

Construction – Installation & Maintenance of Mechanical Points & Ground Frames

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

SWMS number: SMS-06-SW-1016	SWMS Name: Construction – Installation & Maintenance of Mechanical Points & Ground Frames			SWMS Team : Signal Review Team
Custodian (Position): Signal Services & External Resources Manager	Assumptions: Site specific risks are addressed and assessed in pre- work briefing			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"> Vehicle Crane, guide ropes, Slings & Chains, Front end Loader, Tippers 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 Grease, Oil, Oiling Can, Spatula, 	Records/Reporting: <ul style="list-style-type: none"> Worksite Protection Plan Pre-work Brief Electrical Test Tags Hot Work Permit (During Total Fire Ban) Fire Brigade MSDS for chemicals Technical Maintenance Plan Transportation of Oxygen / Acetylene / LPG Cylinders 	Permits/Licences Required: <ul style="list-style-type: none"> Rough Cutters Ticket Vehicle Crane certificate Certificate of Competency Chainsaw Safety 	Personal Protective Equipment required: <ul style="list-style-type: none"> Safety Boots High Visibility Vests Hardhats Protective Clothing Safety Glasses And as specified below. <ul style="list-style-type: none"> Gloves Hearing Protection Welding Helmet, Spats Face Guard Dust Masks 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 SMS and Network Rules Rail Safety Regulation 2003 RailCorp Safety Policy 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 WorkCover NSW Plant Guide National Code of Practice for Manual Handling [NOHSC:2005] EC14 – Guide to Electrical Workers' Safety Equipment AS/NZS 2865:2001 Safe working in a confined space AS 2727-1997 Chainsaws - Guide to safe working practices 	Inspection requirements: Nil	Service schedule: Nil	Training/Qualification required: <ul style="list-style-type: none"> Construction Industry Induction 	

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• AS 2726.1-2004 Chainsaws - Safety requirements - Chainsaws for general use		MIMS or METRE Ref: Nil	• Track Safety Awareness or RISI (Rail Industry Safety Induction)	
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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	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 Risk Assessment SMS-06-GD-0403
6	Measure and Map Out Location	Person, equipment struck by Train	A	Relevant Protection to be put in place in accordance <u>Job Step 5</u>	C+	Protection Officer, Work Group Leader, Install Mechanical Signalling TDTS901A.	Network Rules & Procedures, Safety Knowledge Management SMS-18-SR-0098
7	Use of Marking Spray Paints	Inhalation of Spray, Breathing Difficulties	B-	Use of PPE – Dust Mask,	C+	Work Group Leader, All Staff	PPE SMS-06-GD-0323
8	Dig Holes & Concrete	General Process Hazards					

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8	Foundations for Ground Frames, Compensators, Lead off Cranks	Sprains / Strains 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
		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
		Service Disruptions	C+	Service Search Contact Utilities	D	All Staff	Signalling Construction Standards Services Search Checklist SMS-06-FM-0384
9	Dig Holes & Concrete Foundations for Ground Frames, Compensators, Lead off Cranks (Cont.....)	Injury using Adze, Planers causing, woodchips, Splinters, cuts etc	C+	Correct use of Electric Tools Valid Tag and Tested label Handle Adze with Extreme Care Check and Re-Check measurements Use of PPE-Gloves, Hearing Protection	D	Work Group Leader, All Staff	PPE SMS-06-GD-0323 Operating Manual
		Concrete Mixing and Pouring					
		Strain Injuries from lifting/moving concrete	B+	Use of PPE – Eye protection Backsafe techniques	C-	All staff	PPE SMS-06-GD-0323 Manual Handling Guide SMS-06-GD-0001
		Breathing difficulties from concrete dust	B-	Use of PPE-Dust Masks	C-	All Staff	PPE SMS-06-GD-0323
10	Installation of Ground Frames, Compensators, Lead off Cranks, Line up Equipment with Measurements	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
		Splinters from Shovel	C-	Use of PPE – Gloves, Replace Handle	D	All Staff	PPE SMS-06-GD-0323
		Slung Loads	B+	Ensure workers are kept well clear of lift path. Use Competent Crane Operators. Slings & Chains to be tested regularly	C-	Vehicle Crane certificate Holders	Lifting Equipment Inspection SMS-16-FM-0089

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		 CAUTION		<p><u>The Following Precautions are to be undertaken for when working about Turnouts as in Activity 9:</u></p> <ul style="list-style-type: none"> • 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. • <u>Note:</u> Track Mounted Vehicles are to be propelled through the Worksite after Liasing with the Worksite Protection Officer 			
		Crush Injuries, Pinch Points	B+	Brief Workers of Hazards of Moving Points	D	Work Group Leader, All Staff	PPE SMS-06-GD-0323
		Moving Plant / Equipment	B+	Keep clear, Brief Workers of Hazards	D	Vehicle Crane certificate	Lifting Equipment Inspection SMS-16-FM-
		Injury from Confined Spaces, Suffocation, Poisoning, Electric Shock	B+	Only Certified persons allowed in area.	C+	Confined Space Training	Confined Spaces SMS-06-GD-0035
9	Installation of Ground Frames, Compensators, Lead off Cranks t, Line up Equipment With Measurements (Cont....)	Application of Protective Coatings					
		Injury from fumes	C+	Use of PPE – Masks, Gloves MSDS for chemicals	D	All Staff	MSDS PPE SMS-06-GD-0323
		 WARNING		<p><u>The Following Precautions are to be undertaken for when using Hot Works as in Activities 7, 8, & 11 during Total Fire Bans:</u></p> <ul style="list-style-type: none"> • 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
		Generators and Power Tools					

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9		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
		Injury from use of Grinder,	B-	Use PPE – Face shield, Hearing protection, Hand protection Instruction in Operating Manual	C-	All Staff	Operating Manual PPE SMS-06-GD-0323 Hot Work SMS-06-PR-0329
		General Welding Hazards					
		Burns from Hot objects	B+	Use of PPE – Welding Helmet, Gloves, Spats Use tongs when handling hot objects	C-	Rough Cutters Ticket Hot Work Permit (if Fire Ban)	PPE SMS-06-GD-0323 Hot Work SMS-06-PR-0329
		Flashes					Site Incident Response Procedures SMS-15-PR-0245
		Fire	B+	Ensure fire protection measures based on risk assessment Hot Work Permit (if Fire Ban)	C+		
		Oxy Acetylene Welders					
		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)	AS-4839 (Safe use of Oxy-fuel Gas Sys) Storage/Handling of Gases SMS-06-SW-0196 Hot Work SMS-06-PR-0329
		Breathing difficulties from fumes	B-	Ensure well ventilated area MSDS on chemicals	C-		
		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,	PPE SMS-06-GD-0323 Operating Manual

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		Vibration Noise	C-	Use of PPE – Gloves and Hearing protection	D	All Staff	PPE SMS-06-GD-0323
10	Application of lubricants to Signalling Equipment	Skin Reaction	B-	MSDS on chemicals	D	All Staff	Hazardous Substances SMS-06-GD-0199
		Grease / Oil Spill on Environment	B+	Spill Kit to be onsite, Barriers to stop Spillage	C-	Environmental Protection Authority, relevant Authorities	Incident Reporting / Notification SMS-17-SR-0099
11	Test & Adjust Points	Crush Injuries	B+	Brief Workers of Hazards of Moving Points	C-	Work Group Leader, 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

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RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency							Definition for Use - Regional & Local level (Workplace)
		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	
Consequence		F1	F2	F3	F4	F5	F6		
		Incredible	Improbable	Remote	Occasional	Probable	Frequent		
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A		To score the risk, follow the steps:
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	A	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).
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	A	2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A	3. Score the risk using the combination of likelihood and consequence ranking.
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+	Note: Where there are a range of credible consequences which may lead to a different level of risks and/or where the controls may be different. It may be useful to score the risk more than once.
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-	