Installation and Maintenance of Electro-Pneumatic Points

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

SWMS number:
SMS-06-SW-1014

SWMS Name:
Installation and Maintenance of Electro-Pneumatic Points

SWMS Team :
Signal Review Team

Custodian (Position):
Signal Services & External Resources Manager

Assumptions:
Site specific risks are addressed and assessed in pre- work briefing

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

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
- Signalling Maintenance Procedures
- Technical Maintenance Plan
- Signal Engineering Standards
- RailCorp Safety Management System.
- MSDS for all chemicals and Hazardous substance used on site
- Safe use of Oxy-fuel Gas Sys - AS-4839
- City Region – Tunnel Emergency Evacuation Steps
- City Region – Site Safety Rules

Equipment/Plant/Tools:
- Vehicle Crane, guide ropes
- Electric Planer, Adze, Electric Circular Saw, Grinder
- Oxy cylinders/torches, Flint Gun, Tongs
- Fire extinguisher
- Spanners, Hammers & Job Specific Hand Tools
- Chainsaw, Fuels
- Chocks and Point Clips
- Barriers, Fencing, Watercart
- Bars, Shovels, Picks
- Oxygen Monitor, Catalytic Converters, Electric Fans
- GRN Radios
- Rocol Point Chair Lubricant

Records/Reporting:
- Worksite Protection Plan
- Pre-work Brief
- Electrical Test Tags
- Hot Work Permit (During Total Fire Ban)
- Fire Brigade
- MSDS for chemicals
- Technical Maintenance Plan

Permits/Licences required:
- Rough Cutters Ticket
- Vehicle Crane certificate
- Certificate of Competency Chainsaw Safety

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

And as specified below.

- Gloves
- Hearing Protection
- Welding Helmet, Spats
- Face Guard
- Dust Masks

Inspection requirements
Nil

Service schedule:
Nil

Training/Qualification required:
- Construction Industry Induction

• National Code of Practice for Manual Handling [NOHSC:2005 • WorkCover NSW Plant Guide • EC14 – Guide to Electrical Workers' Safety Equipment • AS 2727-1997 Chainsaws - Guide to safe working practices		**MIMS or METRE Ref:** Nil	• Track Safety Awareness or RISI (Rail Industry Safety Induction)	• During all Site Works a FIRST AIDER MUST be Present

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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	General					
		Hit by Train	A	Pre-work Brief including Worksite Protection Plan, Site Induction and Inspection	C+	Worksite Protection Officer	Network Rules & Procedures, Safety Knowledge Management SMS-18-SR-0098
		Slips, trips and falls	C-	Pre-work Brief to identify potential hazards	D	Worksite Protection Officer	Workplace Risk Management SMS-06-PR-0104
		Injury from vehicles and plant equipment	B+	Provide a Site Plan detailing safe access paths, parking and location of facilities	C-	Worksite Protection Officer	Plant SMS-06-GD-0225
		Injury from striking Overhead Wiring.	A	Ensure Permit to Work has been obtained.	C+	Authorised OH Line Worker	Electrical Permits SMS-06-EN-0577
		Tunnels					
		Personnel injury from Fumes/contamination of atmosphere while in Tunnels	B-	Continuous air containing appropriate levels of oxygen is available with an air velocity of no less than 10 m/Min. Atmospheric monitoring while working	C+	All staff	City Region Hazard Summary - Part 2 City Tunnels

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		Lack of Communication while in Tunnels	C-	GRN Radios to be used.	D	All staff	City Region Hazard Summary - Part 2 City Tunnels
		Injury from Placement and use of equipment in tunnels	C+	Use of PPE – Hearing protection, Hand Protection. Operators to be aware of extent safe-working area. Equipment fitted with Catalytic Converters. No Petrol driven engines to be used in tunnels. LPG Bottles to be changed outside restricted space. All mobile plant shall have a flashing/rotating light visible from the front and rear. Use of Hydraulic equipment were appropriate	D	All staff	City Region Hazard Summary - Part 2 City Tunnels Lifting Equipment Inspection SMS-16-FM-0089 Plant SMS-06-GD-0225
5	Access, Egress and Working on site (Cont….)	Injury from debris or dust while in Tunnels	B-	Exclusions zone for workers not involved in tasks Wear Type 1 Respirators Water down materials Use of PPE – Dust Masks	D	All staff	City Region Hazard Summary - Part 2 City Tunnels PPE SMS-06-GD-0323
6	Dig Holes under Points Timbers	Sprains / Strains/Twists from use of Shovels, Bars & Picks	B-	Use of PPE – Gloves. Ensure Tools are in good condition. Use correct Techniques, do not over exert.	D	All Staff	PPE SMS-06-GD-0323
	CAUTION	*The Following Precautions are to be undertaken for when working about Turnouts as in Activity 7 & 8 :* • Ensure that Switch Gap Chock is in place to stop switch from closing onto bodily parts. e.g. Hands or Fingers. • No person is to remove Switch Gap Chock until all Staff are clear from work area unless Authorized by the Team Leader or Work Group Leader. • Note: Track Mounted Vehicles are to be propelled through the Worksite after Liasing with the Worksite Protection Officer					
7	Clean out Ballast around between Switch & Stockrail	Crush Injuries	B+	Chock, secure and clip points	D	All staff	PPE SMS-06-GD-0323
		Electric Shock from rails/equipment/plant due to difference in potential	A	Ensure signalling equipment is electrically isolated. Signal Electrician to isolate.	C-	Signal Electrician / Authorised Officer	Safety Issues for Signalling Personnel TMG J042

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		Injury from use of Circular Saw	B-	Use of PPE – Eye protection, Hearing protection, Hand protection	D	All Staff	PPE SMS-06-GD-0323
	WARNING	*The Following Precautions are to be undertaken for when using Hot Works as in Activities 8 during Total Fire Bans:* • An Hot Works Permit must be Issued before Work tasks are to be Performed • The Welder or other person in control of the Worksite must take reasonable care to inspect the workplace to identify Potential Fire Hazards • All Fire Hazards are to be removed Prior to commencing Welding Tasks • Fire Fighting Equipment must be on Hand at the Worksite e.g. Watercart, Knapsacks, Fire Extinguishers • (Hot Works in Progress) Warning Signs are to be placed at Appropriate locations Hot Work SMS-06-PR-0329					
8	Install Bed Plates / Rodding & Equipment, Line up Equipment with Measurements And Timber Scarfing	Injury from Woodchips, Splinters, Adze, Planers,	C+	Correct use of Electric Tools Tag and Tested Handle Adze with Extreme Care Check and Re-Check measurements	D	Work Group Leader, All Staff	Work Around Elect. Equip. SMS-06-GD-0268 PPE SMS-06-GD-0323 Operating Manual
		General Process Hazards					
		Injury while Loading / Unloading Equipment	B-	Ensure workers are kept well clear of lift path. Use competent crane operators Use guide ropes if required	C-	Vehicle Crane certificate Holders	Lifting Equipment Inspection SMS-16-FM-0089 Plant SMS-06-GD-0225
8	Install Bed Plates / Rodding & Equipment, Line up Equipment with Measurements And Timber Scarfing (Cont……)	Crush Injuries	C+	Brief Workers of Hazards of Moving Points	D	All Staff	PPE SMS-06-GD-0323
		General Welding Hazards					
		Burns from Hot objects Flashes	B+	Use of PPE – Welding Helmet, Gloves, Spats. Use tongs when handling hot objects	C-	Rough Cutters Ticket Hot Work Permit (if Fire Ban) Certified persons to operate	PPE SMS-06-GD-0323 Hot Work SMS-06-PR-0329
		Fire	B+	Ensure fire protection measures based on risk assessment Hot Work Permit (if Fire Ban)	C+		Site Incident Response Procedures SMS-15-PR-0245 Hot Work SMS-06-PR-0329
		Oxy Acetylene Welders					

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		Explosions from leaking hoses and damaged equipment	B+	Visually check equipment MSDS on chemicals Flint igniters	C+	Rough Cutters Ticket Hot Work Permit (if Fire Ban) Certified persons to operate	AS-4839 (Safe use of Oxy-fuel Gas Sys) Storage/Handling of Gases SMS-06-SW-0196
		Breathing difficulties from fumes	B-	Ensure well ventilated area MSDS on chemicals	C-		
		Generators and Power Tools					
		Injury from Electric Shock from Generators/Power tools	A	Inspect and check equipment parts, electrical cables (Valid Test and Tag Label), RCD Units fitted (General Inverter Type Excluded)	C+	All Staff	Equipment Operating Manual, Work Around Elect. Equip. SMS-06-GD-0268
		Injury from fumes, fuels	C+	Appropriate care with placement of fuels/oils Ensure well ventilation from exhausts and fumes, Spill kit on hand	D	All Staff	Hazardous Substances SMS-06-GD-0199 MSDS
		Application of Protective Coatings					
		Injury from grinders during surface preparation	B-	Use of PPE – Eye protection and Hand protection	D	All Staff	PPE SMS-06-GD-0323
		Injury from sanding dust and fumes	C+	Use of PPE – Masks, Gloves	D		
		Chainsaw Operation					
		Injury from Chainsaw blade and debris	B+	Only operator to be in local vicinity Correct use of chainsaw. PPE – Gloves, Eye protection, Hearing protection	C-	Certificate of Competency Chainsaw Safety, Operating Manual	PPE SMS-06-GD-0323
		Vibration Noise	C-	Use of PPE – Gloves and Hearing protection	D	All Staff	PPE SMS-06-GD-0323
9	Test & Adjust Points	Hand Injury, Crush Injuries,	B+	Use of PPE – Gloves. Keep clear of moving Points	C-	All Staff	PPE SMS-06-GD-0323

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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.