Electrical Installation and Removal of Points Equipment

Issue date: 10/04/08
Review date: 19/02/11

SWMS number:
SMS-06-SW-1089

SWMS Name:
Electrical Installation Removal of Points Equipment

SWMS Team:
Signal Review Team

Custodian (Position):
Signal Services & External Resources Manager

Assumptions:
- Site specific risks are addressed and assessed in pre- work briefing
- Prior to undertaking any activity, the risk of electric shock shall be assessed and appropriate control measures implemented as per TMG J042 (Safety issues for signalling personnel)

Approving Authority (Position):
Safety and Quality Manager Commercial / Renewals

Equipment/Plant/Tools:
- Lifting Devices
- Electrical Points Components
- Crimpers – Ratchet Cable Cutter
- ESML Key
- Approved Test Equipment

Records/Reporting:
- Worksite Protection Plan
- Pre-work Brief
- Site-Specific Management Plan

Permits/licences required:

Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group)
Signal Services & External Resources Manager & SEQ Coordinator Asset Management Group Commercial / Renewals

Applicable Standards, Codes of Practice and guidance:
- OH&S Act 2000
- OH&S Regulation 2001
- Rail Safety Regulation 2003
- RailCorp Network Rules & Procedures
- RailCorp Safety Management System.
- Signalling Maintenance Procedures J Manual
- Technical Maintenance Plan

Inspection requirements:
Nil

Service schedule:
Nil

Training/Qualification required:
- Construction Industry Induction
- Track Safety Awareness

or
RISI (Rail Industry Safety Induction)

Personal Protective Equipment required:
- Safety Boots
- High Visibility Vests
- Hardhats
- Protective Clothing
- Safety Glasses

And as specified below.

- Gloves

• Air Reticulation Systems SC09-20-00-00-SP • Signalling Construction Specifications • Safety issues for signalling personnel TMG-J042 • MSDS for all chemicals and hazardous Substances used on site • EC14 – Guide to Electrical Workers' Safety Equipment • National Code of Practice for Manual Handling [NOHSC:2005 (1990)]		**MIMS or METRE Ref:** Nil		• During all Site Works a FIRST AIDER MUST be Present

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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	Supervisor undertakes site pre-work briefing and gives local induction.	Staff not Listening to Pre-Work Brief	B -	Identify all hazards, Staff to ensure they are properly Briefed as to risks involving Worksite.	D	Team Leader / Work Group Leader / All Staff	Pre-Work Briefing SMS-06-FM-0163
2	Supervisor verifies competence of personnel doing the task and currency of permits for work.	Expired Competency Cards & Permits, Unqualified type of Personnel for the Task.	B -	Visual Inspection of Personnel Competency Cards & Currency of Permits	D	Team Leader / Work Group Leader	Safety Training & Competence SMS-11-SR-0128
3	Review SWMS and confirm it is current.	Use of a SWMS that is out of date	C -	Ensure SWMS is current and up to date.	D	Team Leader / Work Group Leader	SWMS & SWI's SMS-06-PR-0023
4	Verify that plant and equipment for the task is fit-for-purpose.	Plant & Equipment kept in poor working condition	C +	Conduct a Daily Plant Checklist	D	All Staff	Plant SMS-06-GD-0225
5	Access , Egress and Working on site	Hit by Train	A	Pre-work Brief including Worksite Protection Plan, Site Induction and Inspection, Confined Spaces if required Ensure adequate communication in place prior to commencement to work	C+	Worksite Protection Officer	Network Rules, Safety Management SMS-01-PO-0126
		Slips, trips and falls and Site Access	A	Pre-work Brief to identify potential hazards. Personnel should follow Identified safe paths, to & from worksites	C+	Worksite Protection Officer/all staff	Uneven Surfaces SMS-06-FM-0163
		Injury from vehicles and plant equipment	A	Provide a Site Plan detailing safe access paths, parking and location of facilities Use of signs/Barriers or Plant spotters should be considered	C-	Worksite Protection Officer/all staff	Site safety plans
Risk of electric shock shall be assessed and appropriate control measures implemented before commencing work							
6	Install / Remove electrical	Strain due to lifting to heavy equipment	B+	Back safe procedures Use of approved lifting device	C-	All Staff	Backsafe Manual

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	points components • Electrical Detectors • Indication Boxes • Plunger lock motors • Point Controller Units • Termination Units • Electric Point Machines	Crush Injuries form switch mechanisms, Roding	B+	Keep hands/feet clear, identify safe work areas, use signs or barriers. Prevent movement of equipment, whilst working on points	C-	All Staff	Site Safety Plan
		Injuries from High pressure air	B+	Isolate airline, apply TMG J042	C-	All Staff	SMS/TMG J042
		Injury from Pinch Points from moving parts	B+	Isolate where possible, keep hands/feet clear of gear / moving parts, work in accordance with manufacturers specs	C+	All Staff	PPE- SMS-06-GD-0323
7	Installation / Disconnection or Termination of Wiring and fitting	Bending/Squatting injuries	B+	Back safe procedures	C-	All Staff	Backsafe Manual
		Hand Tools/ Cuts from cable sheaths – Knives	A	PPE – Kevlar Gloves, Use Correct Hand tools recommended for task, use cable strippers instead of knives for stripping cable sheaths	C-	All Staff	PPE- SMS-06-GD-0323 Manufacturers specs
		Injuries from Crimpers – Ratchet Cable Cutter	B-	Brief Team on use of Quick Release Mechanism -	D	All Staff	Operating Manual
8	Test , Set to Work	Injury from Pinch Points –	B+	Keep hands/feet clear of moving parts, identify safe area, operate in accordance with manufacturers safety Specs	C-	All Staff	PPE- SMS-06-GD-0323 manufacturers Safety recommendations
		Hand injuries when manually operating Points machine	B+	Keep hands clear of moving parts, identify and indicate with signs, moving parts	C-	All Staff	PPE- SMS-06-GD-0323 manufacturers specs
		Injury from Hand Tools	B+	Use tools recommended by manufacturer, or appropriate for task	C-	All staff	Manufacturers Specs/manual
		Electric shock	A	Use insulated covers or isolate supply, apply procedures as per Electrical Risk Assessment form	C+	All Staff	PPE- SMS-06-GD-0323 Electrical risk assessment forms

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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.