

4 September 2009

## **EXPOSURE DRAFT - ELECTRICITY (SAFETY) REGULATIONS 2009**

### **BACKGROUND**

1. In 2006 significant amendments were made to the Electricity Act 1992. Changes to the Electricity Regulations 1997 are required as a consequence of those amendments and the opportunity has been taken to update the regulations to improve the overall clarity and to strengthen the focus on public safety and the avoidance of property damage.
2. This document guides you through some of the key aspects of the proposed Electricity (Safety) Regulations and explains the exposure draft process.
3. The regulations have been drafted following Cabinet decisions in 2008 and 2009, subsequent to the 2007 Discussion Paper on the Proposed Electricity (Safety) Regulations.
4. The regulations have been fully rewritten using more user-friendly wording and have also been rearranged to group together the regulations for appliances, installations, supply systems and works.
5. The scope of Prescribed Electrical Work (PEW) has been moved into a schedule to the regulations (Schedule 1)
6. The listing of all standards and codes of practices that are relevant to the regulations have also been moved into schedules (Schedules 2 and 4)
7. More than 50 per cent of the current technical and administrative provisions have been retained. The critical drivers of the majority of actual changes include changes to the applicable standards, removal of the technical requirements that have been transferred to AS/NZS 3000 and providing for Safety Management Systems (SMS).
8. The requirements supporting safety have been retained and reinforced where appropriate. Risk management principles have been utilised to require higher levels of initial and ongoing safety verification in circumstances of higher safety risk.

### **EXPOSURE DRAFT PROCESS**

9. The exposure draft process provides an opportunity for key members of the electricity industry to comment on the technical nature of the regulations and to suggest improvements for their workability for your industry. It is your

opportunity to assess the draft regulations against the policies that have been approved and to consider whether this proposed policy implementation is practical for your sector.

10. There are a few issues that we are still considering and would value your comments on: in particular the list of standards to be listed in Schedule 4. The proposed list for Schedule 4 is included in this document. We would also appreciate any comments on the Secretary's exemption powers.
11. Any comments and suggestions on the regulations should be sent by **29 September 2009** to Energy Safety, Ministry of Economic Development, 33 Bowen Street, PO Box 1473, Wellington or emailed to [vanessa.horne@med.govt.nz](mailto:vanessa.horne@med.govt.nz)

### **ELECTRICITY AMENDMENT ACT 2006**

12. In 2006 major changes were made to the safety provisions of the Electricity Act 1992. These included:
  - The addition of two safety related purpose statements;
  - Changes to the occupational licensing provisions for electrical workers to require registration and licensing classes and competency requirements to be defined by the Electrical Workers Registration Board (EWRB) rather than in regulations; and
  - A new requirement for safety management systems to be in place for larger generation facilities and distribution networks.
13. The Electricity Amendment Act 2006 is not yet fully in force but will be brought fully into force in conjunction with the Electricity (Safety) Regulations 2009. A regulated delay will be provided within the regulations for the new Safety Management System (SMS) provisions for the electricity supply industry.

### **ELECTRICITY (SAFETY) REGULATIONS 2009**

#### **GENERAL SAFETY REQUIREMENTS – SAFE USE OF ELECTRICITY**

14. Part 1 of the regulations sets out the basic safety rules for the electrical safety of works, installations, appliances, fittings, designs and associated equipment. The previous 'mandatory requirements' have been converted to become categorised as unsafe conditions where installations, fittings, appliances are deemed to be unsafe in specific circumstances.
15. The regulations maintain most of the existing provisions for the safe use of Electricity, but noting the transfer of some functions to the Health and Safety in Employment (HSE) Legislation, the requirements are refocused onto public and personal safety.
16. New terms have been introduced for the Medical Electrical provisions to align the regulations with the emerging internationally defined terms.

## **SYSTEMS OF SUPPLY**

17. While the majority of the current requirements for systems of supply are being retained in part 2 of the regulations, some of the provisions are being converted to become prescribed as unsafe conditions.
18. The only notable change of a technical nature is the removal of the 10 ohm requirement for the Multiple Earthed Neutral (MEN) system neutral earthing impedance.

## **SAFETY MANAGEMENT OF WORKS**

19. The majority of the changes affecting the works sector (Part 3 of the regulations) come from changes to the registration/licensing functions of the Electrical Workers Registration Board EWRB and the introduction of SMSs.
20. Under the Electricity Amendment Act 2006 the ranges of work and categories of registration and worker competencies will be set by the EWRB as will the issuing of Employer licences. So these provisions are being removed from the Regulations.
21. The previous requirements applying to High Voltage (HV) and live-line work, where these relate to work practices in particular, are transferred to part 7 of the Regulations in preparation for transfer to coverage by The Health and Safety in Employment legislation. A few of the provisions applying to HV and live-line work that relate to public safety or installations are retained in the regulations where appropriate, and have been clarified to relate to public safety and installations, and not worker safety or work practices.
22. The introduction of requirements for SMSs creates the majority of the changes to the technical regulations relating to works.
23. The establishment of implementation dates, transitional provisions, accreditation and auditing provisions and the scope and coverage of SMSs are established in the regulations based principally on the provisions already set in the Electricity Act 1992.
24. The technical and administrative provisions that apply when an SMS is not in operation are provided, essentially based on the existing provisions. These recognise the 5 safety fundamentals associated with electricity distribution systems: strength of works, safety distances, earthing systems, step and touch potentials and systems of supply.
25. Fundamental safety requirements are also set irrespective of SMSs in the general section of the regulations.

## **SAFETY MANAGEMENT OF INSTALLATIONS**

26. The Electricity Amendment Act 2006 expands the scope of PEW to include: testing, certification, inspection, and supervision as well as design. While Part 4 of the regulations generally picks up testing, inspection and certification as PEW, the regulations only implement controls over design in relationship to the

application of AS/NZS 3000 part 1 and do not implement these requirements through the PEW route.

27. Any generation supply systems/equipment that is on premises, whether there is any supply to other people or not, will be subject to installation regulatory requirements. Similarly the 'installation', i.e. the fittings that are supplied from the systems/equipment/generator within those premises without a point of supply, are also subject to the installation regulatory requirements.

#### *PEW and testing, inspection and certification*

28. The expansion of PEW however does not cover testing, inspection or certification that is not directly associated with the other types of PEW. This means that the testing, inspection and certification of existing installations, and the issuing of Warrants of Electrical Fitness (WOEFs) is not PEW, and therefore will require separate controls outside of the EWRB regime over who may perform this work.
29. Previously the categories of registration were set by regulation; however the Electricity Amendment Act 2006 allows the categories to be set by the EWRB. The effect of this is that the regulations cannot refer to actual registration categories, as is the present case, for example, for work requiring inspection by a registered inspector. The limitations of the work registered workers may perform has been transferred from regulations to the Act in a generic way by allowing PEW to be carried out only in accordance with registration categories set by the EWRB.
30. The testing, inspection and certification functions that are not PEW, therefore refer to persons who are registered to carry out similar types of PEW work.
31. Testing will require certification and the various certification requirements will be brought together in the requirements applying to connecting installation work to a supply.

#### *Employer Licences*

32. Under the Electricity Amendment Act 2006, employer licences are issued by the EWRB, who only have authority in relation to PEW. Reflecting this, the non PEW inspection functions are no longer within the work that can be carried out under an employer licence.

#### *Design*

33. Part 4 of the regulations introduce requirements for designs to be certified by the designer. This is reinforced when the performance based Part 1 of AS/NZS 3000 is being applied. There is also a general requirement for the design of appliances to be safe.

#### *AS/NZS 3000*

34. The regulations (Part 4) implement AS/NZS 3000 through two alternative routes:

- Applying the prescriptive requirements of Part 2; or
  - Applying the fundamental requirements of Part 1.
35. Installers will be required to declare which route they have employed as part of the certification requirements. AS/NZS 3000 was written for this approach.

#### **SAFETY MANAGEMENT OF APPLIANCES AND FITTINGS**

36. The majority of the present regulatory systems - such as the three level risk based compliance regime and the use of AS/NZS 3820 to set fundamental safety requirements as part of a joint trans-Tasman regulated market that apply to appliances and fittings - have been retained in part 5 of the regulations.

37. The significant changes to the regime include:

- An intensification of the controls applying to the medium risk category for appliances and fittings: A requirement to hold a test report has been added;
- An alteration to the performance-based compliance model: the new regulations will require the supplier to choose one of three methods of compliance, and that choice will determine the compliance requirements;
- An increased clarity of recognised compliance paths: the regulations will recognise three compliance paths, namely, complying with a recognised standard, complying with AS/NZS 3820 or complying with the NZ China EEEMRA;
- An increased application of international standards for product standards: where possible IEC standards, or IEC standards varied by local deviations will be recognised to ensure greater compatibility with international markets;
- An increased application of international standards for certification systems: international standards will be applied for compliance methodologies ISO/IEC 17050 for the Supplier Declaration of Conformity (SDoC) system and ISO guide 67 for the approval system;
- Prescribed Electrical Work in medical locations and hazardous areas has been extended to include extra low voltage; and
- The introduction of recognised standards for harmonics and flicker: compliance with the international standards for harmonics and flicker will not be mandated, however they will form a compliance benchmark for enforcement of interference requirements.

38. The regulations also contain expanded technical requirements for:

- RCD performance;

- The switching of the 'neutral'; and
- The failsafe requirement for portable RCDs.

### **TRANSITIONAL ARRANGEMENTS**

39. Part 8 of the regulations implements a "soft" change over, allowing a two year period in which installation work may continue, and equipment can be sold, under the old regulations. This is very similar to the arrangements of previous amendments and, as previously, there will be a basic requirement for safety to be achieved.
40. The transition will recognise existing SDoCs, approvals etc as being adequate and allow them to be applied even to products in transit to New Zealand. The new regulations are seen as a refinement to the existing system and not an urgent response to a serious compliance problem.

### **EMPLOYER LICENCES AND BOARD PROVISIONS**

41. Part 6 retains the few remaining regulations that are required relating to employer licences and the EWRB. Under the Electricity Amendment Act 2006 the EWRB will be fully responsible for licensing, registration and competency relating to PEW.
42. The EWRB has conducted initial consultation on registration classes and licensing requirements and further consultation will occur now that these regulations are ready for implementation. In particular, the issues raised by commentators relating to limits of work for trainees, processes for the issuing of employer licences and the application of fees will now be progressed by the EWRB.

### **WORKING PRACTICES – DEPARTMENT OF LABOUR**

43. Part 7 maintains the existing provisions from the Electricity Regulations 1997 that address worker safety issues. It is intended that this part will be repealed at a later date when the relevant worker safety components have been brought under the Health and Safety in Employment Act 1992. The Department of Labour will prepare a public discussion document with options for public consultation by the end of 2009. Where appropriate, amendments have been made so that the regulations use consistent language and terminology.

### **SCHEDULES**

44. Prescribed Electrical Work has been moved to Schedule 1.
45. All the standards and codes of practice referred to in the regulations are listed in schedule 2. This listing will be updated in conjunction with Standards New Zealand prior to the Electricity (Safety) Regulations 2009 being enacted.
46. Forms for infringement offences are established in Schedule 3

47. Schedule 4 refers to the Standards for appliances and fittings and the specific safety regime applies only to these appliances and fittings. The focus is on household and similar applications, leaving the safety of industrial equipment more in the hands of the users. Where those products have Standards that are adopted IEC Standards, and they have been adopted using an appendix of deviations (e.g. Appendix ZZ of AS/NZS 60335.1) then the actual AS/NZS Standard will not be cited and the associated IEC will be cited together with the variation appendix from the AS/NZS Standard. This will enhance our international alignment and WTO commitments.

## **FUTURE ISSUES**

### *Fees*

48. Cabinet has agreed that fees payable under the current Electricity Regulations 1997, including Certificates of Compliance (CoC) charges, should not be amended by the new regulations. A full fees review is required and this will occur during 2010.

### *Gas (Safety and Measurement) Regulations 2009*

49. The Ministry and PCO are finalising the exposure draft of the new Gas (Safety and Measurement) Regulations. These new gas regulations will be aligned as closely as possible to the provisions of these regulations and are expected to be released as an exposure draft within the next few weeks.

## **AUSTRALIA**

50. The “new” regulatory regime has been designed to facilitate improved enforcement and compliance by clarifying the recognised compliance paths. It has also been designed to have compatibility with the evolving proposals for reviewing the Australian State and Territory electrical equipment Regulatory regimes.

## **Proposed list of Equipment Standards – Schedule 4**

All appliances covered by an AS/NZS 3350 series Standard, where that Standard remains valid beyond 31 Dec 2009.

All appliances covered by an AS/NZS 60335 series Standard.

All portable power tools covered by an AS/NZS 60745 series Standard and AS/NZS 3160 for all others

All lighting fittings covered by an AS/NZS 60598 series Standard

All lights covered by an AS/NZS 60432 Series Standard

All medical devices covered by an AS/NZS 3200 series Standard or IEC 60601

All power supplies covered by an AS/NZS 60558 Series Standard

All fittings covered by an AS/NZS 3100 series Standard

All declared Articles and Supplier declaration items

All fittings and appliances referenced by AS/NZS 3000:2007

Fittings and Appliances as required for the NZ – China FTA's EEEMRA

All socket outlets connectors etc. associated with domestic and similar applications - AS/NZS 3100 series etc

All products having a Standard listed in AS/NZS 4417

All switch-gear covered by an AS/NZS 3439 or AS/NZS 3947 or IEC aligned Standards

All RCDs covered by IEC 61008, IEC 61009 and AS/NZS 3190.

Building wiring Cables covered by AS/NZS 5000

Audio video equipment covered by AS/NZS 60065

Cables covered by AS/NZS 60227 and AS/NZS60245

LV switchgear covered by AS/NZS 60439

Switches covered by AS/NZS 60669

LV Circuit Breakers covered by AS/NZS 60898

Welding Equipment covered by IEC 60947 and AS/NZS 3947

Lighting Control gear covered by AS/NZS 61347

IT equipment covered by AS/NZS 60950