

Electrical Installation Removal of On-Track equipment

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

SWMS number: SMS-06-SW-1088	SWMS Name: Electrical Installation Removal of On-Track equipment			SWMS Team: Signal Review Team
Custodian (Position): Signal Services & External Resources Manager	Assumptions: <ul style="list-style-type: none"> 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) 			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
Approving Authority (Position): Safety and Quality Manager Commercial / Renewals	Equipment/Plant/Tools: <ul style="list-style-type: none"> Train stop lifters Generator, RCD Unit Power Tools, Spanners, Hand Tools Crimpers – Ratchet Cable Cutter Fuels Bonding Machine Intergrators Spill Kit 	Records/Reporting: <ul style="list-style-type: none"> Worksite Protection Plan Pre-work Brief Site-Specific Management Plan Electrical Tool test Fuel and Oil MSDS Daily Plant Checklist Environmental Protection Plan Confined Spaces Checklist 	Permits/licences required: <ul style="list-style-type: none"> Confined Spaces Permit (If Required) 	Personal Protective Equipment required: <ul style="list-style-type: none"> Safety Boots High Visibility Vests Hardhats Protective Clothing Safety Glasses <p>And as specified below.</p> <ul style="list-style-type: none"> Gloves During all Site Works a FIRST AIDER MUST be Present
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none"> 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 Signalling Construction Specifications Technical Maintenance Plan Air Reticulation Systems SC09-20-00-00-SP Safety issues for signalling personnel TMG-J042 Bonding Leads continuity TMG J042 Sec 8 MSDS for all chemicals and hazardous Substances used on site 	Inspection requirements Nil	Service schedule: Nil	Training /Qualification required: <ul style="list-style-type: none"> Construction Industry Induction Track Safety Awareness or RISI (Rail Industry Safety Induction) 	
		MIMS or METRE Ref: Nil		

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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 Personnel should follow identified Safe access/egress paths when entering worksite	C+	Worksite Protection Officer	Network Rules, Safety Management SMS-01-PO-0126
		Electric Shock	A	Prior to commencing any activity, the risk of Electric shock shall be assessed, with appropriate control measures implemented as per TMG J042	C+	Sig Elec (min)	TMG J042 and Electrical Risk Assessment Form
		Slips, trips and falls and Site Access	A	Pre-work Brief to identify potential hazards Prior to commencing work, safe access paths should be identified	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/plant spotters	C-	Worksite Protection Officer/all staff	Site safety Plan

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Risk of electric shock shall be assessed and appropriate control measures implemented before commencing work							
6	Working On Track	Electric Shock due to overhead traction return current (inc Spark Gap Arrestors)	A	Ensure bonding leads are appropriate and continuity is maintained, as per TMG J042 Sec 8	C+	All Staff	TMG J042 Sec 8
7	Install / Remove electrical equipment	Strain due to lifting of heavy equipment	B+	Use Appropriate approved lifting devices (e.g. Train stop lifters)	C-	All Staff	PPE- SMS-06-GD-0323
8	Wiring – installation, removal or termination (including fittings)	Injury from Hand Tools/ Cuts from cable sheaths /Knives	B+	PPE – Kevlar Gloves, Use Correct Hand tools recommended for task, use cable strippers instead of knives	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	Wiring – installation, removal or termination (including fittings)	Generators & 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, Electrical Equipment SMS-06-GD-0268
		Bonding Machine – burns, loose or caught clothing	B-	Secure loose or hanging clothing items/Turn machine off before changing drill bit.	C-	All Staff	Manufacturers specs
		Injury from fumes, fuels	B+	Appropriate care with placement of fuels/oils Ensure well ventilation from exhausts and fumes, Spill kit on hand MSDS for Chemicals	C-	All Staff	Hazardous Substances SMS-06-GD-0199 MSDS
9	Test , Set to Work	Electric shock while testing due to integrators, JS tracks,	A	use accredited testing equipment/ insulate exposed terminals by use of approved Insulating covers	C+	All Staff	TMG-J042 Section 8.5
		Injury from Hand Tools/spanners	B-	Use tools recommended by manufacturer/ or specific to equipment	C-	All Staff	Manufacturers Specs
		Injury from Pinch Points – Train stops	B+	Follow instruction guidelines or manufacturers specifications, place barrier or sign on offending part	C-	All Staff	Instruction manual

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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

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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
Consequence				F1	F2	F3	F4	F5	F6
			Incredible	Improbable	Remote	Occasional	Probable	Frequent	
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A	<p>Definition for Use - Regional & Local level (Workplace)</p> <p>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.</p> <p>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.</p> <p>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 likelihood in the workplace. Choose the most appropriate.</p> <p>To score the risk, follow the steps:</p> <ol style="list-style-type: none">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 matrices).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. <p>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.</p>
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-	