

Running Cables Underground or in Troughing

Issue date: 01/04/09
Review date: 31/03/12

SWMS number: SMS-06-SW-0685	SWMS Name: Running Cables Underground or in Troughing			SWMS Team: <ul style="list-style-type: none"> Renato Dovecer – Safety Coordinator Brett Gordon – Supervisor Comms Field Cable Network Stephen Lacy – Specialist Cable Network Andrew Brassel - Specialist Cable Network
Custodian (Position): Safety Coordinator	Assumptions: <ol style="list-style-type: none"> Applicable to all Communications & Control Systems division staff. Applicable to the following types of cables: Communications cables (Optical Fibre, Copper etc.), Co-axial and Low voltage. 			Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) <ul style="list-style-type: none"> Supervisor Comms Field Cable Network – C&CS, Asset Management Safety Coordinator – C&CS, Asset Management
Approving Authority (Position): Manager Communications Field Resources	Plant/Equipment/Tools: <ul style="list-style-type: none"> Rescue Equipment (Rope and Rescue Device) Personal Multi-Gas Monitor Duct Rodder (Snake) Cable Drum Jacks Rope (cable hauling) 	Records/Reporting: Running Cables Risk Assessment.	Permits/licences required: <ul style="list-style-type: none"> Registered cabler under the ACMA Cabling Provider Rules Entry Permit for Confined Spaces 	PPE required: <ul style="list-style-type: none"> Safety Boots High Visibility Vest Protective Clothing Safety Glasses Hard Hats Protective Gloves (Cut Resistant or Leather) Confined Spaces Harness 7500 Series Half-Mask Respirator
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none"> OHS Regulation 2001 Rail Safety Act 2002 Australian Standard AS 4292.1 2006 "Railway safety management - General requirements" Manual Handling Resource WorkCover NSW 2004 AS/NZS 2865: 2001 Safe working in a confined space AS/NZS 1891.4:2000 : Industrial fall-arrest systems and devices - Selection, use and maintenance AS/NZS 1715 – 1994 Selection, use and maintenance of respiratory protective devices AS/NZS 1716 – 2003 Respiratory protective devices WorkCover NSW Code of Practice "Safety Line Systems" 1995 AS 4939 - 2001: Non-reusable personal use containers for the collection and disposal of hypodermic needles and syringes. 	Inspection requirements <ul style="list-style-type: none"> Confined spaces harness – Inspected every 6 months. Personal Multi-Gas Monitor – Calibrated every 6 months Maintain inspection and test records in accordance with SMS-16-SR-0057 Inspection and Testing and SMS-05-SR-0027 Records Management. 	Service schedule: N/A MIMS or METRE Ref: N/A	Training/Qualifications required: <ul style="list-style-type: none"> Rail Industry Safety Induction (RISI) OHS Construction Induction Training Card Course in Confined Spaces 6223 	

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1	Access site and setup equipment	Struck by train	A	Check hazardous locations register. Apply appropriate worksite protection. PPE: High Visibility Vest	C-	Protection Officer Line Manager	SMS-06-GD-0223 Hazardous Rail Corridor Locations SMS-06-GD-0323 Personal Protection Equipment
		Slips, trips and falls	B-	Maintain awareness of terrain. Make sure work area is clear of obstacles. Plan a clear path of travel; remove any slip, trip hazards. PPE: Safety Boots	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Manual Handling	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Lift using your legs and body weight, not your back. Perform all movements smoothly, in a controlled, balanced & comfortable position. Use of mechanical device to transport cable drum. Adequate staff to help with the transporting of equipment.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
		Crush injuries	B+	Inspect prior to use and determine appropriate load rating. Check load slings are properly secured and within lifting capacity. Keep staff clear during lifting operations. PPE: Safety Boots	C+	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
2	Open pit / troughing	Falling from heights (cable pits)	B+	Barricade area.	C-	Line Manager	SMS-06-GD-0240 Working At Heights

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2	Open pit / troughing (cont.)	Manual Handling	B-	<p>Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees.</p> <p>Lift using your legs and body weight, not your back.</p> <p>Perform all movements smoothly, in a controlled, balanced & comfortable position.</p> <p>Use a mechanical device (pit lid lifter) and if required use assistance when lifting.</p> <p>Co-ordinate lifting</p>	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
		Crush injuries	C+	<p>Co-ordinate lifting</p> <p>PPE: Protective Gloves (Cut Resistant or Leather).</p>	D	Line Manager	SMS-06-GD-0001 Guide to Manual Handling SMS-06-GD-0323 Personal Protection Equipment
		Cuts and abrasions	C+	<p>Be aware of sharp edges.</p> <p>PPE: Protective Gloves (Cut Resistant or Leather).</p>	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Bites and stings (eg. Snakes, spiders, insects)	B+	<p>Inspection of site prior to commencement of work.</p> <p>Fumigate as required</p> <p>Use insecticide in accordance with hazardous substances risk assessment and MSDS as required.</p> <p>PPE: Safety Boots, Protective Gloves (Cut Resistant or Leather)</p>	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment

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2	Open pit / troughing (cont.)	Contact with sharp objects (eg. Syringes)	B+	<p>Inspection of site prior to commencement of work.</p> <p>Sharps container and tongs to be on-site in case sharps/needles are found and can be disposed of safely.</p> <p>PPE: Protective Gloves (Leather, Riggers)</p>	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment SMS-06-SW-0405 Handling Sharps
		Confined spaces <u>Note:</u> Only applies to cable pits assessed as a confined space.	A	<p>All work performed in confined spaces must be assessed for risk and be approved by a Line Manager.</p> <p>Where the risk assessment identifies it as necessary, a trained and competent person must conduct atmospheric test.</p> <p>Use gas monitoring device in accordance with the manufacturers instructions.</p> <p>Monitoring results are to be recorded in the confined space entry permit and made available to all employees that are required to enter the confined space.</p> <p>Where a safe oxygen level or a safe level of air contaminant cannot be provided, person entering confined space must have appropriate respiratory equipment (eg. 7500 Series Half-Mask Respirator).</p> <p>A Stand-by person is required and must:</p> <ul style="list-style-type: none"> • Be stationed at the entrance to the confined space; • Be available at all times while the confined space is occupied; • Ensure that communication is constantly maintained; • Not enter the confined space. 	C+	Line Manager	SMS-06-GD-0035 Confined Spaces SMS-06-FM-0038 Confined Spaces Identification and Assessment Checklist SMS-06-SW-1105 Use of Gas Monitors SMS-06-GD-0323 Personal Protection Equipment SMS-06-FM-0037 Confined Space Entry Permit

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3	Enter pit. <u>Note:</u> Only applies to cable pits. Cables run through troughing proceed to step 4.	Confined spaces <u>Note:</u> Only applies to cable pits assessed as a confined space.	A	<p>An Entry Permit must be completed before entering a confined space.</p> <p>The entry permit must be posted outside the confined space and remain so until the work is completed.</p> <p>Prior to entry the atmospheric testing device must be charged, calibrated and fully functional.</p> <p>The atmosphere must be continuously monitored whilst the confined space is occupied.</p> <p>The person entering the confined space must be competent and certified working confined spaces.</p> <p>Persons working in the confined space must be constantly alert at all times for any changing conditions within the confined space.</p> <p>Workers must immediately leave the confined space under the following circumstances:</p> <ul style="list-style-type: none"> • In the event of an alarm from monitoring equipment or any other indication of danger • When experiencing any dizziness, light-headedness or difficulties. • When instructed by the stand-by person to evacuate the confined space <p>PPE: Confined spaces harness, 7500 Series Half-Mask Respirator.</p>	C+	Line Manager	SMS-06-GD-0035 Confined Spaces SMS-06-SW-1105 Use of Gas Monitors SMS-06-GD-0323 Personal Protection Equipment SMS-06-FM-0037 Confined Space Entry Permit

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3	Enter pit. (cont.) <u>Note:</u> Only applies to cable pits. Cables run through troughing proceed to step 4.	Falling from heights	B+	Climb and descend facing the ladder maintaining three points of contact with the hands gripping the stiles or each rung. Tools to be carried using either a bag that allows both hands to be free, or passed down from the pit opening after climbing.	C-	Line Manager	SMS-06-GD-0240 Working At Heights
		Inadequate lighting (pits)	B-	Check if lighting is adequate before commencing work. Use appropriate lighting (flood lights, battery powered torch).	C-	Line Manager	
		Restricted room for movement	C+	Reduce exposure by introducing frequent breaks and rotate jobs. Use assistance if required	D	Line Manager	
4	Push Rods/Snake through Pipes/Troughing.	Cuts and abrasions	C+	Be aware of sharp edges. PPE: Protective Gloves (Cut Resistant or Leather).	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Hand injuries	C+	Secure handling PPE: Protective Gloves (Cut Resistant or Leather).	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Muscular strain	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Avoid reaching and stretching for prolonged periods. Reduce exposure by introducing frequent breaks and rotate jobs. Perform all movements smoothly, in a controlled, balanced & comfortable position. Use assistance if required. Use correct tools for the task.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling

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4	Push Rods/Snake through Pipes/Troughing. (cont.)	Restricted room for movement	B-	Reduce exposure by introducing frequent breaks and rotate jobs. Use assistance if required	C-	Line Manager	
5	Attach cable to Rod/Snake	Cuts and abrasions	C+	Be aware of sharp edges. PPE: Protective Gloves (Cut Resistant or Leather).	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
6	Pull Rod/Snake through with attached cable.	Muscular strain	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Avoid reaching and stretching for prolonged periods. Reduce exposure by introducing frequent breaks and rotate jobs. Perform all movements smoothly, in a controlled, balanced & comfortable position. Use assistance if required. Use correct tools for the task.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
7	Disconnect cable from Rod/Snake	Cuts and abrasions	C+	Be aware of sharp edges. Cut away from body & limbs. Use appropriate tools. PPE: Protective Gloves (Cut Resistant or Leather).	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
8	Exit and close Pit / Troughing lid	Falling from heights	B+	Ascend facing the ladder maintaining three points of contact with the hands gripping the stiles or each rung. Tools to be carried using either a bag that allows both hands to be free, or passed up to the pit opening before climbing.	C-	Line Manager	SMS-06-GD-0240 Working At Heights

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8	Exit and close Pit / Troughing lid (cont.)	Confined spaces <u>Note:</u> Only applies to cable pits assessed as a confined space.	A	When immediately exiting the confined space, report to the stand-by person and note the time of exit in the entry permit. At the completion of work, the confined space entry shall be closed and secured; and the permit returned to the issuer and closed. Records of all confined space permits must be kept.	C+	Line Manager	SMS-06-GD-0035 Confined Spaces SMS-06-GD-0323 Personal Protection Equipment SMS-06-FM-0037 Confined Space Entry Permit
		Cuts and abrasions	C+	Be aware of sharp edges. PPE: Protective Gloves (Cut Resistant or Leather).	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Crush injuries	C+	Co-ordinate lifting PPE: Protective Gloves (Cut Resistant or Leather).	D	Line Manager	SMS-06-GD-0001 Guide to Manual Handling SMS-06-GD-0323 Personal Protection Equipment
		Manual Handling	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Lift using your legs and body weight, not your back. Perform all movements smoothly, in a controlled, balanced & comfortable position. Use a mechanical device (pit lid lifter) and if required use assistance when lifting. Co-ordinate lifting	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling

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9	Vacate site.	Manual Handling	B-	<p>Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees.</p> <p>Lift using your legs and body weight, not your back.</p> <p>Perform all movements smoothly, in a controlled, balanced & comfortable position.</p> <p>Use of mechanical device to transport cable drum.</p> <p>Adequate staff to help with the transporting of equipment.</p>	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
		Slips, trips and falls	B-	Maintain awareness of terrain. PPE: Safety Boots	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Struck by train	A	Adhere to worksite protection. PPE: High Visibility Vest	C-	Protection Officer Line Manager	SMS-06-GD-0323 Personal Protection Equipment

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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		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	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.
			F1	F2	F3	F4	F5	F6	
Incredible	Improbable	Remote	Occasional	Probable	Frequent	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.			
>10 Fatalities	C6	Disastrous	B-	B+	A	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-	