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EEA Mission Statement

“To be New Zealand’s pre-eminent organisation for providing leadership and expertise on technical, engineering and safety issues affecting the electricity industry.”

EEA Objectives

- To represent members’ views to regulatory bodies, Government, news media and other professional bodies on engineering and associated issues relating to the electricity industry.
- To provide a forum for its members to debate issues relating to, and advance their knowledge in, the science, technology and management of the assets and resources employed in the production, transmission, distribution and utilisation of electrical energy.
- To promote the development and adoption of appropriate electricity industry standards.
- To enhance the professional development of members and promote their value to the community.

Directory

Location of Business	Ground Floor 22 The Terrace Wellington Phone: +4 473 8600 Fax: +4 473 8601 Website: www.eea.co.nz Email: admin@eea.co.nz
Accountant	John Fokerd KPMG 135 Victoria St Wellington
Auditor	Deloitte Touche Tohmatsu Deloitte House 61 Molesworth Street Wellington
Bank	Bank of New Zealand Manners Street Wellington

The Executive Committee

President	K J Mackey [<i>Transpower NZ Ltd</i>]
1st Vice President	G S Hunt [<i>ALSTOM NZ Ltd</i>]
2nd Vice President	W Spittal [<i>Beca Group Ltd</i>]
Committee	G R Gibbons [<i>Gibbons Consulting / Parsons Brinckerhoff Associates Ltd</i>] P A Burgess [<i>WEL Networks Ltd</i>] H P O'Sullivan [<i>Tri-Sheras Ltd</i>] G D Skelton [<i>Networks South Ltd</i>] T L Scott [<i>Orion NZ Ltd</i>] B I Simmonds [<i>Powerco Ltd</i>] G Watson [<i>UnitedNetworks Ltd</i>] V J Hawksworth [<i>Genesis Power Ltd</i>]

Report of the President

The Electricity Engineers' Association of New Zealand is pleased to present the 2002/2003 Annual Report to its members. It has been a year of considerable activity and achievement for the Association and this is set to continue.

For much of the year, Government and the public have had a continual focus upon the electricity supply industry. Attempts by generation, networks and consumer groups to agree on a voluntary governance framework for the industry have foundered and ultimately failed, leaving no option but direct Government intervention. The next few months will see the new Electricity Commission formed and a regulated structure for governance imposed upon the industry. The costs and impacts of this new governance structure are unknown but are likely to be significant.

Amidst these changes, the industry has had the additional challenges of another dry year, and the prospect of the Maui gas field running out ahead of schedule. The 'dry' year contributed to record prices on the electricity market and concern at the impact of this upon New Zealand's short term economic growth. The concern over the Maui gas field has raised issues over not just having sufficient reserve generation for dry years, but ensuring continued security of supply over the longer term. Demand has grown over the past decade at the rate of 3-5% per annum and many worthwhile electricity generation projects have failed to progress, often as a result of environmental concerns played out through the Resource Management Act. When the reforms first began in the mid 1980s, electricity was regarded as just another commodity - like 'baked beans'. The recent history has reinforced the vital role electricity plays in our economic and social development. For the second time in three years, consumers have been asked to voluntarily reduce electricity usage while others have cut usage anyway, unable to afford the market prices. There are many solutions being offered to solve these problems and our 2003 Conference delves into some of these. One thing is clear, it is technology that will ultimately bring the solutions. The engineers of our industry have a key role in finding and promoting these technology solutions.

Also amidst these events was continuing work by the Commerce Commission on the asset valuation, information disclosure and price/revenue/quality controls for monopoly line services. In late 2002 and early 2003, the Commission released a series of threshold papers covering price, quality and profit. The EEA submission focused upon quality issues, and reflected industry concern over the impact of reduced capital investment and maintenance strategies upon reliability, security, quality of supply and safety. The outcome of the Commission review of industry submissions was more robust thresholds than had previously been promoted by the Commission.

While the EEA has provided input into a number of wider industry issues, considerable work has also been undertaken in its key areas of technical engineering and safety advocacy, standards and professional development. EnergySafe, the Health and Safety in Employment Amendment Act and the new live line Electricity Codes of Practice (ECP46) have been areas of significant work. The work on EnergySafe is set to continue into 2003/2004 and covers the legislative changes and practicalities of implementing Government decisions. The replacement of licensing with safety managements systems and suitable competency controls will be a major focus of EEA work going forward. The aim of the EEA is to ensure that these changes build on the existing high safety and quality standards the New Zealand industry has set for itself. The completed Electrical Code of Practice for Live Line appears to have been widely adopted by industry and the Association continues to work with members on implementing ECP46 and upgrading safety and technical standards in this fast growing area of work.

In December 2002, Government launched the PowerSafe programme as an industry initiative coordinated by the Ministry of Economic Development, aimed at developing and implementing a strategic plan to improve public and workplace safety. PowerSafe has a strong focus upon people and product safety, covering

education, responsibilities, standards, competency, training and publicity. PowerSafe is being operated in parallel with EnergySafe and is consistent with the EEA's work on workplace and public safety.

The development and maintenance of new and existing standards is a key role of the EEA. In the technical/safety area, the new EEA guidelines on earthing, temporary earthing, supervision and the Line Mechanics Handbook have been major projects. As well the industry through the EEA Safety Strategy and Policy Group continue to maintain and review two key safety documents used in the electricity supply industry; the Safety Rules - Electricity Industry and the General Safety Guide - Electricity Industry. Both of these documents are being reviewed in 2003 and extensive industry comment will be sought. The extensive role the EEA plays in supporting and promoting local, national and international standards is important. As such, the Association were delighted when Richard Gibbons, a current EEA Board member, was appointed as a member of the Standards NZ Council.

One of the major successes of 2002/2003 has been the forging of stronger links between the health/safety/technical work in New Zealand and the work being done in Australia by the Electricity Supply Association of Australia (ESAA). There are many common issues and mutual information exchange has been of value to both industries.

The focus of the EEA professional development activities is upon best practice learning and this has seen the development of new partnerships between the EEA and the Queensland University of Technology, the ESAA, and other overseas organisations. As well, the Association has been proactive in encouraging greater awareness of power system engineering through its work with the Power Engineering Excellence Trust and the Electric Power Engineering Centre. The need to get greater student and career interest and involvement in electricity supply industry engineering and technical work remains a focus for the Association.

The EEA website continues to develop as the focal point for technical, engineering and safety issues within the industry. A recent independent review has highlighted further opportunities to expand web-based services to members and further work will be carried out in 2003/2004.

The success of the EEA is reflected in the growing support by companies in all sectors of the industry. A solid financial base gives us the opportunity to improve and develop new services to members and industry stakeholders. The support of member companies, individual members, and event sponsors is very much appreciated. I look forward to your ongoing support in 2003/2004.

I would like to extend my personal thanks to the members of the EEA Executive Committee for the time and effort they devote to the work of the Association. Thanks are also due to our Executive Director, Peter Berry, and his staff, for their work on behalf of members and the industry.

In an industry driven by continual change, the future is always a challenge. Government has clearly signalled further change and we will all need to be active participants in the change process if we are to maintain and enhance the quality engineering, technical and safety outcomes of our industry.

Kevin Mackey
President

Report of the Chief Executive

The following is a report of the key activity areas of the EEA over the past 12 months. Much has been achieved, and it is important to record my thanks to the many individual members and companies who have supported the work of the Association.

Legislation

Objective

To provide policy advice to government and its agencies on engineering, technical and safety issues of concern to members.

Over the last twelve months, the Association has made comprehensive submissions on a number of key legislative changes. As well, the Association has been actively involved in Government and utility working groups looking at future changes to legislation, or developing guidelines or best practice models that impact upon the electricity supply industry. Much of this work is ongoing so EEA involvement on committees or reporting outcomes to members will increase.

Key areas/submissions include:

(a) **EnergySafe**

Since the Government decisions in October 2001, the Ministry of Economic Development has been working on drafting instructions for the Energy Sector Reform Bill, which will be the mechanism for implementing the decisions.

The key decisions impacting upon the electricity supply industry are as follows:

- Remove the requirement for workers in the electricity generation, transmission, and distribution sectors to be licensed, once suitable competency controls under the Health and Safety in Employment Act (the HSE Act) are in place;
- Require safety management systems for electrical and gas supply systems only (and within those supply systems require a safety management system only for works that are 'accessible to the public or that may place the public at risk');
- The HSE Act be the primary piece of legislation governing safety while work is being carried out by electrical or gas workers, and for the safety of other workers using electricity and/or gas at work, but that responsibility for public and product safety remains with the energy sector Acts;
- The energy sector Acts and regulations be amended to remove, where necessary, those references to workplace health and safety made redundant by the transfer of relevant responsibility of the HSE Act;
- The energy sector Acts and regulations be amended to create a consistency of language with the HSE Act;

- The energy sector Acts and regulations be amended to specify the need for employers to employ people to do only work that they are competent to perform and to be responsible for ensuring that employees maintain their levels of competency;
- The definitions of the classes of accidents that are required to be reported and notified be made as consistent as practicable between the HSE Act and Electricity and Gas Acts, and that provision be made for the notification of an accident under one Act to be deemed to constitute reporting of that accident under the other Acts (if relevant).

The Ministry of Economic Development established a series of working parties and sub committees to address issues arising out of the Government decisions. This work focused on:

- Accident/Incident Reporting
- Gas Act Issues (these primarily impact upon Generation companies)
- Safety Management Systems
- Removal of Licensing

Much of this work is now completed, however, further work is being done by and MED industry focus group to better clarify the competency controls. The EEA continues to support and strongly advocate the decisions made by Government in October 2001 and is actively working in preparing guidelines on safety management systems and suitable competency controls which will provide benchmarks for both worker and public safety.

(b) Health and Safety in Employment Amendment Act 2002

The EEA made a comprehensive submission on this legislation and appeared before the Select Committee to go through the existing HSE processes in industry and the implications of the proposed legislation upon industry. While there are a number of changes which impact upon the industry, the key changes are:

- Confirmation that the Act covers people who are mobile while they work.
- Stress and fatigue are made explicit as work hazards and sources of harm.
- Changes in employee participation in OH & S.

(c) Civil Defence Emergency Management Act 2002

Lifeline utilities and emergency management responsibilities and planning.

(d) Hazardous Substances and New Organism Bill

(e) Public Works Act Review

(f) Consumer Protection Bill

(g) Electricity Regulations Amendment 2002

(h) Chartered Professional Engineers Act 2002

(i) Commerce Commission – Thresholds Review

(j) Land Transport Management Bill

(k) Ministry of Economic Development Radio Frequency Interference Review

(I) Electrical Codes of Practice (ECP46) - Live Line Glove and Barrier; Barehand; and Stick Work

For 2003/2004, the EEA will continue to maintain and further develop its close links with Government and officials to ensure the concerns of members and industry are well represented.

Safety & Standards

Objective

To foster the development of appropriate safety, engineering and technical standards and guidelines for use by members and the industry.

The Safety Strategy and Policy Group of the EEA continues to play a pivotal role in addressing industry safety issues; developing and publishing safety rules, guidelines and codes of practice; liaising with asset owners, employers and employees in industry on safety matters; monitoring safety performance; and liaising with OSH, the Energy Safety Service of the Ministry of Economic Development and the Electrical Workers Licensing Group.

Key outcomes include:

(a) Safety Rules

Response to issues and interpretations arising from Safety Rules - Electricity Industry (SR-EI) and General Safety Guide - Electricity Industry (GSG-EI) July 2000, and the publication of the Safety Rules Newsletters. A review of SR-EI and GSG-EI has begun.

(b) PowerSafe

The purpose of PowerSafe is to provide for the safe supply and use of electricity, appliances and equipment in a reliable and economical way. The initial focus of the work is on the period 2003 to 2008, and the establishment of appropriate frameworks and processes to ensure the continued delivery of safety. It also sets out the responsibilities of the industry, consumers, government and others, and looks at key elements that can successfully deliver this purpose.

The programme has a strong focus upon 'people' - consumers, public and workers. Education, publicity and communications strategies, standards, training and competency of electricity workers, and having the right safety culture are key elements.

These elements also play a part in the safety of 'product' which is another fundamental part of PowerSafe. PowerSafe identifies responsibilities and issues relating to the safety of the electricity generation and network systems' domestic, commercial and large industrial installations; imported or locally manufactured appliances; new technology; and other areas where the provision of sector specific electrical systems requires special safety solutions (eg. medical/electrical).

Underpinning the delivery of PowerSafe is the need to have an appropriate, supportive legislative framework, which provides for the efficient and cost effective achievement of improved electrical safety outcomes. This can be best achieved through consistent performance-based legislation that assigns clear accountabilities, while allowing appropriate flexibility to achieve safety outcomes. This framework will come through the Government's introduction of the EnergySafe programme, which involves restructuring and realigning existing legislation, and enhancing safety compliance through industry, national and international standards and guides, and other 'best practice' documents.

(c) Industry Safety Statistics

This project is underway and is focusing on:

- KPIs for Safety/Standard National Measures
- Accident/Incident Analysis
- Industry Trend Reporting

(d) Maritime Safety Authority Rules – Part 60

Over recent years there were two well-publicised events involving serious injury and a fatality relating to yacht masts contacting power lines. One was on a large recreational lake, the other adjacent to a slipway.

While the design of signage required on crossings is set down in the Buoys and Beacons booklet published by the Maritime Safety Authority (MSA), the responsibility for setting height and marking requirements and implementing these for power line crossings is currently unclear. This is a national issue, requiring a consistent approach in order to improve public safety, minimise liability potential to the electricity supply industry and to encourage uniform and consistent warning information to the public.

(e) Civil Aviation Authority – Marking of Overhead Lines

Transpower are trialing marker balls on line going across the Hutt Valley, near Haywoods Substation, and the results of that study will be reported through the EEA working group and available in late 2003.

(f) National Committee on Live Work (NCLW)

The new Electrical Codes of Practice 46 relating to Glove and Barrier, Barehand and Stick work were completed and implemented in April 2003. The ongoing work programme includes guides on gloved hand; field audits; substations; low voltage networks; and overhead rail networks.

(g) EEA Guides

A number of key industry health, safety and technical guides have been worked on in 2002/2003. These include:

- Guide on Manual Reclosing (*completed*)
- OSH Underground Services Guide (*completed and published*)
- Lineman Work Codes (*proposed*)
- EEA Guide on Live Low Voltage Safety (*proposed*)
- Guide on Helicopter Live Line Work (*draft*)
- Portable Appliances/Equipment Used in Industry (Personal Protection Equipment and Tools) (*completed*)
- Pole Climbing (*draft*)
- Guide for Working Near Gas Pipes (*draft*)
- EEA Guide on Over Dimensional Loads (*draft*)
- EEA Guide for Purchase of Harnesses & Lanyard for Climbing and Working on Transmission Towers (*completed*)
- EEA Supervision Guide (*completed*)
- EEA Guide on Public Safety Near Electricity Network Assets (*draft*)
- EEA Guide for Testing Consumer Installations (*draft*)

- EEA Guide for Temporary Earthing
- Transformer Fire Hazard in Buildings
- Logging Near HV Lines

(h) Review of Guides

- EEA Guide on Climbing of Transmission Towers (*under review*)
- Guide for the Use of EWP's
- Guide for Helicopter Use in Distribution Networks
- Line Mechanics Handbook 2003
- Guide to the Connection of Generation Plant
- Handbook for Emergency Personnel

(i) Earthing Guide

The Guide has been completed and has two key objectives:

- The development of an industry code setting out the principles of safe power system earthing. The code will use risk management principles and strategies to determine the degree of safety required for various earthing arrangements.
- To provide guidance on power system earthing design and testing to comply with ECP35.

(j) Standards

Membership of the:

- Joint Electrotechnology Standards Setting Board (Australia/New Zealand)
- New Zealand Electrotechnology Standards Committee
- Electricity Supply Industry Sector Board
- AS/NZS 4541 : Fire Protection in Buildings
- AS/NZS 1891 : Industrial Fall-Arrest Systems and Devices
- AS/NZS Joint Committee on Pressure Equipment (ME/I)

(k) Electricity Supply Association of Australia (ESAA) Committees

- National Electricity Networks Safety Steering Committee (*observer*)
- Health and Safety Network (*observer*)
- Guidelines for the Design and Maintenance of Overhead Distribution and Transmission Lines – (b) 1/1999

(l) Utilities Advisory Group

The EEA was invited to attend a meeting between utility associations and the Road Controlling Authorities Forum members. The RCA includes all 74 local authorities and Transit NZ who are responsible for management of roading corridors in New Zealand.

The Utilities Advisory Group (UAG) is looking at a number of road reserve issues:

- national consistency;
- confirmation of rights and responsibilities;
- fairness and reasonableness of agreements;
- a clear legislative framework for the management of utilities and roads; and
- RMA/District Plans.

The Electricity Networks Association has taken a primary role in this UAG with the EEA providing technical support.

(m) Code of Practice for Working in the Road

The Code is completed and is available from Standards New Zealand. The objectives of the Code are to:

- Minimise costs for end use consumers;
- Minimise compliance costs;
- Maximise coordination of Utilities on network construction and maintenance;
- Promote consistency and cost minimisation across TLAs;
- Deliver performance based outcomes; and
- Focus on responsible self-regulation.

The scope of the National Code encompasses:

- Coordination and rationalisation of existing documentation;
- Integration of health and safety requirements into one;
- Minimisation of public inconvenience and facilitation of Utility access;
- Promotion of inter-Utility relationships; and
- Inter-Utility competence.

(n) EEA Electricity Supply Industry Safety Award 2002

The EEA Electricity Supply Industry Safety Award 2002 was presented to Delta for their report on the Delta Safety Awareness Programme. Connetics Ltd received a Merit Award for their report on Improving Workplace Literacy Skills.

(o) EEA Safety Workshop – October 2002

This workshop was attended by over seventy industry health and safety specialists, as well as members of the ESAA Health & Safety Working Party.

Professional Development

Objective

To provide policy advice on professional development issues for electricity industry engineers and to facilitate, where appropriate, professional development courses, workshops and other fora to members and industry.

Key outcomes include:

(a) Electric Power Engineering Centre/Power Engineering Excellence Trust

The Trust and Centre were launched at the 2002 EEA Conference.

(b) University Scholarship

There were four scholarships offered to engineering students in Auckland and Canterbury. The 2002/2003 recipients were:

- Nathan Ruffell (*Auckland*)
- Ashutosh Upreti (*Auckland*)
- David Taylor (*Canterbury*)
- Craig Brown (*Canterbury*)

(c) Professional Development

One of the key issues for the EEA is the need to provide for updating the currency of technical knowledge of EEA members and the wider industry. With the changes in the Chartered Professional Engineers Act 2002, it is important registered engineers maintain records of their CPD hours. After discussions with IPENZ, EEA courses/workshops have been accredited as IPENZ CPD courses. The EEA has provided a range of professional development courses, workshops and seminars which have focussed upon the key technical/safety and engineering needs of the industry. In June 2002, the EEA piloted a Queensland University of Technology (QUT) course in New Zealand. The course was well attended and as a result the EEA and QUT have developed a partnership programme to bring to New Zealand a number of their courses from their Postgraduate Electricity Supply Course Programme. The programme for 2002/2003 included:

- Distributed Generation Workshop (CAE) – June 2002
- OH Line Design Electrical (QUT) – June 2002
- OH Line Design Mechanical (QUT) – February 2003
- Safety Workshop – October 2002
- Live Line Workshops (MED) – March 2003

Over 300 industry staff and members attended EEA courses/workshops/seminars and we were able to attract a number of Australian industry representatives to these EEA fora.

For 2003/2004, the EEA has identified a programme of courses/workshops/seminars which will enhance members professional development and knowledge. As well, the Association will be working closely with industry, other professional associations (ie. IPENZ, IEE, IEEE), the Electric Power Engineering Centre and other universities, to improve the profile of power engineering.

(d) EEA/EA Technology Travel Award 2002

The Award recipient was Carmen Yip who attended the EA Technology course on Power Quality. A copy of Ms Yip's report is available on the EEA website at www.eea.co.nz.

Marketing & Communications

Objective

To promote the benefits and value of the EEA to industry and government particularly in the engineering technical and safety performance of the electricity supply industry.

The Association continues its liaison with industry and government to ensure their awareness of technical engineering and safety issues in industry and the role of the EEA in coordinating industry advocacy on these

matters. Additional to this, the EEA has focused on two key areas relating to improving information/communication with members and industry:

- Website Services
- Marketing of the EEA; services to members and the wider industry

(a) Website Review

Ease of use, regular updating and expanding the services on the website have been the focus of much of the website work. For 2003/2004, the EEA is looking to improve the management and productivity of the website, with increased services being available online.

(b) Membership

Recognition of the benefits of EEA membership to industry companies as well as individuals, resulted in an increase in corporate membership and individual membership. The EEA individual membership has increased to 325, with corporate membership including over 30 organisations.

The Association also continued to implement its “user pays” pricing strategy, which reflected the benefits “non-members” derive from the work of the EEA. Non member participation in EEA activities continues to increase and they pay a premium for services, publications and other activities provided by the EEA.

Administration & Finance

The Board has received reports on key finance and business issues for the EEA. These include:

- Monitoring of EEA financial reports, business and strategic plans for 2002/2003
- Review and Update EEA Accounting Policies
- A Review of the EEA Constitution
- Budgets for 2003/2004
- Review of Audit Report 2002/2003
- Development of the EEA Strategic Plan for 2003/2006

Peter Berry
Executive Director

April 2003



Electricity Engineers' Association of New Zealand (Inc)

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