provided for in Regulations, approved Codes of Practice, and recognised equipment safety standards have adequately covered equipment and appliance safety since then. Electrical Codes of Practice define the safety requirements for each appliance type and Regulations identify which appliances require approval by the Secretary of Commerce before sale. An independent review of this regime is being carried out in response to forthcoming Mutual Recognition Arrangements with other countries.

Safety of Appliance Repair and Maintenance Work

79. Currently, repair and maintenance work on electrical appliances must be carried out by licensed electrical service technicians. While there is no such general requirement for gas appliances, work on the control mechanism of an appliance falls within the definition of gasfitting and must be undertaken by a registered and licensed worker. Appliance repair work following an accident must be certified. Since a registered gasfitter cannot self-certify work, a craftsman gasfitter needs to undertake and/or certify the repair. The holder of a relevant exemption may be authorised to certify their own work or the work of others.

80. The review team recommends that the existing requirements for safety of appliances be retained in their present form until further work is done on the level of risk from repair and maintenance of appliances. In the case of electrical appliances, there is evidence that unskilled repairs have led to serious injuries or death. This is not as significant an issue for gas appliances as people usually call in a licensed gasfitter to repair gas appliances rather than attempt to repair them themselves. However, poor maintenance of appliances has led to some deaths. This is a particular issue for the maintenance of gas appliances on commercial premises.

Exemptions from Licensing

81. The review team acknowledges the requirement to employ licensed workers for all types of electrical and gas work on installations and appliance repairs/maintenance would impose unnecessary compliance costs on some sectors. Therefore, the review team recommends that exemptions from licensing be made available for particular situations, as discussed below. The key criterion for granting exemptions must be that safety will not be compromised.

General Exemptions

Appliance Manufacturers

82. There is an anomaly at present with manufacturers able to employ non-licensed workers to assemble appliances, but required to use licensed workers to repair them. The review team recommends that appliance manufacturers be exempt from the requirement to use licensed workers to repair the appliances that they manufacture.

Owner/Occupier

83. The review team recommends that the existing general exemptions enabling householders to undertake a restricted range of work, including the repair of domestic appliances, be retained. There have been very few safety concerns arising from householder exemptions since being introduced in 1993.

Work Under Supervision

84. The review team recommends that the existing general exemption enabling electrical and gas work to be done under supervision be retained, as there have been no apparent safety problems arising from this exemption.

Other General Exemptions

85. Other general exemptions exist, for example exemptions allowing registered engineers and tradespeople to undertake specified work. The rationale for these exemptions needs to be reconsidered and, if they are to be retained, there should be a consistent approach which applies to both electricity and gas. The safety implications of these other general exemptions also need to be reviewed to ensure that the exemptions are not leading to safety risks. For example, there is some anecdotal evidence that some tradespeople are not competent to do the range of work specified under the exemption.

86. There is a wide variety of occupations that include some “electrical work”. These occupations range from aircraft and marine electricians, where most of their work is electrical in nature, to mechanical services (e.g. air conditioning) which involves limited electrical work. In the case of aircraft and marine electricians, the work they do is exempted from licensing requirements. However, mechanical services work is not exempted.

87. The review team recommends that for this range of workers, three options should be discussed further with the licensing boards and the groups involved:

- a. The work could be specifically exempted from the licensing provisions and this may require specific procedures to be followed;
- b. Other licensing systems recognising the competence of the person to carry out the work could be recognised. These might include qualifications with the relevant electrical competency units in them, for example. This option could be applied to gas, plumbing, and aircraft workers; or

- c. Limited licences of the kind that currently apply to air conditioning installers could be used.

88. The existing exemptions from licensing are based on prescriptive criteria that include requirements to follow particular instructions contained within Codes of Practice or Standards. The review team recommends that the existing methods of providing these exemptions be retained and applied to the further exemptions recommended to ensure clarity, transparency and consistency.

Exemptions Requiring Approval

89. Currently there is a range of exemptions from licensing for electrical and gas work that require approval from the Secretary of Commerce. Both the Electricity and PG&D Acts offer an “employer licence”. Employers must demonstrate that they have a system that is sufficient to ensure that employees are competent and that they receive the supervision and training needed to carry out the work safely. Employer licences may be granted for a period not exceeding five years.

90. Employer licences are available to employers able to demonstrate that they meet the criteria. This is intended to avoid the imposition of unnecessary compliance costs. (Licensed workers generally demand higher wage rates than unlicensed workers). Savings on training costs may also be possible, as training could be customised to the requirements of particular types of work, rather than requiring workers to gain the full range of skills required for an individual licence. If all training is carried out in-house, the ITO system of recognising prior learning/current competency will enable employees to have their skills formally recognised if necessary.

91. The number of employers with employer licences is small (35 for electricity and one for gas). Employer licence exemptions tend to be requested by large employers with sufficient resources to meet the costs involved in developing, implementing, and documenting an alternative safety management system, or those already operating a quality assurance system which includes safety management.

92. The review team recommends that the ability for employers to have an alternative to licensing through an employer exemption should remain. However, options for reducing the amount of administration involved for the Government, such as requiring employers to have their safety management systems recognised by an approved body (e.g. ISO 9000 accreditation), should be explored. Options for providing exemptions with lower compliance costs than that of the current employer licence exemption should also be explored.

93. The PG&D Act currently provides an exemption for work carried out at large industrial installations where the person(s) in charge of those installations is approved by the Secretary of Commerce. The review team considers that this exemption is in effect a mixture of exemptions already provided for (work under supervision and the employer licence) and the justification for retaining it should be considered as part of the review of exemptions.

94. The question of whether the employer licence process should be administered by OSH or some other part of the Government needs to be considered. At present it is administered by Commerce.

Limited Licences

95. Legislation provides for licensing boards to grant limited licenses to workers to apply to particular defined circumstances. This provides needed flexibility, but it is important to ensure fairness by deciding on approvals on a consistent basis and by making the conditions known.

Further Increasing the Flexibility of the Licensing Regime

96. The flexibility of the current licensing regime could be improved to ensure that areas of potential risk are brought under the regime and that unnecessary compliance costs are not imposed where the risk is low or has been addressed by an alternative to licensing.

97. As well as the coverage of gas installations connected to cylinders under 15kg, coverage of the repair and maintenance of gas appliances, particularly those used in domestic situations, needs to be examined more closely.

98. An area where there may be scope for a more light-handed approach to regulation is commercial installations and appliances, particularly those in a controlled workplace with no, or limited, public access. In these situations, the provisions of the HSE Act may be sufficient to ensure safety. Allowing workers to repair and maintain appliances for which they have gained relevant qualifications (for example a qualification offered by an appliance manufacturer) may be another suitable alternative to licensing in some cases.

99. The review team recommends that the extent of coverage of installation and appliance repair and maintenance work be further examined on the basis of a more detailed assessment of the risks involved in particular types of work.

Work in Electricity and Gas Supply

100. In 1993, work in the “supply” sector of the electricity industry, which encompasses work in relation to the generation, conversion, transformation, and conveyance of electricity (excluding work on installations), was brought under the current licensing regime. Previously the supply sector operated under a “registration” regime in a regulatory exemption system. Many of the electricity supply organisations operate under the existing employer licence exemption.

101. There are no licensing requirements for the supply sector of the gas industry (currently defined as work upstream of the meter). The coverage of the gas licensing regime was limited, for historical reasons, to work downstream of the meter. From a safety perspective, there does not appear to be any strong justification why the gas meter should remain the defining point for coverage. The review team considers that a safety regime for gas work should be designed to ensure safety in all aspects of gas work. Aligning the regulatory regimes covering electrical and gas work is also desirable, both for clarity and safety assurance purposes.

102. The supply sectors of both the electricity and gas industries have good safety records and are comprised of a small number of, generally mature, organisations. The majority of accidents that occur in this sector do not involve the public and

relate to the safety of workers carrying out electrical and gas work. The number of persons and organisations carrying out electrical and gas work is increasing with industry fragmentation in response to deregulation. Electricity and gas supply is a specialist area that requires specialist knowledge, which means that an employer who is also the asset owner is likely to be in the best position to judge whether individual workers are sufficiently skilled to do their job competently. In the supply sector, design and operation of an entire system or process is often the most critical factor in ensuring product safety, rather than the competency of individual workers. Therefore, there appears to be little justification for individual worker licensing in the supply sector.

103. The supply sector, and the electricity supply sector in particular, has argued that supply work should be covered solely by the HSE Act. However, as discussed earlier, the existing HSE Act does not provide adequate assurance that public safety and the continued safety of completed work will be addressed. Additional legislation such as the Electricity, Gas, and PG&D Acts would need to provide this assurance.

104. The review team recommends that no formal approval be required to operate in the supply sector. The supply sector would be adequately regulated via performance-based provisions in the HSE Act. However, it is recommended that supply operations accessible to the public have a risk management system (what the gas sector refers to as a “safety case”) that includes provisions for ensuring public safety. Additional Regulations and Standards for higher risk aspects of work may need to be developed and, where necessary, made mandatory, as has already been done for high-pressure gas pipelines.

105. The disadvantage of requiring a risk management system is that it is less suitable for smaller operations because of reduced certainty and the cost of developing the risk management system. However, it is expected that industry will move to develop model systems or safety cases for particular parts of the supply sector in order to reduce compliance costs to individual players.

9. Registration

106. Before undertaking “gasfitting” or “prescribed electrical work” (as defined in the Regulations under the PG&D Act and the Electricity Act respectively), workers are required to demonstrate to the respective boards that they have fulfilled the qualification requirements. Registration is formal recognition that standards have been met. Registration also serves several other secondary purposes such as:

- a. providing boards with a cost recovery mechanism. (The current electrical registration fee is \$69 and a fee of \$34 is charged for the registration certificate. The EWRB has proposed that these fees be increased. The fees for gas workers are \$69 for registration and \$48 for the registration certificate); and
- b. providing a mailing list which can be used to keep qualified people informed of changes in legislation and new standards, whether or not they are currently practising or working legally under a current practising licence.

107. There is some work that is identified in legislation as able to be carried out by a person who is registered, but not licensed i.e. without a current practising licence.

108. In the case of electrical workers, the discrepancy between the number of people registered and the number of people with a current practising licence is significant. For instance, there were 16,552 registered electricians, but only 10,605 of these had current practising licences in 1998. Many of those that are registered, but not licensed will not be practising electricians (e.g. some may have moved into management positions or retired). There is no incentive for registered workers to request removal from the register. There are about 370 gasfitters who are registered, but not currently licensed.

109. The Electricity Act sets out four classes of registration for electrical workers: Electrical Service Technician; Electrician; Line Mechanic; and Electrical Inspector. There are three types of registration for gas workers: Registered Gasfitter; Craftsman Gasfitter; and Gas Inspector.

110. The development of industry training organisations (ITOs) since the introduction of the Industry Training Act 1992 means that ITOs are now offering special purpose trade qualifications registered on the National Qualifications Framework (NQF) that can be recognised by the New Zealand Qualifications Authority (NZQA). Because this has simplified the task of recognising competency and the boards have moved to focus more on ensuring the continuing competence of workers, the benefits offered by the registration mechanism have diminished.

111. There are costs to the licensing boards of maintaining large numbers of people on the register who do not provide licence fees but require services from the boards.

112. The review team believes that the “registered” worker title can be confusing for the public, who may be unaware that registered workers need an annual licence to practice legally and that the on-going competence of registered workers is not ensured by the mere fact of them being registered.

113. The review team considers that thought should be given to abolishing the concept of “registration” in favour of “licensing”. The reason for this is that the licensing mechanism offers the same benefits of signaling that a person has reached a particular standard but in addition a current practising licence confirms that the person is recognised as competent to do the job now. The main purpose of registration, as distinct from licensing appears to be keeping communication channels open between the board and people who were at some point recognised as having the qualifications to practice the trade. While communication is seen as useful, the costs of communicating with non-licensed workers are currently being borne by licensed workers. People whose licences have lapsed could be given the option of paying a fee if they wish to remain on the mailing list and receive trade related information.

10. Licensing

114. Registered electrical and gas workers are legally obliged to obtain a practising licence before undertaking “prescribed work” and “gasfitting” within the scope set for their class of registration. Both the EWRB and the PG&D Board issue licences on an annual basis. A licence expires if it is not renewed or if the applicant is de-registered. The current licensing fees are \$55 to \$100 for electrical workers, \$400

for an electrical employer licence; \$54 to \$58 for gas workers; and \$495 for a gas employer licence.

115. The EWRB issues licences for line mechanics, electricians, electrical inspectors and three categories of electrical service technicians, and a Provisional Licence (which allows people with the necessary training and experience to register while they are waiting for examination results). The EWRB can place restrictions on the work that may be carried out by people in their class of registration. Such restrictions may be the result of disciplinary action. The EWRB also issues Qualified Electrical Engineer identification cards to qualified electrical engineers who are entitled to carry out prescribed electrical work. (The Electricity Act recognises engineers registered prior to 1992 as being entitled to carry out electrical work without having to be licensed or to obtain a practising licence.)

116. The provision for qualified engineers exists as a “grandfather” provision. The review team recommends that the need for this provision be reviewed and that the EWRB consider what transitional arrangements, if any, would be required to allow for qualified engineers to move to full licensing.

117. The PG&D Board issues five types of licences: Provisional (for people whose application is under consideration by the Board, allowing them to practice in the class of licence applied for); Limited (required for unregistered gas workers, such as apprentices); and licences for the three classes of registration. The PG&D Board also has the power to authorise any person to carry out gas work, though this may be time limited or given on certain conditions.

118. The primary purpose of licensing is to provide those unable to judge the competence of a worker with an up-front means of identifying competent workers. The identifier needs to be clearly recognisable. Any increase in the number of licence classes, and therefore identifiers, to reflect greater specialisation and multi-skilling under the proposed regime is likely to confuse consumers and add unnecessary compliance costs. Therefore, the review team recommends that an amended, but simplified version of the current classification system be maintained.

119. For clarity, the identifying card a licensed worker has should be endorsed for domestic or non-domestic work, or both. Those working under an employer license should also be required to carry an approved identifier.

120. The review team suggests that the following changes be considered to improve the current classification system and to accommodate the proposed safety regime:

- a. The title “Registered Gasfitter” is confusing for the public and needs to be amended. Unlike a Registered Electrician, a Registered Gasfitter is not authorised to certify gas work.
- b. The “Gas Inspector” classification needs to be amended or removed, as an anomaly has rendered this class virtually redundant by preventing workers in this class from certifying work.
- c. The criteria used to issue Provisional Licences, Limited Licences and to give authorisations will need to be reviewed to ensure they are sufficiently transparent to enable consistency to be monitored.

- d. The need for the “Line Mechanic” class will need to be reviewed as most of the work undertaken by electrical line mechanics will no longer be required to be undertaken by licensed workers.
- e. If gas appliance repair and maintenance work requires licensed workers it may be necessary to create a new gas service technician class.

121. The review team considers that the need for licensing workers on an annual basis should be reviewed. For instance, having licences spanning two years is one possibility. The financial and other implications of any change would need to be carefully considered.

122. The review team believes that there needs to be greater consistency between the registration/licensing and classification systems, and the identification cards employed under the electrical and gas regimes particularly as companies move into joint ownership of gas and electrical assets.

11. Self-Certification

123. Prior to 1992, electrical and gas installation work was controlled through a permit and inspection system operated by the local electricity and gas suppliers. This system was replaced by a self-certification system in the 1992 energy sector reforms with all work that was previously subject to a permit required to be certified by the electrical worker or gasfitter. Electrical appliance repairs and electrical work on supply systems were not covered by the permit system and consequently are not currently covered by the certification regime. The EWRB has, however, introduced a voluntary certification system for appliance repairs in response to industry requests.

124. Certain electrical installation work that has increased safety risks or involves using non-standard practices, must be inspected and certified by a registered electrical inspector in addition to the self-certification by the person doing the work.

125. The review team endorses self-certification by electrical and gas workers because it places clear accountability for safety of the completed work on the worker, who is often in the best position to influence safety. Self-certification helps licensed workers compete against non-licensed workers as the certificates, which are issued exclusively to licensed workers, can be used as a point of differentiation. Self-certification enables consumers to take legal action for unsafe work independent of regulatory intervention by identifying the person who completed work. Consumers can also take action against aspects of work unrelated to safety, such as quality, correct functioning, and cost, under consumer legislation.

126. As certificates are issued to workers by the respective boards, self-certification is also used as a cost recovery mechanism and to provide an audit trail for enforcement purpose. The fees for Certificates of Compliance are prescribed in Regulations. The current fees for electrical Certificates of Compliance are \$5 for domestic work, \$20 for commercial or industrial work, and \$100 for on-going or industrial work. These fees are currently being reviewed by the EWRB. The current cost of a gas Certificate of Compliance is \$20.

127. All the electricity and gas industry groups consulted are convinced that self-certification is working and that it has resulted in people placing greater emphasis on the safety of their work. There is anecdotal evidence that the quality of electrical and gas work has improved since the introduction of self-certification. Some workers who believed they were not sufficiently competent in a particular area of work stopped performing that work when self-certification was introduced. Previously they had relied on the inspector to pick up any errors.

128. However, during the consultation process the review team also heard a large amount of anecdotal evidence that suggests Certificates of Compliance are not being issued for a significant amount of work that should be certified. This conclusion, at least as far as it relates to the electrical industry, is supported by a study undertaken by the Office of the Chief Electrical Engineer which showed that approximately 50% of electrical installation, addition, and alteration work was not certified. The level of compliance for new installations is, however, much higher. This reflects the obligation of the electricity supplier to verify that certificates have been completed before supplying electricity.

129. The problem of non-compliance appears to be more widespread with electrical workers than gas workers. There was some concern in the gas industry that self-certification was not being complied with because the number of appliances sold did not match the number of new connections. The PG&D Board carried out a study comparing the number of new meters with the Certificates of Compliance covering installation. It found that some people had a new meter installed but did not have anything connected to it yet. In the few cases where there was connection but no certification, the installation was very new and the certificate was about to be issued.

130. Possible reasons for non-compliance include: the cost of Certificates of Compliance; the level of detail required by Certificates of Compliance (they take too long to complete); consumers do not always ask for them; and circumvention of the audit process. (Only those issuing Certificates of Compliance are subject to audit by the boards at present.)

131. As self-certification is one of the cornerstones of the safety regime, any problems relating to compliance are of concern. Some parties to the review have called for the return of the old inspection regime that applied before the 1992 reforms. However, the review team believes that this would be a retrograde step as inspection would shift accountability for the safety of work away from the worker, who is the person most often in a position to influence safety, and will be substantially more expensive. Estimates of the cost of the previous permit and inspection regime range from \$15 million to \$30 million. Moreover, the PG&D Board has noted that territorial authorities have found it difficult to meet their current obligations under the PG&D Act to inspect plumbing and drainlaying work because the time and costs involved pose resourcing problems. Industry representatives have also pointed out that local authority inspectors are becoming generalists, rather than specialists and that this could compromise safety if inspection was used in place of self-certification.

132. The review team recommends that self-certification be extended to all electrical work carried out by licensed workers. The costs associated with certificates will need to be reviewed to reflect the significantly increased quantity of certification that

will occur. Consideration should also be given to the coverage of the gas self-certification regime.

133. The review team considers that the licensing boards should look at ways of increasing compliance with self-certification, including making Certificates of Compliance more user-friendly and by continuing to educate householders and others who commission work to ask for them. For example, the extension of certification to cover all prescribed electrical work will assist householders who currently cannot easily differentiate work that requires certification from work that does not.

134. During the consultation phase of this review consumer groups suggested that insurance companies be encouraged to push for Certificates of Compliance as a way of reducing their risks. (The idea was that, as with woodburning stoves, if a stove installed without a building permit caught fire the insurance company would not pay out.) While this idea seems to have considerable merit the review team did not think it should be made part of the legislative framework but that it would be best pursued by the industry and the boards.

135. As previously noted, the EWRB has already taken steps to improve both the process and coverage of self-certification. It has introduced a voluntary “Electrical Safety Certificate” scheme for appliance work conducted by licensed workers, which is not currently covered by the legal requirement to issue Certificates of Compliance. The new Electrical Safety Certificate is a self-adhesive sticker that can be attached to the appliance or the invoice.

136. The review team considers that the Certificate of Compliance and the new Electrical Safety Certificate processes should be collapsed into one to avoid confusion.

137. Currently a range of electrical work must be both certified and inspected. This is done when the competence of the person doing the work is critical to safety. With the development of competency units covering many of these areas there is a need to consider whether what is in effect a double certification system is still needed. The review team considers that the current requirement applying to work requiring inspection should be reviewed to reduce the compliance costs associated with it. Given that the safety regulatory environment is performance-based and has recognised methods of compliance, it may be more appropriate for the inspection regime, if retained, to apply only where the recognised practices are not being followed.

138. There are no tasks in gasfitting that must be both self-certified and inspected.

139. When changes to self-certification are made, the processes used for self-certifying electrical and gas work should be made as consistent as possible.

12. Worker Competence

Prescription of Skills Required

140. The minimum skill requirements for registration for both electrical and gas work are prescribed in Regulations. The EWRB and the PG&D Board have in the past examined workers on these skills. Setting and holding examinations was a key function for both boards at the time they were originally established. However, these examinations now represent duplication in assessment as ITOs have evolved to the stage where the boards can be satisfied that workers trained through the ITO competency-based system have gained the prescribed skills. Both boards have now signed Memoranda of Understanding with ITOs to remove the examination requirement.

141. The current requirement for electrical and gas workers to demonstrate that they are licensed to practice their occupation is sound. However, the system of training and recognising worker competency is unnecessarily inflexible and costly because specific skill requirements have been prescribed in legislation. As legislation, and the Acts in particular, are onerous and time-consuming to change, it is difficult to introduce flexibility and to ensure skill requirements are kept up to date.

142. The review team recommends that the level of prescriptiveness on skill requirements should be reduced. This will give training providers more flexibility to vary the technical and safety content in response to technological change or trends such as those that may become apparent in accident statistics. The review team recommends that public input into the development of competency standards relating to worker licensing should be required to ensure that public safety interests are fully addressed.

Breadth of Skills Required to be Recognised as Competent

143. The breadth of training required to gain registration in the electrical and gas trades may be imposing unnecessary compliance costs on some employers and trainees. For example, the skills currently required of electricians by the electrical regulations are based upon the skills needed to safely rewire a house. Many electrical workers, for example some of those in the commercial sector, do not need all of these skills.

144. While the industry training structure allows for unit standards to be bundled together to form different qualifications, most of the current ITOs, both for gasfitting and electrical work, have not seen any particular benefit in promoting qualifications for narrower ranges of skills than those required for registration (although it is recognised that this may be due in part to the level of prescription).

145. It is acknowledged that electrical and gas workers may require a broad range of skills in order to be fully employed in a market as small as New Zealand. However, the PG&D Board has noted that it is difficult for trainees to gain experience in many aspects of the trade, particularly in the commercial and industrial field, because their employers tend to specialise in a narrow band of work.

146. The review team believes that, as long as workers can work safely, they should not be prevented from developing a narrower range of skills for specialist areas if they wish. The current breadth of training required in both the electrical and gas trades also inhibits multi-skilling. New areas of work, such as kitchen installation, increasingly require ranges of skills that cross traditional trade boundaries. There is a need for these types of skills to be defined and recognised in a way that ensures safety, but does not require workers to face unreasonable delays and hurdles or the costs of double registration.

147. The boards have attempted to provide some flexibility in skill recognition via special exemptions and restricted/limited licences and the cross-recognition of competencies from other trades. However, the review team believes that a simpler and more transparent system needs to be developed to enable greater specialisation and multi-skilling to develop in response to market demand.

148. The review team believes that this could be achieved through the ITO system. A bundle of compulsory unit standards with a heavy emphasis on safety, set at a lower level than current training requirements, could be developed as the foundation for a variety of qualifications. These qualifications could cover the traditional broad range of skills, or may focus on specialist or multi-skilled areas. The boards, in consultation with the government regulatory agencies, and with some input from the public, should be empowered to specify which qualifications they consider adequate for different classes of licensing. The boards would be required to demonstrate that safety aspects are adequately addressed by specified qualifications and can be met at reasonable cost.

149. Some electrical workers and union groups expressed concern that this approach would provide for a lower level of training than electrical workers receive at present and this would threaten safety. The review team's opinion is that the basic safety elements of any training should not be compromised and that the variation in training should be in the number and range of technical skills a person needs to acquire to be recognised as a skilled worker. Workers should also be made responsible for ensuring that they do not undertake work that extends beyond their level of competence.

150. People were also concerned that the status of the traditional trades would be eroded. However, broad trade qualifications will not be entirely replaced by narrow qualifications; workers will still be able follow traditional paths of trade training if they wish. The increased flexibility in the recognition of skills will allow narrower specialist training, which may in turn, reduce costs, both to those undergoing training and their employers.

151. The review team recognises the extension of the CER arrangements with Australia and the emerging alignment of the technical infrastructures of the two economies. It therefore recommends that the legislation make provision for the explicit recognition of Australian qualifications and competencies without the need for specific re-verification within New Zealand.

Ensuring the On-going Competence of Workers

Safety Training

152. Electrical workers are required to undergo refresher safety training. These requirements are contained in Schedule 5 of the Electricity Regulations 1997. There are no such requirements for gas workers after their initial training.

153. Electrical workers wishing to obtain and to renew practising licenses must be able to demonstrate that they have completed the required training within a certain period. The current safety training requirements for different types of practising licences are shown in the table below.

	<ul style="list-style-type: none">• Electrical Service Technician• Electrician• Electrical Inspector	<ul style="list-style-type: none">• Line Mechanic
Safe working practices appropriate for class of registration	2 years	2 years
Testing to ensure safety prior to connection to supply	2 years	2 years
Basic First Aid	2 years	14 months
Cardio-pulmonary resuscitation (CPR)	2 years	7 months

154. Both the EWRB and the review team have become aware of problems relating to these safety training requirements. These are:

- a. Availability of appropriate training. Those in remote areas may find it difficult and costly to comply with the requirements.
- b. Consistency of training offered. Although the areas to be covered are prescribed there is no control over the quality of the training. Submissions have pointed out that courses vary in length and level of difficulty and some are considered by participants to be substandard. The lack of monitoring of quality is inconsistent with the provision of other industry training via unit standards, which is monitored by the NZQA and accredited ITOs.
- c. Relevance of training. Anecdotal evidence suggests that some workers do not treat the safety refresher courses seriously because the courses are thought to

be repetitive and not sufficiently relevant. The EWRB is of the view that it should be possible to vary the content of the safety training in response to trends, such as those identified through accident/incident reporting and auditing of electrical workers as well as training outcomes agreed to between the EWRB and Australian regulatory authorities.

155. The review team believes that there is a continued need for refresher safety training, particularly for workers involved in hazardous work and for refresher training in safety practices such as testing, the lack of which is a common cause of electrical accidents. The review team recommends that gas workers involved in hazardous work also be required to undertake refresher safety training. Safety training should be mandatory and this is particularly important in sectors where the requirement to employ licensed workers will be removed.

156. The review team recommends that, because safety training is designed to ensure the safety of the worker and the safety of the completed work, refresher safety training requirements be provided for in Regulations under the HSE Act and in other acts where appropriate. Further work will be required to develop appropriate mechanisms for monitoring compliance. One possible way in which this could be done would be to make regulations under the HSE Act similar to those that require scaffolders and commercial divers to hold certificates of competence. The regulations could require applicants for a certificate of competence to have a thorough knowledge of the hazards of the work, thorough knowledge of safe work practices, and undergo periodic training (including in first aid). The HSE Act allows for the recognition of organisations issuing certificates of competence. This could be delegated to the licensing boards or to the ITOs. The details of the training would be set out in training modules under the National Qualifications Framework and the actual delivery of safety training would be integrated with other training.

157. The review team considers that both the content and provision of safety training courses be reviewed. The EWRB has already called for submissions on the issue and is currently in the process of analysing the submissions received. The review team recommends that the electricity and gas ITOs, industry representatives, OSH and the other relevant government agencies work together to develop unit standards for safety training. Different unit standards may need to be developed for different sectors of industry to ensure that the content is relevant. Including the course within the National Qualifications Framework will mean that the standard of safety training will be monitored.

Fragmentation In Industry Training

158. In both the electricity and gas industries there are multiple ITOs representing different industry sectors. The review team believes that ITOs should be encouraged to work more closely with one another when developing standards to avoid potential duplication. It is recognised that the necessity to compete against each other for funding makes co-operation difficult, therefore ITOs may need to consider the possibility of merging. The opportunity for co-operation and merger may be greater between electricity and gas ITOs servicing similar sectors of industry. Mergers between electricity and gas ITOs would be desirable as this would help to encourage cross-skilling and the development of more flexible qualifications for multi-skilled tradespeople.

159. The review team believes that the New Zealand ITOs should be encouraged to co-operate with Australian ITOs as such co-operation has the potential to provide significant savings in unit standard development costs.

13. Licensing Boards

Need for Licensing Boards

160. The Government recognises that there are certain activities that pose such risks to the public that regulation is required. In general, where the risks are high, this regulation needs to be done through a formal structure that has the backing of statute and the power to enforce compliance. The review team considers that a statutory licensing board which represents the public interest as well as industry knowledge has been proven in other occupations to be an effective way of providing the necessary controls.

161. It was suggested to the review team that licensing activities should be carried out through industry associations. The model cited was that of the Institute of Chartered Accountants which sets standards and enforces rules of conduct over those who are members of the Institute. However, in our view, the voluntary nature of this model makes it unsuitable for licensing electrical and gas workers. We do not consider it desirable for electrical and gas workers to be able to volunteer whether to meet standards or not.

162. The other significant reason why a model such as the Institute of Accountants one is not directly applicable is that accountants who do not meet the standard of the Institute, or who do not wish to join, may still practice accountancy (although they may not use certain titles). The review team considers that a body such as a licensing board that has the power to prevent a person from entering an occupation or from continuing to practise their occupation entirely, is exercising a significant restriction on individuals. This requires defined statutory powers and processes that met the rules of natural justice.

Existing Licensing Boards

163. Submissions from members of the public and many groups and individuals in industry showed considerable support for the current registration/licensing process and for both boards.

164. The existing boards have the basic structure of a formal statutory body, although in the case of the EWRB the complaints assessment function is carried out and funded by Commerce. In addition, the EWRB is serviced by Commerce staff under a Memorandum of Understanding. In practice the location of the EWRB within Commerce, while operating at arms-length from Commerce, creates confusion for the public and for those working with the EWRB. In the view of many in the electrical industry, location within Commerce means that the EWRB must contribute to the cost of Commerce's overheads and this imposes higher than necessary costs on the EWRB, which flow through to fees and charges on the industry.

165. The PG&D Board is an independent statutory board that carries out its own servicing. The Act, which sets out the licensing and other procedures of the Board,

is administered by the Ministry of Health. This is because the main business of the board is to do with plumbing and regulation on plumbing has traditionally been seen as a matter of public health.

Possible Alternatives

166. The discussion document published in December 1997 suggested that competing authorities could be authorised to recognise worker competence. The aim of this option was to produce greater flexibility in the provision of qualifications and to promote competition and greater choice for consumers.

167. This option was actively opposed by all groups (except one industry group) and all individual submitters who commented on this issue. Those opposing the proposal saw it as confusing to electrical and gas workers to have more than one body recognising competence. It would also be confusing for the public if they had to make judgements about the competence of a worker registered with Board A compared to a worker registered with Board B. Submitters felt that standards would slip as people would shop around for the easiest way into the occupation.

168. Another option considered by the review team was the model used by the British Government to recognise the competence of gas installers. Under this model the Government tenders for an agency to issue licences for three years subject to a contract which specifies criteria and standards to be met. Standards cover the initial recognition of competence and the disciplinary processes and audits of workers. This option has the advantage of being more flexible than a process set in legislation as the contract can be amended to deal with any operational problems as they arise. It is also designed to provide an incentive for the licensing body awarded the contract to perform to a high standard to ensure that its contract will be renewed.

169. The main disadvantage of this method is that it creates an active central role for government in awarding and monitoring the contract with the accredited body. This role is seen as out of step with the occupational licensing board model used by other occupations in New Zealand. However, the main deterrent to moving to a model of this kind is the existence of the present boards. There is no guarantee that the significant costs involved in changing to the contracting model would be outweighed by the expected benefits of significant increases in the efficiency and effectiveness of the licensing bodies.

Functions of Boards

170. The key functions of the boards should be to:

- a. recognise the current competence of workers to undertake certain electrical and gas work specified in legislation;
- b. maintain discipline over them; and
- c. to exclude workers who do not meet standards of safety or competence.

Proposed Changes to EWRB

171. The current administrative situation of the EWRB being located within Commerce and therefore having to carry a share of Commerce's overheads is imposing some higher than necessary costs. As well as the costs of renting accommodation and services such as lighting which a board would have to meet wherever it was located, current overheads include the cost of some highly specialised services such as the Commerce library, corporate training programmes, and senior public service management. If the EWRB were a stand-alone Board, it could choose the range and level of services it wished to purchase.

172. The review team considers that the EWRB should be separated from Commerce and operate as a stand-alone, self-funding statutory body. Questions of location and staffing will need to be sorted out between Commerce management and the EWRB. There would be one-off transitional costs of this change, for such things as setting up a stand-alone computer system, but there is likely to be a saving in continuing operating costs to the EWRB. This should flow on as savings to the industry.

173. As a stand-alone statutory body the EWRB would also be expected to fund the complaints assessment function currently met by Commerce. This costs approximately \$200,000 per year.

Proposed Changes to the PG&D Act

174. The Ministry of Health reviewed the PG&D Act as part of a review of all health sector occupational regulation in 1996. The changes suggested were:

- a. increased focus on certification and monitoring of practitioner competency and less focus on registration;
- b. changes to the membership of the board to remove Health staff;
- c. separation of the registration and disciplinary functions of the boards through establishing a separate complaints assessment committee; and
- d. a joint disciplinary tribunal hearing disciplinary cases relating to electrical workers, plumbers and gasfitters.

175. A Health Occupational Regulation Amendment Bill is currently before Parliament. This changes the current structure of the board away from representatives nominated by industry groups and Health ministry representation to a mix of lay and trades members appointed by the Minister of Health. It also raises the maximum level of fines to \$10,000.

176. The Ministry of Health has proposed that the responsibility for administering the PG&D Act should be passed to Commerce, since Health has few operational functions remaining to it. The review team sees some logic in having the licensing bodies for both gas and electricity reporting to the same government agency. However, which agency this should be may depend upon work to be done as part of a broader review into the administration of public and consumer safety within central

government. Until conclusions are reached on this it seems sensible for the administration of the PG&D Act to stay with Health.

Accountability of the Boards

177. With the EWRB separating from Commerce and the PG&D Board no longer having a Health representative, there is a reduced oversight of the decisions made by the boards. In other occupational areas there have been concerns expressed that self-regulating boards can become “closed shops”. Closed shops may exercise their discretion unreasonably to reduce the amount of competition in an occupation and make decisions on disciplinary matters that may not have stood up to more public scrutiny.

178. To avoid any possibility of this occurring, it is proposed that the accountability of both boards be strengthened. This could be achieved through a requirement in legislation that both boards submit a business plan to the relevant Minister each year which would include specific proposals for ensuring the maintenance of competence within their occupational group and for increasing the level of safety among their workers. The boards would be required to report to the Minister on their performance in the following year. Business plans and performance results should be made public.

179. The government agency responsible would have a monitoring role, which would include advising the Government on the standards set and the performance of the boards.

Merging Boards

180. The review team considered whether this opportunity should be taken to merge the EWRB and the PG&D Board as a means of encouraging a consistent approach and reducing administration costs through more joint operations.

181. This idea was not supported by either board, as they considered that the technical issues for electricity and gas were too different for one board to deal with competently. It was pointed out that PG&D Board covers plumbers and drainlayers as well as gasfitters. Consequently, a board able to cover those trades, plus the key sectors of the electricity industry and include lay representatives would be too large to manage efficiently. It may also be so costly to operate that any savings in having a merged board would be eliminated.

182. While the review team believes that the two self-certifying groups (electrical and gas workers) could be handled in a similar way by one board, it accepts that plumbing and drainlaying, which do not allow self-certification but require third party inspection, have significant differences from energy work.

183. Another view of the review team is that a compulsory merger when both parties have objections is unlikely to be successful. Our suggestion is that Government encourages both boards to consider joint administration of functions (e.g. licensing) and joint location. These were recognised as possibilities by both Boards. Any changes to legislation should be worded so as not to preclude joint administration or an eventual merger.

184. It should be noted that as part of the process of avoiding confusion and overlap, the processes under the Electricity, Gas, and PG&D Acts are to be aligned as far as possible. This will make it easier for joint administration both within the Government and through the licensing boards.

14. Roles and Responsibilities

185. The legislation covering electrical and gas work needs to be much more explicit about where the accountability lies for the different kinds of safety (e.g. safety of the worker, safety of the completed work, and the ongoing safety of electrical and gas services and equipment).

Government

186. The role of central government in the safety regime for electrical and gas work should be to: set the framework in legislation; monitor overall levels of safety; administer and enforce legislation; promote public awareness of safety; and ensure the interests of consumers and the public are taken into account.

Industry

187. The role of individual employers, employees, and workers is to take responsibility for their own and others' safety within the framework set by legislation. There should be an explicit requirement in the legislation for all individuals to do work safely, and to leave it in a safe condition.

Individuals

188. Individuals, both licensed electrical and gas workers and members of the general public, should be under a legal obligation to confine themselves to work that they are competent to do. In the case of licensed electrical and gas workers, there is the additional responsibility of maintaining their competence to carry out their trade safely and competently.

15. Enforcement

Complaints Process

Electricity

189. Anyone undertaking electrical work may be investigated and prosecuted by the EWRB or the Secretary of Commerce and fined up to \$10,000 for breaches of the Electricity Act. Members of the public are also able to initiate prosecutions for breaches of the Electricity Act.

190. Registered workers and authorised persons can be disciplined by the EWRB. (Authorised persons are those with a provisional licence, trainees or people from related trades who have been given an exemption from the requirement to be licensed). The EWRB has the power to impose fines of up to \$5,000 under its

disciplinary process, de-register workers, and suspend workers either for a specified length of time or until certain conditions, such as re-training, are met.

191. Workers may not be the subject of prosecutions by both the EWRB and Commerce, since it would be unfair to punish a worker twice for the same incident.

192. The Electricity Act prescribes the steps to be followed in the disciplinary process. The EWRB has its own standing orders that complement the Act's requirements.

193. Complaints in writing are referred by the Registrar of the EWRB to the Secretary of Commerce, who appoints a Complaints Assessment Committee (CAC) to find out whether or not a complaint should be considered by the EWRB. The CAC investigates the complaint, obtains information from the parties involved and reports to the EWRB on whether or not, in its opinion, the complaint should be heard by the EWRB. If the complaint is proceeded with, the EWRB then holds a disciplinary hearing. There is a right of appeal against the decision of the EWRB to the District Court. In the year ended December 1998 the EWRB held 49 disciplinary hearings and resolved 42 complaints.

194. In the year ending December 1998 there were 57 formal complaints against registered electrical workers or workers authorised to do electrical work. In the same period there were also 75 "informations" lodged. "Informations" are complaints about people who are not registered or authorised breaching the Electricity Act. These are also investigated by the Complaints Assessment Committee.

195. The legislative requirements of the current regime impose unnecessary costs and delays in the complaints process. For example, the Registrar of the EWRB is not able to withdraw complaints if they are frivolous or vexatious or to short-circuit the complaints process where there is an admission of guilt.

196. There is no provision in legislation for instant fines for workers who fail to issue Certificates of Compliance within a certain length of time following completion of the work. This has led to some very minor complaints going through the disciplinary process.

197. The EWRB and Registrar have no power to lay complaints even if unsafe or incompetent work is detected during audits.

198. The original rationale for having complaints assessment and disciplinary hearings dealt with by different bodies was to maintain separation between these processes. In the review team's view, objectivity can also be achieved within one organisation by ensuring that the people investigating or prosecuting the complaint are not also ruling on it. Other occupational licensing boards have adopted this approach.

199. A Complaints Review Group formed by Commerce and the EWRB has established that the complaints procedures and disciplinary process can take 32 weeks or more from the time a complaint is lodged to the day of the disciplinary hearing. There is provision for complaints to be fast-tracked where dangerous work

is discovered, and this can take up to 14 weeks. In some cases the time taken from the beginning to the end of the process has been 12 months.

200. The Complaints Review Group has carried out work on ways in which the process can be sped up and made more effective. The group has identified the changes needed. Most involve changes to legislation and Commerce is seeking to have these changes included in a Statutes Amendment Bill to be introduced in the 1999/2000 Parliamentary year.

Gas

201. The processes for complaints and disciplinary hearings relating to registered gas workers are defined in the PG&D Act. Complaints are made to the Registrar of the PG&D Board, who decides whether the complaint is within the Board's jurisdiction and if the complaint has sufficient substance to be referred to the Board for investigation and disciplinary measures. The PG&D Board currently has a three-person complaints committee, which includes the Board's Chairperson.

202. On average the PG&D Board receives between 12 and 15 complaints about gasfitting per year. In the year ended March 1998, the Board's Complaints Committee investigated 34 written complaints about plumbing, gasfitting, and drainlaying work and activated four prosecutions. Fourteen of these complaints and all four prosecutions related to gas work.

203. The PG&D Board considers that the present process for handling complaints presents no problems, although they would like to see a speedier resolution of some issues.

204. However, industry representatives have been concerned that uncertified and unsafe work may be going unreported because there is no simple complaints reporting procedure. The Gas Appliance Advisory Committee (GASAC), formed at the request of the Chief Gas Engineer, has developed complaint forms which it will distribute and encourage people in the industry to fill in. This initiative is likely to lead to an increase in the number of complaints received.

Audit Process

Electricity

205. Random audits of registered workers are provided for under the Electricity Regulations. The main method of checking for competency is through inspection of work.

206. In the year ended June 1998, 1,364 inspections were carried out by auditors contracted to the EWRB. An analysis of the 664 audits carried out in the period of January to June showed that 11% of audits uncovered some degree of non compliance. This percentage was the same as for the previous year.

207. The Office of the Chief Electrical Engineer also carries out audits of electrical safety. In the year ended 30 December 1998, 35 audits of installations were carried out.

208. The most obvious deficiency in the audit process is its limited coverage of electrical work. Audits are based on workers who send in Certificates of Compliance, which means that those workers who are not obliged to send in certificates (such as electrical service technicians who don't do work that is covered by certificates) and workers who are required to certify work but do not do so, are not identified and audited. While there is no way of knowing how many electrical workers are not certifying work that should be certified, the figure has been estimated at between 30 and 50%.

209. The EWRB, in consultation with industry groups, has done considerable work on audit processes and has identified the key problems of coverage. The EWRB's circular on *Competency of Electrical Workers (20 August 1997)* states:

“...The audits carried out to date have concentrated on electrical work that has been carried out under the certificate of compliance regime. Accordingly little or no auditing has been carried out on:

- non practising licence holders
- non users of Certificates of Compliance
- electrical service technicians
- line mechanics
- the majority of electricians and electrical inspectors...”

210. The EWRB has estimated that under the existing audit process only 60 percent of all registered electrical workers are subject to audit. As only ten percent of registered workers are actually audited, the current audit process captures only six percent of all registered workers.

211. Another problem identified was the concern about the cost effectiveness of the scheme. The current budget for audits is \$482,000.

212. The EWRB proposes to move away from a concentration on random audits to a focus on ensuring competency through the practising licence requirements. The EWRB also proposes to identify high risk electrical workers for audit. These will be selected from complaints made or from records that show practising electrical workers who make very low, or no use, of Certificates of Compliance or Electrical Safety Stickers.

Gas

213. The PG&D Board also bases its audit process on the audit trail provided by Certificates of Compliance. The PG&D Board's Annual Report for the year ended 31 March 1998 recorded that 22,257 Certificates of Compliance for gasfitting were sent to the Board during that time and 338 audits were completed.

214. The audit process focuses on the competency of workers and involves a lengthy checklist covering particular skills and areas of knowledge, which a Board

auditor works through with the person being audited. An audit may take up to five visits to cover the full range of skills being inspected.

215. The PG&D Board states that it is reasonably confident that virtually all gasfitting work that should be certified is, and that their audit process is sound. However, as a result of concerns about the coverage and soundness of the audit process raised during consultation meetings, the Board has committed itself to examining its audit process.

216. The Office of the Chief Gas Engineer of Commerce also carries out audits of existing distribution systems, appliances, and gas installations.

Penalties and Remedies

217. The review team considers that the present level, range and scope of penalties and remedies are insufficient to deal effectively with the full range of misdemeanors and offences under the Electricity, Gas, and PG&D Acts.

218. The maximum penalties under the Electricity and Gas Acts are too low to match the seriousness of some offences. Currently the maximum fine for both Acts is \$10,000. The review team considers that in some cases the Acts preclude effective remedies from being applied. For instance, the EWRB cannot require a person to do remedial training unless they have also suspended the person's licence. In practice there are many cases of less than competent work where training in some aspect of work would solve the problem but suspending the person's ability to work is too severe a punishment.

219. There is no system of dealing with minor infringements that are not significant enough to justify a formal disciplinary process and a major penalty being handed down.

220. The review team recommends that there should be a review of the range, level and type of penalties and remedies applying across the Electricity, Gas, and the PG&D Acts. The review should cover the following:

- a. Making a distinction between penalties designed to punish, to deter, and merely to remind the perpetrator that improvement is required. These purposes require different types and levels of penalty.
- b. Increasing the maximum penalty for endangering the safety of others so that it is a significant punishment. The penalties should be in line with those in the HSE Act. (The maximum penalty under the HSE Act is currently \$100,000.) The review team notes that the penalty levels of the HSE Act were set in 1992 and that consideration needs to be given as to whether these need to be updated.
- c. Introducing instant fines. These could be used with the agreement of the person fined or where the infringement is clearly established. There would need to be a right of appeal from this process.
- d. Considering the use of demerit points along the lines of the Singaporean model explained in detail in the following section.

Singapore's Contractor Improvement Points System

221. Singapore's contractor improvement points system has been in operation in Singapore since 1984. This model provides a way of dealing with minor misdemeanors and infringements so that the perpetrator of them is discouraged from repeating them but not punished until offending has reached a certain point.

222. Under this system violations are divided into three categories. Category A (which incurs 5 demerit points) covers violations that pose immediate safety hazards or are of a serious nature (for example exposed live conductors).

223. Category B (3 demerit points) covers violations that may pose safety hazards or involve the wrong choice of equipment/apparatus. (Examples are: isolator or circuit breaker underrated or non weatherproof electrical devices exposed to weather or water splashing).

224. Category C (1 demerit point) covers violations involving poor workmanship or non-compliance with good practice. (Examples are means of isolation not readily accessible or distribution board or electrical device located below water or drainage pipe joint.)

225. Demerit points are awarded for each type of violation detected. They remain on the worker's record for a year. A person who has accumulated 25 points or more will have his or her licence suspended for a minimum period of three months. A second suspension incurred within two years from the date of the lifting of the first suspension will be for a further period of six months.

226. Workers who are awarded demerit points are informed in writing and given two weeks to appeal and seek reconsideration.

227. The Public Utilities Board of Singapore believes that since the implementation of the Contractor Improvement Points system, the standard of electrical installation work has improved with a drop in the number of inspections failed from ten percent in 1984 to around four percent for 1996.

16. Accident Information

Notification and Data Collection

Current System

228. The Electricity and Gas Acts require that accidents which cause either serious injury or property damage be notified to the Secretary of Commerce. There is a similar requirement under the HSE Act for serious injury accidents to employees within the place of work to be notified to OSH, although there is no requirement to notify in the case of property damage that poses no risk of injury.

229. For workplace accidents, the legislation requires companies to complete two separate forms with substantially similar information and dispatch them to the two different government agencies. Results from investigations are also held separately by the two agencies.

230. Data on fires collected by the New Zealand Fire Service includes fires believed to be caused by electrical or gas faults, but the statistical categories used differ from those used by the other agencies. Accidents to people or property through fires are not usually included in the electrical or gas accident and incident databases held by Commerce.

231. The ACC collects data based on all claims for subsidised medical treatment. This is categorised by industry group. The categories used are based on the information provided by the patient or medical provider filling in the form and are different again from the categories used by the other agencies involved in collecting data.

232. The Office of the Chief Gas Engineer maintains a database which records accidents and incidents including non-reportable matters such as minor gas escapes. This is used to identify safety problems. Information from this database is not currently published, but there are plans to publish summaries in future.

233. The Office of the Chief Electrical Engineer maintains a database and publishes an annual summary of reported accidents on the Commerce web page.

234. Information for both electrical and gas accidents and incidents is incomplete as minor ones and those involving the public are often not reported. Attempts have been made to improve the collection of information and some companies are now providing all information on accidents involving third party damage.

235. OSH collects information on workplace accidents and analyses it to determine trends and identify safety problems for the purpose of planning and targeting its safety promotion and enforcement activities. The results of OSH's analyses are not usually published but may be included in more general publication material.

Proposed Improvements

236. Each agency needs data for different purposes and each agency has a different scope. For instance, OSH has no interest in data on accidents that occur outside the place of work. However, the Government through the Secretary of Commerce, has a responsibility for monitoring the overall level of safety of the use of electricity and gas. This cannot be done effectively without comprehensive data collected on a consistent basis over time.

237. The review team considers that all agencies involved in collecting data relating to the use of electricity and gas need to work together to agree on the data that the different agencies need. One form should then be developed so that businesses do not have to report twice on the same accident.

238. Once data collection criteria are agreed, a lead agency, statutory body, or private organisation would collect and analyse all the data. This organisation could also be given responsibility for publishing data for public information and monitoring purposes. The application of information technology would enable this process to be achieved simply and efficiently and also support an early release of basic information to the industry.

Accident Investigation

239. It is proposed that OSH has the primary responsibility for investigating accidents in the workplace. However, OSH does not currently have specialist expertise in electricity or gas safety. It is likely that another government agency will need to maintain some specialist expertise in order to carry out functions related to the public safety of gas and electricity use. It would be logical for OSH to obtain the specialist expertise it requires from that agency rather than duplicate it.

17. Other Issues Considered

Residual Current Devices (RCDs)

240. Submissions were made to the review team that residual current devices (RCDs) (which, internationally, are also referred to as residual current circuit breakers, safety switches, earth leakage circuit breakers, or ground fault interrupters) should be made mandatory. Several submitters referred to a particular case of electrocution where an RCD may have prevented a fatal accident. In response to similar calls for making RCDs compulsory, the Office of the Chief Electrical Engineer produced the *Report Relating to the Application of Residual Current Devices in New Zealand 1997*¹. This report noted that the use of RCDs in higher risk areas (such as bathrooms) is already a cited means of compliance with safety obligations. The report concluded that widespread mandating of RCDs should not be introduced as this would impose a substantial cost on society (an estimated \$300 million) relative to the number of lives that RCDs could be expected to save (an estimated one life per year). Other ways of ensuring safety were thought to offer greater benefits.

241. It should be noted, however, that recent developments in Standards relating to electrical safety have seen an increasing reference to the use of RCDs. As Standards are used as means of compliance, such references will lead to greater use of RCDs.

242. The Standard NZS 3000, which has been published but does not yet have the legislative backing it needs to become compulsory, will result in the installation of RCDs becoming mandatory (instead of just a means of compliance) in damp locations and out of doors. However, it is expected that this will have little practical effect, as RCDs are generally used in these situations already. NZS 3000 is expected to be superseded by a joint Australia-New Zealand Standard, AS/NZS 3000, which will be introduced in late 1999. The development process will consider whether mandatory RCD requirements need to be extended.

243. It should also be noted that the Office of the Chief Electrical Engineer is currently sponsoring a Trans-Tasman project that aims to make recommendations on specific safety provisions for three high risk groups (children, elderly people, and disabled people) by the end of 1999. These recommendations, which may be

¹ Available electronically from the webpage of the Office of the Chief Electrical Engineer (<http://www.moc.govt.nz/ocee>).

adopted as a means of compliance, could suggest that RCDs be made mandatory for certain locations, such as schools, kindergartens, and elderly persons' nursing homes.

244. The review team rejects the proposal to make RCDs universally mandatory, but recommends that the Government actively supports projects such as the one referred to above and other industry campaigns aimed at promoting the benefits of RCDs to the public.

Utilities Act

245. One industry group suggested that the way of solving the problems of overlapping legislation was to develop new Utilities Safety legislation and a new Buildings Safety Act which would cover telecommunications, gas, electricity, water, drainage and sewerage.

246. If the review team had started with a clean slate, this proposal would have had considerable appeal. However, we were conscious that there were already sunk costs both in the existing structures and in the familiarity that workers and the public have with the existing safety regime. To radically alter the regime would have required the review team to have had both major concerns about the levels of safety possible under the existing system and compelling evidence that grouping utilities together would be able to deliver higher levels of safety that would offset the costs inherent in such a sweeping change.

247. The review team concluded that the benefits of having utilities grouped together were not sufficient to outweigh the considerable administrative difficulties of setting up and administering legislation that would involve so many agencies, trade and industry groups. It was also felt that such broad legislation could only operate at a general level and would not be able to deal effectively with the very different technical issues and risks involved. For instance, provisions that deal with the safe provision of sewerage are unlikely to deal adequately with electricity. If separate provisions were needed for the different utilities, then any advantage from grouping the utilities together would be lost.

248. The review team's view was that the problems of overlap could be solved more and effectively at present by identifying the main legislation governing safety and then aligning other legislation and resources to that.

249. The review team noted that there is a proposal within central government for a review to be carried out looking at the way in which government agencies address the full range of safety issues. If this review goes ahead it would lead to a more consistent approach across government to the whole spectrum of safety issues. One possible outcome of such a review would be the establishment of a single agency to deal with safety. This could in time lead to unified safety legislation instead of separate legislation for the different kinds of safety as we have at present.

Trans-Tasman Mutual Recognition Arrangement (TTMRA)

250. The Trans-Tasman Mutual Recognition Arrangement (TTMRA) covers equipment, technical standards and worker licensing. Both Australia and New

Zealand want mutual understanding and acceptance of qualifications for industries grouped under the Australian “utilities” umbrella, including electricity, electronics, and gas. Unless something specific is agreed, TTMRA will deem people licensed in Australia to be qualified to be licensed in New Zealand and vice versa.

251. Reciprocity arrangements for gas workers have been in place for some time. The PG&D Board assesses applicants and issues reciprocity certificates. Applicants that do not meet New Zealand skill levels are required to upskill through the ITO training system.

252. Reciprocity for electrical worker licensing has been in place for many years between New Zealand and Australian States and Territories and has been supported since 1992 by Federal/State Mutual Recognition Acts. However, there are some differences between what each jurisdiction requires in terms of licensing. Some jurisdictions require licensing for work that does not require licensing in others. A National Electrical Licensing Reference Group involving representatives of employers, unions, associations, regulators and contractors involved in electrical work is aiming to reach agreement within the next year on the removal of these differences.

253. Changes to the existing licensing system and the competencies required for licensing as a result of this review may create new differences between jurisdictions. Any differences can create problems since the 1996 declaration of Australia and New Zealand Mutual Recognition of Vocational Education and Training Qualifications aims to achieve parity by the year 2000. If the New Zealand qualifications are set at a higher level than those in Australia, those who study towards qualifications in New Zealand will bear higher training costs than their Australian counterparts. If New Zealand’s qualifications are set too low, New Zealand workers opting to practice in Australia may pose a safety risk to Australian consumers and may soon find themselves the subject of prosecution.

254. The review team recommends that the general recognition of licences and registration be addressed through the TTMRA process, but that the legislation makes provision for explicit recognition of licences and registration systems recognised as sufficiently similar to ours.

Record of Work Done

255. Some of the groups making submissions raised the difficulty of householders not knowing what work had been done by previous occupants of their dwellings or premises. This was seen as a potential hazard as wires could be cut through or pipes dislodged when further work was done.

256. It is noted that under the Building Act the local territorial authority is the “office of record” for documentation in relation to the construction of buildings. Records on electrical and gas installations that are part of work requiring a building consent are kept by the local authority. However, work that is not covered by a building permit is not generally documented and records of it are not kept at local authority offices.

257. The review team considered whether there should be a requirement to keep copies of Certificates of Compliance for electrical and gas work in a central place or deposit them with the relevant local authority. In the case of gas work, copies of all

Certificates of Compliance are required to be forwarded to the PG&D Board. The Board's database enables searches to be done if the residential address is known. These gas Certificates of Compliance describe the work and usually include a sketch. Householders can ask the Board for this information if they require it.

258. However, in the case of electricity there are over 100,000 Certificates of Compliance completed each year. The legislation requires the person who certifies the work to keep copies of the Certificates of Compliance issued, but there is no requirement to forward copies to the EWRB. The EWRB considers that because of the volume of Certificates of Compliance, it would not be cost effective to maintain a central record. If the scope of self-certification for electrical work is extended, the volume of Certificates of Compliance would increase significantly.

259. The review team also noted that with electrical work the Certificates of Compliance were likely to state the task carried out (e.g. "...installed 3 additional dimmer switches and rewired basement") rather than provide specific information that would be useful to a householder trying to locate exactly where the wires went. Requiring electrical workers to provide full wiring diagrams is seen as too high a compliance cost on the industry which is not justified merely to answer occasional questions from householders.

260. Requiring all Certificates of Compliance to be lodged with the relevant local authority was suggested. However this would have the effect of obliging the local authority to provide a service without giving them any ability to recover the costs of this.

261. It was suggested that householders could keep their own logbook of work done and pass it on to the next owner or they could deposit their own copies of the Certificates of Compliance with their local authority to keep the records on their property complete. The team fully realises that only a minority of householders would do either of these things, but could not see enough justification for imposing any more stringent information requirements on electrical and gas workers than there already are.

262. The alternative to having historic information about work that has been carried out is to check current safety levels. The Electrical Code of Practice NZECP11 contains provisions for the inspection and testing of an existing installation (e.g. a house). The review team recommends that these provisions be reviewed and a more formal inspection process for checking existing installations be created as a New Zealand Standard which could be used by the public when purchasing a house or other installation.

263. The same effect could possibly be achieved through voluntary means. For example, the Electrical Contractors Association of New Zealand (ECANZ) is promoting the Electrocheck system, which encourages homeowners to have an electrical safety check done on the wiring, outlets, main switchboard, and earthing. This check, plus the provision of a smoke alarm, was offered for \$80 at the end of 1998.

18. Implementation Process

264. Once the key points of the proposed safety regime are agreed in principle by Government, it is proposed that Commerce in conjunction with OSH will work with industry representatives to develop the specific details on each issue. These groups will also develop specific proposals for draft legislation to bring the changes into law. It is envisaged that small special purpose task forces will concentrate on particular aspects and that the work of these groups will be brought together by a Commerce/OSH team.

265. If the Government agrees in principle with the approach proposed in this report an implementation project could be set up early in 1999 with subgroups working on specific issues. This would include:

- a. the coverage of self-certification and improving compliance;
- b. risk assessment and options for covering different types of installation work and appliance repair and maintenance work;
- c. reviewing exemptions from licensing and their criteria; and
- d. appropriate penalties and remedies.

266. Proposed changes to legislation could be developed in the second half of 1999. Policy approvals could be sought in April 2000 and legislation introduced later that year. However, the timing of legislative change is decided upon by the Government and depends upon the setting of legislative priorities.

19. Financial Implications

Government

267. The safety work currently carried out by the Energy Inspection Group of Commerce is funded through levies on electricity and gas. The licensing and auditing processes for both electrical and gas work are funded from fees paid by the workers. The work done by OSH is funded through a levy on employers. There are no additional continuing costs for Government if the conclusions of this report are adopted. However, there would need to be a shift of resources between Vote Energy and Vote Labour so that OSH has an increased ability to investigate electrical and gas accidents in any place of work and carry out other work on worker safety currently done by Commerce. The scale of this activity is estimated to be about \$140,000 a year.

268. The removal of Commerce's role of servicing the EWRB is likely to result in restructuring within Commerce. There will also be set up costs for the EWRB (e.g. a computer system). While there will be one-off transition costs that are difficult to estimate with any precision, they are not likely to exceed \$500,000. Exactly what the costs are and where these lie between Commerce and any new board will depend upon decisions taken during the implementation stage of this review.

269. There are also one-off costs for the Government in implementing the recommendations of this review. These cover additional consultation with industry, the preparation of legislation and the development of codes and regulations. Total costs are estimated to be about \$260,000.

Industry

270. The improvements suggested to the current regime will make processes more effective and less costly for some parts of the industry. (For example the total saving to the supply sector through not having licensing and auditing of workers is about \$100,000). OSH may consider it necessary to introduce additional controls but any costs related to these are likely to be lower than the present costs of licensing.

271. The review team estimates that the net savings to industry of the proposed changes could be in the order of \$380,000 per year through a reduction in fees and levies.

272. Industry associations are likely to be involved in developing Codes of Practice where these are seen as necessary in their sector. However, industry associations already play an active role in working with Government on issues so this is unlikely to impose any significant additional costs.

273. Separating the EWRB from Commerce should enable the Board's costs to be lower which in turn should result in either a reduction or no increase in the cost of a licence to workers. However, the EWRB would have to fund the complaints assessment process currently funded by Commerce. At present this costs approximately \$200,000 a year. Improvements to the complaints process may reduce these costs.

274. Improving the complaints process will reduce compliance costs on companies, workers, complainants and boards involved in the process by removing some complaints from the formal track and reducing the time taken. The other changes suggested in this report will increase the effectiveness of the safety regime which will benefit workers and companies as well as the general public.

20. Recommendations

275. The full set of recommendations of the review team is listed below.

Legislative Framework

1. The HSE Act should be recognised as the primary legislation governing safety while electrical and gas work is being carried out within a place of work.
2. Special purpose Acts (currently the Electricity, Gas, and PG&D Acts) are still needed to cover the safety of completed work, the continuing safety of the work, maintenance of electrical and gas appliances and fittings, and the safe use of electricity and gas.

3. Additional control over electrical and gas hazards while the work is being carried out should be provided through regulations under the HSE Act where necessary.
4. The agencies involved in administering all relevant legislation must develop clear procedures to ensure there is a seamless interface between the Acts, and consistent information and advice for the public and industry.
5. The legislation should specify that: electrical and gas work should be done safely and left in a safe condition; people shall do only the work they are competent to do and shall be responsible for maintaining their competence; and that owners of assets are responsible for ensuring that their assets are maintained in a safe condition.
6. The Electricity, Gas, and PG&D Acts should be redrafted to be consistent in wording and approach with each other and the provisions in the HSE Act wherever possible.

Licensing and Self-certification

7. Because of the risks to the public, all prescribed electrical work and gasfitting on installations and electrical appliances should only be undertaken by those whose competence has been recognised by an independent licensing body.
8. In other situations there should be no requirement to use licensed workers and the requirements of the HSE Act will be the primary means of ensuring safety.
9. Owners of supply operations legally accessible to the public should be required to operate under a risk management system.
10. The present system of self-certification is endorsed and consideration should be given to extending it to all electrical work carried out by licensed electrical workers.
11. The Certificates of Compliance and the Electrical Safety Certificates should be collapsed into one system to avoid confusion.

Exemptions from Licensing

12. The licensing regime should provide for organisations and individuals able to prove they have alternative means of ensuring safety to apply for an exemption from the requirement to use licensed workers.
13. Existing provisions for work under supervision and for householders or similar to do defined work for themselves should be maintained.
14. An exemption should be introduced to remove the anomaly that allows manufacturers to employ non-licensed workers to assemble appliances, but requires them to use licensed workers to repair them.

15. The existing method of providing exemptions through prescriptive criteria that include requirements to follow particular instructions contained within Codes of Practice or Standards should be retained.
16. The exemption process should be reviewed with the aim of:
 - improving the administration of the process; and
 - standardising it across electricity and gas.
17. This review should include evaluating the justification for continuing with some of the current exemptions (e.g. “Person In Charge” exemption in the gas safety regime and “Qualified Electrical Engineer” in the electrical regime), and any changes required to make these exemptions more effective or to improve accountability.

Roles and Responsibilities

18. An agency of central government should have a continuing responsibility for the overall monitoring of the supply and safe use of electricity and gas, and the safety and maintenance of electrical and gas appliances and fittings. It shall also be responsible for ensuring public input into competency and technical Standards. At present Commerce has this role.
19. There will be a need for central Government to continue to facilitate the development of technical Standards on electricity and gas matters and provide public education about electrical and gas safety.
20. Licensing for both electrical and gas work should be undertaken through independent self-funded statutory boards, removed from but accountable to, the relevant Minister.
21. The primary functions of the licensing boards are recognising competency, facilitating on-going competency and disciplining workers where incompetent or unsafe work is found.
22. Boards should be required to submit business plans to the Minister each year that would include specific proposals for ensuring the maintenance of competence within their occupational groups and for increasing safety levels. Boards would also be required to report on their performance in the following year, and make the plans and performance results public.

Worker Competence

23. The present prescriptive requirements in legislation on the skills required for registration and safety training should be replaced by new more appropriate and flexible requirements established by the industry and ITOs with public input.
24. Refresher safety training should continue to be compulsory for those involved in hazardous work and this requirement should be extended to cover gas workers. Means of ensuring compliance with this requirement should be

explored further with the ITOs and boards, but could involve regulations under the HSE Act requiring certificates of competence.

25. New Zealand ITOs should be encouraged to co-operate with Australian ones in the development of unit standards.

Improvement of Processes

26. Processes which assist in monitoring the ongoing competency of workers (including audit processes) need improvement and should be reviewed as part of the implementation process.
27. The conclusions of the work done by Commerce and EWRB on expediting and streamlining the complaints process should feed into the implementation process and be shared with the PG&D Board.
28. The approach taken in the legislation to ensuring safety and the processes in the current HSE, Electricity, Gas, and PG&D Acts should be aligned as far as possible.

Accident Information

29. The agencies involved in aspects of data collection in relation to electrical and gas accidents should develop a common approach to collecting data that would improve the comprehensiveness and usefulness of the data.
30. One lead agency should have the responsibility for collecting, analysing and publishing the data for information and monitoring purposes.
31. OSH should have the primary responsibility for investigating accidents in the workplace and should be the contact point for the industry notifying workplace accidents. OSH might then delegate the investigation to technical experts in other agencies, but there would be only one notification point for the industry or public.

Cost Implications

32. There will need to be some transfers in funding and/or resources from Commerce to OSH so that OSH can take responsibility for work currently carried out by Commerce.
33. Because the recommended changes to the legislation will have an impact upon consumer responsibilities, it is recommended that the Government undertake a publicity campaign in conjunction with the licensing boards to inform the public of the changed obligations applying to electrical work and to reinforce the previous reforms carried out in 1992.

Review of Penalties and Remedies

34. The level of fines possible under the HSE Act should be reviewed and the results of this review fed into changes to the Electricity and Gas Acts.

35. The maximum level of penalties in the Electricity and Gas Acts should be increased to provide stronger deterrents for unsafe behaviour.
36. A wider range of penalties and remedies, including instant fines, should be made possible in the legislation.

Implementation

37. The Energy Inspection Group of Commerce and OSH should co-ordinate a series of task groups working on the detailed implementation of the measures proposed in this report. The task groups should develop specific proposals for the legislative changes needed, in consultation with relevant industry interests, and report back to Cabinet by 30 March 2000.

Other

38. The boards should be invited to explore the possibilities of joint administration of some functions.
39. Consideration should be given to abolishing the concept of registration in favour of licensing, since licensing recognises current competence to carry out the work rather than competence only at the time the occupation was first entered.
40. The anomaly in Section 18 of the HSE Act in relation to contractors' responsibilities for public safety while work is being carried out should be addressed.
41. The use of demerit points along the lines of the Singapore Contractors Improvement Points system should be considered.
42. More work should be done to identify a cost-effective means of ensuring the safety of installations connected to gas cylinders less than 15kg in weight.
43. Appliance safety: Existing requirements for licensing and certification should be retained until further work is done on the level of risk from repair and maintenance of gas appliances.
44. Licensing categories: Boards should review their categories of registration with the aim of making identification easier for users of electrical and gas services. The gas categories are particularly in need of amendment. A simplified version of the current classification system should be adopted.
45. Boards should consider whether re-licensing on an annual basis is the most effective way of balancing administrative convenience, compliance costs on workers, and ensuring current competence.
46. Legislation should make provision for the explicit recognition of licences from overseas which are sufficiently similar to those in New Zealand without the need for specific re-verification within New Zealand.

47. Other trades incorporating electrical work: Options for either exempting competent workers from the licensing system or for recognising them through the licensing system need to be developed in consultation with the industry sectors involved.
48. The provisions in NZECP11 on inspection and testing of existing installations should be reviewed and developed into a New Zealand Standard or other form that could be used by the public when purchasing a house or other installation.
49. The current requirement on work requiring inspection should be reviewed to reduce the compliance costs associated with it. It may be appropriate for the inspection regime, if retained, to apply only where the recognised practices are not being followed.
50. The Government should actively support projects and industry campaigns aimed at promoting the benefits of RCDs to the public.