Electrical Equipment Safety System & RCM for Australia & New Zealand

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1 Electrical Equipment Safety System (EESS)

1.1 General

The Electrical Regulatory Authorities Council (ERAC) has introduced model legislation and Equipment Safety Rules for nationally-harmonised electrical equipment safety certification and registration requirements. These safety rules will apply to the sale of new electrical equipment, including sales via the world-wide web, but do not cover the sale of second hand goods that are covered by regulations administered by State, Territory and New Zealand regulatory authorities.

ERAC has scheduled the commencement of the EESS for 1st March 2013 however it remains to be seen if all States and Territories will be part of the new national system on that date. Transitional arrangements are in place to introduce the EESS in a coordinated way so that the mandatory requirements of the legislation will commence at the same time across Australia.

Some Australian States and Territories and New Zealand are already advanced in the process of adopting the new requirements in their local legislation. The Queensland State Parliament passed the model legislation on 22 March 2011. Other jurisdictions are also working towards adopting the model legislation. Public and industry awareness activities will be organised by ERAC members prior to the launch. Details of the EESS are available to the public on the ERAC web site at http://www.erac.gov.au, which is subject to change.

1.2 Risk management levels and scope

A three-tier system of risk management will be adopted under the EESS. Every responsible supplier in Australia and New Zealand must ensure that they meet the established regulatory framework, ensure that their equipment is electrically safe, that it complies with the relevant safety standards and that it is marked with the Regulatory Compliance Mark (RCM).

Note 1: A responsible supplier is a person, company or business that manufacturers in-scope electrical equipment in Australia or New Zealand, or imports in scope electrical equipment into Australia or New Zealand. They must be a legally identifiable Australian or New Zealand entity holding an Australian Business Number (ABN), or a New Zealand Inland Revenue Department (IRD) number.

Risk based classifications of equipment are:

- Level 1 = low risk,
- Level 2 = medium risk and
- Level 3 = high risk equipment.

Level 2 and level 3 equipment are defined in AS/NZS 4417.2, and these will also be listed on the ERAC web site. All other types of in-scope electrical equipment are level 1.

‘In-scope’ refers to all new electrical equipment that is designed or marketed as suitable for household, personal or similar use, with a rated voltage of 50 V to 1000 V AC RMS, or 120 V to 1500 V ripple-free DC.
Electrical equipment claimed to be exempt by a supplier, but is available for the general public to purchase or use, is not exempt based on the claims alone that it is designed, marketed, or intended for non-domestic use, if it is a type of or similar to equipment that is available to the general public. If the regulator claims that an item is within the scope of the system, it will be taken to be that way unless the responsible supplier or manufacturer proves the contrary is true. For exempt electrical equipment, other existing regulations specifically apply in the workplace.

*Note 2: Electrical equipment includes any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire used for controlling, generating, supplying, transforming or transmitting electricity within the scope of the EESS.*

### 1.3 National Database

A national database containing information such as certificates of conformity, registration of suppliers and registration of electrical equipment (including electrical equipment ‘product families’) is being established at [www.erac.gov.au](http://www.erac.gov.au). This database will be used by regulatory authorities, certifiers, suppliers, wholesalers and retailers. Consumers will also be able to check electrical equipment registrations from the EESS website.

Responsible suppliers have the main obligation for complying with the EESS. The legislation requires responsible suppliers to ensure that the in-scope electrical equipment they sell or supply meets relevant standards and is electrically safe. Failure to do so could result in significant penalties. Responsible suppliers are required to register their details on the national database, for a fee of AUD $200, and this must be renewed annually. They must also keep any changed details up to date within specific time limits. In addition they must register all types of their level 2 and level 3 products on the database, at a cost of AUD $75 per registered type per supplier annually; in 1, 3 or 5 year renewal time frames. A responsible supplier may delegate some of its responsibilities to its Authorised Representative by written authority (e.g. facilitator, consultant or certifier).

As part of the registration process, responsible suppliers must make a declaration that all the equipment they sell (including any level 1 equipment) meets relevant standards and is electrically safe. Compliance folders required to be kept for level 2 (medium risk) equipment can be optionally uploaded onto the database. Level 3 (high risk) electrical equipment requires a valid Certificate of Conformity from an authorised third-party certification body to be recorded on the database before it can be sold in Australia and New Zealand.

*Note: “Sell” includes: sell by wholesale, retail or auction; supply in trade or commerce or under an arrangement; hire; agree, attempt or offer to sell; keep or expose for sale; and cause or permit to be sold.*

The responsible supplier’s declaration applies to all electrical equipment generally, and is the only declaration required that will cover level 1 (low risk) electrical equipment.

For level 2 and level 3 electrical equipment, responsible suppliers must make equipment declarations and pay an equipment registration fee. The equipment declaration is equipment specific and is made when equipment of this type is registered on the database. These declarations state that the equipment meets relevant standards in a way that is required under the EESS for that classification of electrical equipment.

In situations where a multinational company has related corporations supplying the same electrical equipment in both Australia and New Zealand, they will only need to register that equipment once in the register to cover both countries.

### 1.4 Evidence of Conformity

The EESS provides for evidence of conformity requirements proportional to each risk level. All in-scope electrical equipment must be electrically safe and meet the relevant standards.

#### 1.4.1 Evidence for level 1 electrical equipment (low risk)

The responsible supplier must keep documentary evidence, in English, that the items meet the relevant standard at the time the items were either manufactured or imported. This evidence must be kept by the responsible supplier (or be able to be accessed within 10 working days), for a period of 5 years starting on the day the item is last manufactured or imported by the responsible supplier.
1.4.2 Evidence for level 2 electrical equipment (medium risk)

A responsible supplier is required to keep a compliance folder, which must be accessible within 10 working days, or may optionally be uploaded to the national database when the electrical equipment is being registered. A compliance folder is a document recording evidence that the equipment type being registered meets the relevant standards. It must be in English, and include a description of the electrical equipment, and the compliance test reports completed by an approved testing entity or a suitably qualified person.

Note: the description of electrical equipment includes make & model number, specifications, design documentation including circuit diagrams and drawings, copies of ratings label, colour photographs showing internal and external construction, and instructions for installation/operation/safety “etc.”.

1.4.3 Evidence for level 3 electrical equipment (high risk)

The evidence of compliance for level 3 equipment is a valid certificate of conformity, issued by a recognised certification body (CB or “certifier”), for each item of level 3 electrical equipment, or family of items. A certificate of conformity will normally have a term of five years maximum, and may be issued to a certificate holder anywhere in the supply chain, including outside Australia and New Zealand. Certifiers would usually place the certificate of conformity on the national database for the responsible supplier to link to their equipment registration and declaration. Responsible suppliers may be certificate holders in their own right, or they may use a certificate of conformity from another certificate holder under agreement with that certificate holder.

1.4.4 Evidence - General

The evidence held by the responsible supplier for any level of risk category may not allow the sale of equipment if a regulatory authority has issued a Notice that the relevant standard has been amended due to the standard not being adequate for all the risks of the particular equipment. If the electrical equipment in question would fail the amended standard subject to such a Notice, the equipment would need to be brought into compliance, and in any case must be re-tested and possibly re-certified as per the requirements of its risk category.

Note: cord sets, plugs and cords that are permanently attached to in-scope electrical equipment do not have to be separately registered by the electrical equipment responsible supplier. However, a valid certificate of conformity is still required for the level 3 parts (plug or connector or cord).

1.5 Certifiers (CBs) and test facilities for level 3 electrical equipment

Certifiers include Australian or New Zealand electrical safety regulators, and any recognised external certification scheme designated by a regulator to certify level 3 electrical equipment. A list of certifiers and applications to become a certifier will be made available on the ERAC certification portal. A prerequisite to designation for Australian and New Zealand based third party CBs is that they must be accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).

Overseas-based designated third party CBs must be appropriately designated under a mutual recognition arrangement or a free trade agreement to which Australia is a signatory. They must also be accredited by an international equivalent to JAS-ANZ, and is a signatory to the International Accreditation Forum multilateral agreement (IAF MLA) with a scope that includes EESS.

All designated CBs must be endorsed to operate throughout Australia and New Zealand based on their accreditation and recognition.

Certifiers must be independent of the supplier and, with limited exceptions, they can normally only accept test reports from recognised testing facilities. If a certifier does not use the national database in real time, they
must upload certain certificate of conformity data to the national database within three business days of issuing the certificate.

Recognised testing facilities include laboratories accredited by the Australian National Association of Testing Authorities (NATA), or International Accreditation New Zealand (IANZ) or by an International Laboratory Accreditation Cooperation (ILAC) mutual recognition agreement (MRA) signatory. IECEE CB scheme testing laboratories (CBTLs) may also be used, provided the CB test reports are accompanied by the CB test certificates. Other recognised testing facilities may include laboratories in countries recognised for applicable tests under government-to-government free-trade agreements or MRAs.

1.6 Marking

All level 1, level 2 and level 3 in-scope electrical equipment must be marked with the Regulatory Compliance Mark (RCM), which is specified in detail in AS/NZS 4417.1 (the 2012 edition was published on 29 June 2012). See Figure 1.

The RCM should be placed on the external surface of the electrical equipment as near as possible to the model identification. It may additionally be placed on promotional material associated with the equipment. Alternatively, it may be placed on the packaging for that item where it is not possible to put the RCM on the item itself due to the size or nature of the equipment. For equipment with a built-in display, the RCM may be presented via the display if the accompanying documentation shows how to access the RCM image. There is no supplier identification number or approval number required with the RCM, as the regulators will rely on the supplier, manufacturer and model information in the national database for identification and enforcement purposes.

1.7 Relevant Standards

1.7.1 Level 1 Standards

The relevant standard for level 1 in-scope electrical equipment is:

(a) If there is a Standards Australia or joint Standards Australia and Standards New Zealand standard that applies specifically to the type—that standard together with AS/NZS 3820 (Essential safety requirements for electrical equipment); or
(b) If there is not a Standards Australia or joint Standards Australia and Standards New Zealand standard that applies specifically to the type and there is an IEC standard that applies specifically to the type—the IEC standard together with AS/NZS 3820; or
(c) If neither paragraph (a) nor (b) applies—AS/NZS 3820.

Note 1: Some equipment may be reclassified to a higher risk level after a consultative and formal risk review process has been conducted. If equipment is reclassified to a higher risk level, responsible suppliers will have a 12 month period in which to meet the additional compliance & registration requirements.

Note 2: For ICT equipment in general, compliance with AS/NZS 60950.1:2011 (equivalent to but not identical with IEC 60950-1 2nd edition) will be sufficient to meet the requirements of AS/NZS 3820, however the power attachment cord sets and any associated external power supply units may be risk level 3 parts (depending on their rating and application), requiring certificates of conformity.

There is no specific evidence of conformance requirement for level 1 electrical equipment, however responsible suppliers of level 1 electrical equipment must hold evidence that the equipment meets the relevant standard as in force at the time the equipment was manufactured or imported by the responsible supplier.

1.7.2 Level 2 or level 3 standards

A standard for a type of level 2 or level 3 in-scope electrical equipment applies if it is a standard:
(a) shown in AS/NZS 4417.2 as the relevant standard for the type, and the standard can be readily applied to the type; or
(b) Accepted by a regulatory authority as a standard that can be readily applied to the type.

Note: all “declared articles” under the legacy Australian legislations will become level 3 electrical equipment. Some of this equipment will be level 2 in New Zealand. Details are in AS/NZS 4417.2 (2012 edition has now been published).

1.8 Second-hand equipment

Although the requirements of the EESS do not apply to the sale of second-hand equipment, other requirements may apply. For example, a seller of second-hand in-scope electrical equipment in Queensland must give the purchaser information on whether the equipment has been tested by a licensed electrical worker and, if it was tested, whether it was found to be safe. Businesses that deal in, repair or recondition second-hand items of in-scope electrical equipment are not required to comply with this requirement.

1.9 Transitional arrangements

The EESS legislation being adopted by all States and Territories of Australia and New Zealand will commence on the 1st of March 2013. It has provisions that allow equipment that was in Australia and New Zealand prior to the commencement of the EESS to continue to be marketable under the rules of the previous legislation applicable in those jurisdictions for certain transitional periods.

Responsible suppliers will have up to six months from the commencement date to register on the national database. For equipment currently being imported or manufactured, responsible suppliers have three years to ensure it is marked with the RCM. Equipment stock already being held in the market will have five years before the marking requirement applies, to allow for the sale of this existing stock. Approval to sell declared articles under the previous rules was granted for a period of up to five years. These approvals will continue to be valid under the new EESS until they expire.

1.10 Audits and enforcement

Anyone who imports, manufactures or sells in-scope electrical equipment can be audited by electrical safety inspectors. Inspectors will normally give notice of audits, however they may also conduct spot audits without advance notice, usually in business hours. Inspectors have powers to inspect and seize documentation and equipment, write infringement notices and initiate prosecutions and recalls if the equipment is unsafe.

If an assessment or audit indicates that there is non-compliance, and the non-compliance is serious or there is a previous history of non-compliance, a warning or infringement notice may be issued, and corrective action (such as prohibition or compulsory recall) may be ordered. The sale or offer for sale of a prohibited item would normally result in an infringement notice. Failure to comply with a prohibition would normally result in prosecution.

1.11 Penalties

Suppliers of in-scope electrical equipment who fail to register as a responsible supplier, or who fail to register level 2 and/or level 3 electrical equipment and comply with other relevant parts of the equipment safety rules are liable to the imposition of significant penalties, including possible de-registration and de-listing. In addition, this could expose authorised representatives (the person or company acting on behalf of the responsible supplier or manufacturer) to significant penalties and bans from acting in that role in the future. There are also penalties for misuse of the RCM, or for not keeping the responsible supplier’s registration up to date with relevant changes. Obstructing an audit or providing false information may result in significant penalties.
2 Beyond electrical safety

2.1 Other safety regulations may apply

Suppliers of electrical equipment may also need to ensure that their products meet other regulatory safety obligations. For instance a gas water heater that needs electrical supply would also need to meet the applicable gas safety requirements, which can be found at http://www.gtrc.gov.au. There may also be requirements for electrical/electronic devices used in patient treatment areas of hospitals and clinics. Requirements also exist for the use of electrical equipment in explosive atmospheres. These are examples only. The reader is left to their own resources to research what other regulations may apply for their products.

2.2 ACMA to use the RCM

The Australian Communications and Media Authority (ACMA) has proposed new labelling arrangements to use the RCM instead of the C-Tick and A-Tick marks. This will apply to telecommunications and radiocommunications products, and for labelling for electromagnetic compatibility (EMC) and electromagnetic radiation exposure/safety (EME). This should apply from 1 March 2013, but in any case will be aligned with any changes to the EESS commencement date.

All new suppliers who are not already on ACMA’s supplier identification database will need to comply from the commencement date. Suppliers of devices that are subject only to ACMA labelling requirements and not the EESS will not be required to pay a registration fee, however they will be required to update their information annually. Current suppliers (those already on ACMA’s Supplier ID database) will have up to three years to register on the EESS database and start using the RCM for ACMA’s regulations.

All new devices that are physically labelled for the first time from 1 March 2013 will need to be labelled with the RCM. The use of the C-Tick and A-Tick marks on all legacy products will be phased out by the end of February 2016. Devices that have already been labelled with the C-Tick or A-Tick mark but not sold (e.g. factory or warehouse stock) prior to the end of the transition period may continue to be offered for sale beyond that date.

2.3 RCM in New Zealand for EMC and Radiocommunications

The situation in New Zealand at the time of writing is under review. ACMA is working with the New Zealand Ministry of Economic Development (MED) to give effect to the RCM there. However, Australia and New Zealand’s telecommunications standards are not harmonised. Therefore the RCM probably cannot be recognised in New Zealand for telecommunications compliance.

For EMC, the two countries’ standards are well-aligned, and they will probably harmonise the use of the RCM instead of the C-Tick for that purpose.

For radiocommunications, not all of New Zealand’s standards and spectrum allocations are harmonized with Australia’s, as there are differences in frequencies, power levels and usage types. Non-harmonised radiocommunications products which meet New Zealand’s requirements but not Australian requirements will need to be distinguished by the use of the NZ supplier number. These must not be supplied in the Australian market, as they will not comply with ACMA’s requirements.

3 Pre-commencement use of RCM

From the time of writing until the official commencement of the EESS, some suppliers may wish to transition to the RCM sooner, to simplify production schedules. This is presently possible, with some limitations and con-

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1 Please note: this section is under review and may be subject to change over time, depending on sometimes confusing advice to the writer. At the time of writing, a conservative approach has been taken.
ditions, under the legacy rules (excluding telecommunications products), but is not possible under the new rules until 1 March 2013. Please note the following issues related to this:

1. The new AS/NZS 4417.1 & AS/NZS 4417.2 edition: 2012 standards were published on 29 June 2012. These will replace all of the earlier editions and parts of 4417.x on the 1st March 2013 (refer to the preface in the standards). Until then the RCM process requirements are unchanged, and the existing 2009 edition documents with their associated amendments continue to apply.

2. The EESS registration database is not in production at the time of writing and cannot be used for official purposes, even though there’s a link to an evaluation version on the ERAC web site. The EESS database may be available for trial registrations later in 2012, but the writer is advised these trial registrations will not have regulatory effect. If suppliers use the trial registration system, they will still need to re-register when the official database is cut over.

3. The advice at this time is that the 2012 edition of AS/NZS 4417.1 cannot be used for EESS or ACMA purposes until 1 March 2013. The Preface says the 2012 edition “supersedes the 2009 edition ... on 1 March 2013”. It does not say the 2012 edition can’t be used before that date. However regulators indicate that the 2009 editions and the associated legacy processes will remain in place until 1 March 2013.

4. The 2009 edition legacy RCM standards can still be used until 1 March 2013, when the EESS is scheduled to commence, as they are currently being used up to now. The RCM registrar will continue to allow new supplier registrations up to the time the EESS commences. New-supplier registrations on the old system will terminate when the EESS process has officially begun.

5. Note that under the 2009 edition legacy requirements, a level 1 electrical article under the EESS scheme (i.e non-declared electrical article) is required to have a Certificate of Suitability (or equivalent) from an Australian electrical safety authority before the RCM can be used. This applies too for EMC or radio-communications purposes (note that the legacy requirements don’t apply to telecommunications regulations). For battery-powered or ELV-powered EMC or radio-communications products, a Certificate of Suitability is not required, since it’s not mains-powered, thus out of scope of AS/NZS 4417.2:2009 (+Amdt1)

6. Telecommunications products can’t use the RCM in lieu of the A-Tick mark until ACMA updates the relevant Telecommunications Labelling Notice (TLN) to give it legal effect, and formal registrations have commenced under the EESS. See the following web site: http://www.acma.gov.au/WEB/STANDARD/pc=PC_312467 for links to the various labelling notices managed by ACMA.

7. Also under the legacy requirements, the supplier identification needs to be marked with the RCM on the products (this won’t be required under the 2012 RCM standard). This does allow several alternative forms of supplier ID, such as the company logo of the responsible company. It doesn’t have to be the registered supplier code number specifically.

4 Reference documents and information

4.1 Primary source documents

1. *Australia and New Zealand’s Electrical Equipment Safety System (EESS) -- A Guide to Supplying Safe Electrical Equipment* (“Final” version, as distributed 23 Feb 2012); Electrical Regulatory Authorities Council (ERAC)

2. *Australian/New Zealand Electrical Safety System—Equipment Safety Rules* (Draft 18 October 2011); ERAC


4. *Compliance with the new Electrical Equipment Safety System (EESS)* (ERAC Feb 2012)


### 4.2 Other background material for general interest


2. **Consolidated compliance mark--Proposed implementation arrangements**; June 2011, Australian Communications and Media Authority

### 5 Document control

As this document is frequently being revised, the latest Acrobat PDF version will be made available from the writer’s LinkedIn profile (see next section), or [http://paulspiece.com](http://paulspiece.com), which also provides an RSS feed. The reader is invited to make contact if an editable Word document is needed.

### 6 About the writer

Paul W Robinson is Product Standards and Compliance Manager at IBM Australia. He is a member of Standards Australia’s committee QR-012 - Conformance marking to regulatory requirements, and TE-001 – Safety and energy efficiency of electronic equipment, and he participates in other technical committees and industry consultative bodies. He can be reached at paulrob@au.ibm.com or on LinkedIn at [http://au.linkedin.com/in/probinson](http://au.linkedin.com/in/probinson).