Operating Work Substations

SWMS number:
SMS-06-SW-0515

SWMS Name:
Operating Work Substations

SWMS Team:
Ron Walsh
Gary Bugden
Danny Bercli

Custodian (Position):
Business Systems Officer
Metro North Region
Michael Swadling

Assumptions:
Daylight, fine weather, planned work. Includes traction and distribution (ground and pole mount) substations and sectioning huts.

Approving Authority (Position):
General Manager
Infrastructure Division

Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group)
Maintenance Manager, Electrical Illawarra
SEQ Systems Administrator

Applicable Standards, Codes of Practice and guidance:
- ESAA Guide to electrical safety systems
- WorkCover Guide: Safe Working at Heights
- Local Instructions
- ETNs

Plant/Equipment/Tools:
As required
- HV tester
- HV earths
- keys
- danger tags
- special locks
- EWP/ ladder
- rescue kit
- Operating diagram
- Operating schedule

Records/Reporting:
As required
TEAMS 3
EOC

Permits/licences required:
Nil

PPE required:
- Standard PPE
- 185gsm 100% cotton clothing in accordance with SMS-06-SW-0538
- Hard hat

Inspection requirements
- Insulated and other Electrical equipment within test date
- daily plant & equipment check as required

Service schedule:
nil

MIMS or METRE Ref:
n/a

Training/Qualifications required:
Authorised Operator
Manual Handling techniques

Operating Work Substations

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	Applicable RailCorp documents
1	Verify that tools / operating safety equipment is fit for purpose and in date	Contact with electricity from faulty tools and equipment	C+	Check tools / equipment are in date and not damaged or defective	C-	Team Member	
2	Carry out Switching	Contact with Electricity	B+	Maintain clearances from live equipment or work within accordance with ENSR Check tools / equipment are in date and not damaged or defective	C+	Team Member	ENSR/ETNs
		Burns from sparking, switching incorrect switch	B-	Correct identification of switch Liase with EOC	C-	Team Member	ESNR
		Struck by falling object	C+	Hard Hat	C-	Team Member	
		Manual Handling / Muscular Stress	C+	Manual Handling Training	C-	Team Manager	
		Bites & Stings	C+	Inspect and spray following MSDS Gloves	C-	Team Member	MSDS for insect spray
3	Prepare earths	Manual Handling / Muscular Stress	C+	Manual Handling Training Use team lifts if practicable	C+	Team Manager Team Member	
		Contact with Electricity	A	Maintain Clearances from live equipment	C+	Team Member	ESNR
4	Test dead	Contact with Electricity	B+	Maintain clearances from live equipment Check tools / equipment are in date and not damaged or defective	C+	Team Member	ESNR/ETNs
		Struck by falling object	C+	Hard hat	C-	Team Member	

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		Manual Handling / Muscular Stress	C+	Manual Handling Training	C-	Team Manager	
5	Apply earths	Contact with electricity	B+	Maintain clearances from live equipment Check tools / equipment are in date and not damaged or defective	C+	Team Member	ESNR/ETNs
		Burns from sparking, switching while still energised	B-	Correct identification of switch Has been tested dead before operation Liase with EOC	C-	Team Member	ESNR
		Struck by falling object	C+	Hard hat	C-	Team Member	
		Manual Handling / Muscular Stress	C+	Manual Handling Training	C-	Team Manager	
		Falls from heights	C+	Work Attached according to SWI	C-	Team Member	SWI: Fall Arrest Systems (all)
6	Issue electrical permit	Contact with electricity, working where not isolated.	A	Issue permit in accordance with ESNRs	B-	Permit Issuer	ESNRs
7	Cancel electrical permit	Contact with electricity, reenergise while working	A	Cancel permit in accordance with ESNRs	B-	Permit Issuer	ESNRs
8	Remove earths	Struck by falling object	C+	Hard hat	C-	Team Member	
		Manual Handling / Muscular Stress	C+	Manual Handling Training	C-	Team Manager	
		Falls from heights	C+	Work Attached according to SWI	C-	Team Member	
9	Carry out switching to restore supply	Electric shock from energised equipment	B+	Maintain clearances Check tools / equipment are in date and not damaged or defective	C+	Team Member	ESNR/ETNs

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		Burns from sparking	B-	Correct identification of switch Liase with EOC	C-	Team Member	ESNR
		Struck by falling object	C+	Hard Hat	C-	Team Member	
		Manual Handling / Muscular Stress	C+	Manual Handling Training	C-	Team Manager	
		Bites & Stings	C+	Inspect and spray following MSDS Gloves	C-	Team Member	MSDS for insect spray

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.

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