



ELECTRICAL SAFETY REVIEW REPORT 2022

CONSULTANT: Dave Parsons

REASON FOR REVIEW: Concern noted regarding electrical safety across CCES worksites.

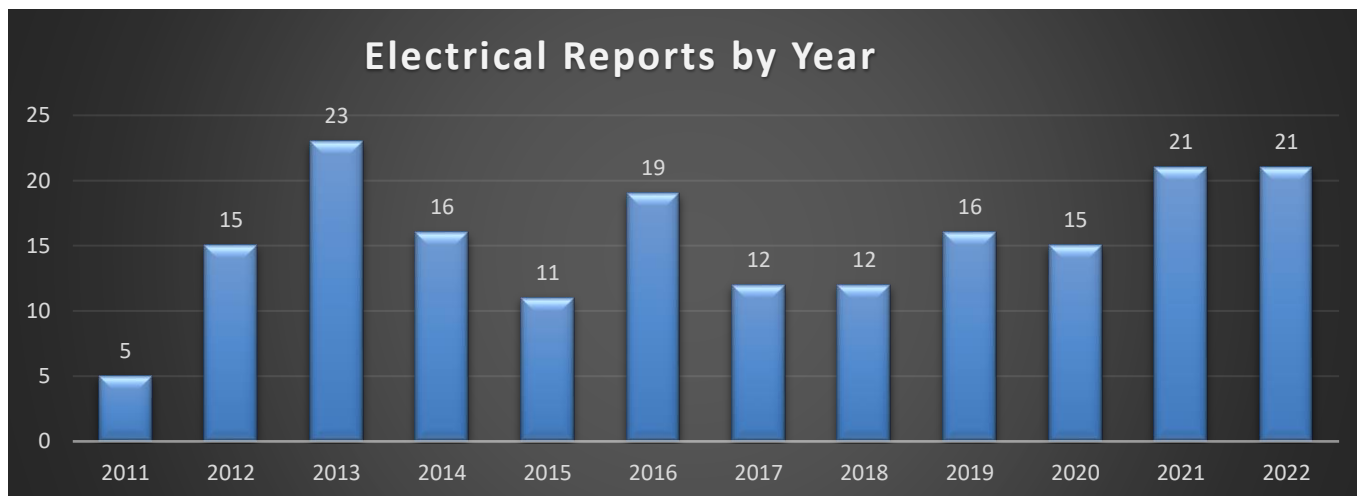
DATE: 06/12/2022

BACKGROUND / REFERENCES:

- A review of electrical incidents recorded in Rapid (2011 – 2022) was undertaken in 2022.
- SafeWork SA communicated in 2022 that they have seen a rise in reported electrical incidents and as a result were implementing a targeted compliance program.
- Over the last 10 years the number of 240v powered or charged by electrical devices in use at CCES workplaces appears to have increased.
- Review of the Australian Competition and Consumer Commission Product Safety website (recalls) has seen regular recalls on electrical products between 2013 and 2022 (with many that might be seen in CCES worksites).
- Some CCES worksites have failed to report incidents involving electricity in a timely manner to their CSHWSA WHS Consultant.
- Some CCES worksites do not appear to have managed the process post an electrical incident (particularly where a shock has been reported) very well.
- CSH&WSA Procedure – Electrical # 9, Version 5.1
- WHS Act (SA) 2012 and WHS Regulations (SA) 2012
- Approved Code of Practice – How to Manage Work Health and Safety Risks June 2020
- Approved Code of Practice – Managing Electrical Risks in the Workplace June 2020
- Australian Standard AS/NZS 3760 – 2010 In-Service Safety Inspection and Testing of Electrical Equipment

FINDINGS:

- The review of electrical related incidents (recorded in Rapid) across CCES (2011- 2022) worksites identified the following summary:



Over the period 2011 to 2022 there has been 186 electrical related incidents / hazards reported, with an average of 15.5 electrical related reports each year. A further breakdown of these includes:

- 74 were related to an actual or perceived shock or burn involving electricity
- 61 related to an incident, without injury but had potential and included an RCD trip
- 51 related to the identification of an electrical hazard but without an actual incident

The last couple of years has seen a rise in the number of reports made involving electricity.

Resulting from the number of reports raised, electrical related incidents are by far the most notifications made to SafeWork SA. A breakdown of notifications made over the past 6 years includes:

- 2022 – (7)
- 2021 – (7)
- 2020 – (6)
- 2019 – (6)
- 2018 – (5)
- 2017 – (5)

At present programs of electrical equipment testing (test and tag) are in place throughout CCES, with these generally completed on a 12 monthly basis. Operating / trip time testing of RCDs is also generally in place with this occurring on a 12 monthly or 2 yearly basis. Programs of push button testing of RCDs is also generally in place across CCES, with this occurring on a 6 monthly basis. The CSH&WSA WHS Audit program over the past few years supports these findings however it is noted that compliance with these requirements has not occurred consistently, with several non-conformances issued in relation to electrical testing of both equipment and RCDs at CCES worksites.

Australian Standard (AS/NZS 3760) – 2010 In-Service Safety Inspection and Testing of Electrical Equipment provides guidance in relation to the frequency of testing for electrical equipment and RCDs. Table 1 within the CSH&WSA Procedure – Electrical, has used the guidance in AS/NZS 3760 to tailor this for CCES worksites. While this is useful, it does present some complexities and confusion for application. For example, a secondary school has multiple areas some of which should require RCD trip / operating time testing to be completed 12 monthly e.g., science, design and tech, commercial kitchens etc. and other areas 2 yearly. This presents some logistical challenges as these areas may not be supplied with electricity through separate circuits. A primary school for example that uses hot glue guns for example should be having RCDs tested 12 monthly (note these devices have regularly been associated with electrical and fire type incidents). Likewise, Parishes, Social Services and Aged Care worksites have a mix of equipment in place. Some that warrants testing of RCDs 12 monthly and some 2 yearly.

CSH&WSA has recognised and acted over the years to improve the management of electricity across CCES. This has included for example:

- 2008-2009 dedicated Electrical Management Program, with education and training delivered as an outcome.
- Ongoing promotion and awareness have continued with a range of articles appearing in both the regular CSH&WSA Bulletins and hazard alerts for example. Examples include:
 - Bulletin 230, Nov 2022 – Electrical Safety Principles
 - Product Safety Recall Notice, Oct 2022 – Extension Leads
 - Bulletin 227, Feb 2022 – Electrical Safety
 - Bulletin 226, Nov 2021 – Laptop Charging Stations
 - Hazard Alert, Apr 2021 – Electrical Incident Notification
 - Hazard Alert, Apr 2021 – Overhead Cabling

- Bulletin 223, Feb 2021 – Floor Outlet Electrical Boxes (Hazard Alert)
- Hazard Alert, Nov 2020 – Floor Outlet Electrical Boxes
- Bulletin 222, Nov 2020 – Electrical Testing
- Hazard Alert, Feb 2020 – Coffee Pod Machines
- Hazard Alert, May 2018 – Powerboards

An electrical risk is a risk to a person of death, shock or other injury caused directly or indirectly by electricity. The main hazards associated with these risks are:

- contact with exposed live parts causing electric shock, electrocution, or burns
- faults which could cause fires
- fire or explosion where electricity could be the source of ignition in a potentially flammable or explosive atmosphere.

Some items of equipment can also involve greater risk than others. Portable electrical equipment is particularly liable to damage including to plugs and sockets, electrical connections and to the cable itself. Extension leads, particularly those connected to equipment, which are frequently moved, can suffer from similar problems.

SUMMARY:

- Electrical safety management is not occurring consistently across CCES worksites.
- Electricity as a hazard does not appear to be fully recognised or appreciated as being a significant issue.
- Application of the guidance provided in CSHWSA Procedure # 9 – Electrical, does not appear to have been applied consistently.
- The guidance provided in CSHWSA Procedure # 9 – Electrical, may be viewed as confusing.
- RCDs are a primary engineering control in place at CCES worksites to reduce the risk of electric shock, electrocution, and fire for example.
- Several CCES worksites appear to already be completing operating / trip time testing of RCDs on a 12 monthly basis.
- Electricity is one of several key hazards, with a subsequent significant risk. While controls are in place, these could be enhanced through an increased frequency of testing of RCDs and ongoing promotion of electrical safety management requirements.

RECOMMENDATIONS:

- Change the current general communicated and accepted frequency of 2 yearly RCD operating / trip time testing to 12 monthly for all CCES worksites.
- CSH&WSA Procedure # 9 – Electrical (version 5.1) be reviewed and updated to incorporate changes. Consider including a caveat that a difference in frequency for RCD trip / operating time testing could be applied if supported by a detailed risk assessment.
- CSH&WSA Procedure # 9 – Electrical, following updates be formally consulted on through the usual process.
- Change the requirements in the WHS Audit Tool and other relevant forms / tools to include 12 monthly RCD trip / operating time testing.
- As this is a significant change for some CCES worksites, provide a '12-month grace period' across 2023 in enforcing this requirement through WHS Audits.

FOLLOW UP:

Conduct a formal review in 2024 to determine if any improvements have resulted from the change in frequency of RCD testing and the ongoing promotion of electrical safety management.

SIGNATURE: *D J Parsons*

DATE: 6 December 2022