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| Title | Demonstrate knowledge of protection of circuits from static electricity and magnetic interference | | |
| Level | 2 | Credits | 2 |

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| Purpose | <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of electrostatic discharge precautions for semiconductors; – explain magnetic interference; and – describe procedures to protect circuits from static electricity and magnetic interference. |
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| Classification | Electrical Engineering > Core Electrical |
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| Available grade | Achieved |
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Explanatory notes

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 This unit standard and unit standards 15848, 15855, and 25070 together meet the assessment requirements of ERAC CEPC 5.
 This unit standard and unit standards 17602, 15848, 15855, 29465, and 29480 together meet the assessment requirements of ERAC CEPC 10.
 This unit standard and unit standards 15848, 15855, 29443, 29444, and 29480 together meet the assessment requirements of ERAC EPC 12.
 This unit standard and unit standards 5931, 15848, 15855, 29419, 29430, and 29480 together meet the assessment requirements of ERAC CEPC 23.
 This unit standard and unit standards 5931, 15848, 15855, 29419, 29430, 29440, 29471, and 29480 together the assessment requirements of ERAC CEPC 24.
 This unit standard and unit standards 5931, 15848, 15855, 29419, 29430, 29440, and 29474 together meet the assessment requirements of ERAC CEPC 37.
- 3 Definitions
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.
ERAC – Electrical Regulatory Authorities Council.
ESD – electrostatic discharge.
EWRB – Electrical Workers Registration Board.
Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.

- 4 Range
- a Candidates may refer to current legislation and Standards during assessment.
 - b Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
 - c All activities and evidence presented for all outcomes and evidence requirements in this unit standard must be in accordance with:
 - i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - v applicable site, enterprise, and industry practice; and,
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of electrostatic discharge precautions for semiconductors.

Evidence requirements

- 1.1 Describe causes of static electricity in the electronics workplace in terms of triboelectric charging and separation and the amount of static charge generated.
- 1.2 Describe the effect of ESD on semiconductor devices, components, and equipment in terms of immediate failure, intermittent faults, re-servicing, and delayed breakdown.
- 1.3 State three precautions to minimise ESD to semiconductor devices, components, and equipment.
- 1.4 List the minimum requirements for a static-safe workstation.

Outcome 2

Explain magnetic interference.

Evidence requirements

- 2.1 Outline causes of magnetic interference.
- 2.2 State typical effects of magnetic interference on a circuit.

Outcome 3

Describe procedures to protect circuits from static electricity and magnetic interference.

Evidence requirements

- 3.1 Define accepted circuit protection procedures against the effects of static

electricity.

- 3.2 Define accepted circuit protection procedures against the effects of magnetic interference.

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| Planned review date | 31 December 2019 |
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Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
|-----------------------|---------|-----------------|--------------------------|
| Registration | 1 | 23 April 1996 | 31 December 2013 |
| Revision | 2 | 3 April 2001 | 31 December 2013 |
| Review | 3 | 26 May 2005 | 31 December 2021 |
| Rollover and Revision | 4 | 15 March 2012 | 31 December 2021 |
| Revision | 5 | 15 January 2014 | 31 December 2021 |
| Review | 6 | 21 July 2016 | N/A |
| Revision | 7 | 16 March 2017 | N/A |

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| Consent and Moderation Requirements (CMR) reference | 0003 |
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.