Maintain Low Voltage Electrical Equipment

Issue date: 04/10/07
Review date: 04/10/10

<table>
<tr><td>SWMS number:
SMS-06-SW-0750</td><td colspan="3">SWMS Name:
Maintain Low Voltage Electrical Equipment</td><td rowspan="2">SWMS Team:
Warwick Jackson
Brendan Simpson
Peter McLeay
Trent Cardwell</td></tr>
<tr><td>Custodian (Position):
Safety and Systems Manager, Buildings and Sidings, L Serrao</td><td colspan="3">Assumptions:
Inspection, adjustment, minor housekeeping and taking of readings on low voltage assets
Fine weather, daylight, power on
Mandatory PPE is worn</td></tr>
<tr><td rowspan="2">Approving Authority (Position):
General Manager, Infrastructure

Applicable Standards, Codes of Practice and guidance:
• ESAA Guide to Electrical Safety Systems
• Workcover CoP: Noise Management and Protection of hearing at work
• AS/NZS 3018 Electrical Installation
• EP 17000006 SP Installation Inspection
• AS/NZS 3760 In Service Safety Inspection and Testing
• Emergency Lighting</td><td>Plant/Equipment/Tools:
• Binoculars
• Electrical meters
• Test equipment
• LV rescue kit</td><td>Records/Reporting:
• Teams 3 reports
• A&B Inspection sheet</td><td>Permits/licences required:
Licences as issued by the Office of Fair Trading</td><td rowspan="2">Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group)
Regional Electrical Maintenance Engineer South.
Safety and Systems Manager, Buildings and Sidings

PPE required:
• 185 gsm 100% cotton clothing in accordance with NENS09
• Gloves as applicable
• Face Protection as applicable
• Hearing Protection as applicable</td></tr>
<tr><td>Inspection requirements
• Electrical test equipment in calibration</td><td>Service schedule:
Teams 3

MIMS or METRE Ref:
N/A</td><td>Training/Qualifications required:
Authorised Person LV
Back safe Instruction
RISI
WorkCover Greencard</td></tr>
</table>

Legend

ESAA : Electricity Supply Association of Australia
CoP : Code of Practice
RISI : Rail Industry Safety Induction
Green Card : Construction Industry Induction Card

Maintain Low Voltage Electrical Equipment SWMS

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Number	Step	Hazard or human error (Safety/Environmental hazards identified, including physical environment, human errors, plant and equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed In accordance with (name associated documentation)
1	Carry out maintenance work	Contact with Electricity	B-	Maintain electrical clearances Work in accordance with electrical permit Appropriate use of electrical test equipment according to ESNR	C-	Team Member	SMS-06-SW0271
		Contact with chemicals (e.g. battery acid, electrical solvents, weedicide)	C-	Work in accordance with MSDS and Manufacturers Instructions	D	Team Member	SMS-06- SW0195 SMS-06-SW0193
		Muscular stress / manual handling	C+	Backsafe instruction Use mechanical lifting device according to SWI where practical	D	Team Manager Team Member	SMS-06-GD0001 Manual handling
		Fall from heights	B+	Fall protection measures appropriate to job being done Use EWP if practical or attached climbing fall arrest system	C-	Team Member	SMS-06-GD0240
		Contact with sharp objects	B-	Remove or blunt if possible. Use gloves	C+	Team Member	SMS-06-SW0405
		Exposure to asbestos	C-	Refer to hazardous materials registers. Do no work that may cause dust where asbestos is present	D	Team Leader	SMS-06-0198 Dangerous goods & hazardous goods risk assessment
		Crush injuries from circuit breakers or hand tools	B-	Remove energy from springs. Secure moving parts if possible. Remain clear of crush zone	D	Team Member	
		Struck by flying particles	B+	Eye protection to be worn	D	Team Member	SMS-06-GD0323
		Contact with hot objects	B+	Use gloves	D	Team Member	
		Slips and trips on same level	C-	Identify hazard. Remove or barricade potential hazards. Vigilance	D	Team Member	
		Contact with toxins for spiders, wasps etc	C+	Inspect area. Spray in accordance with MSDS. Use gloves .	C-	Team Member	MSDS for insect spray
		Compressed air from relief valves or damaged pipes	D	Eye / face protection	D	Team Member	

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		Objects falling from heights	B+	Secure loose objects Hard hat Defined exclusion zones if practicable (e.g bollards, tape)	C+	Team Member	SMS-06-GD0323
		Noise from switchgear equipment	C-	Use hearing protection where signposted Or where noise is an identified risk	D	Team Member	SMS-06-GD0323
		Working in yards and sidings	B-	Work in accordance with SWMS	C+	Team Member	Appropriate SWMS

Appendix A: Service Schedules

Maintain Low Voltage Electrical Equipment

NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS

Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date	Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)

		Likelihood/Frequency						
		Event Frequency	Less than once every 1000 years	Once every 100 to 1,000 years	Once every 10 to 100 years	Once every 1 to 10 years	More than once per year up to and including 10 times per year	More than 10 times per year
		Historical (Likelihood)	Unheard of in the rail industry	Has occurred once or twice in the rail industry	Has occurred many times in the rail industry, but not in NSW	Has occurred once or twice in NSW	Has occurred frequently in NSW	Has occurred frequently at specific locations
		Workplace Predictive (Likelihood)	Not expected to occur	May occur only in exceptional circumstances	Could occur at some time but not likely	You would expect it to occur at least once in the next 10 years performing similar activities	You would expect it to occur at least once this year performing similar activities	You would expect it to occur at least once this month performing similar activities
			F1	F2	F3	F4	F5	F6
Consequence			Incredible	Improbable	Remote	Occasional	Probable	Frequent
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	A
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	A
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-

Extreme
High
Medium
Low

Definition for Use - Regional & Local level (Workplace)

Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments.

As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot.

There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive liklihood in the workplace. Choose the most appropriate.

To score the risk, follow the steps:

1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matricies).

2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)

3. Score the risk using the combination of likelihood and consequence ranking.

Note: Where there are a range of credible consequences which may lead to a different level or risks and/or where the controls may be different. It may be useful to score the risk more than once.