Rail Grinding

Issue date: 10/04/08
Review date: 17/02/11

SWMS number:

SMS-06-SW-1034

SWMS Name:

Rail Grinding

SWMS Team:
Track Review Team

Custodian (Position):
Track Works Manager
Commercial / Renewals

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)
Track Works Manager & SEQ Coordinator Asset Management Group
Commercial / Renewals

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

Applicable Standards, Codes of Practice and guidance:

- Electrical Safety Instruction Section 2.7
- ESC220 – Rail & Rail Joints
- TMC225 – Rail Grinding
- TMC226 – Rail Defects Handbook
- TMC501 – Bushfire Hazard Management Manual
- Network Rules and Procedures
- OH&S Regulations 2001
- OH&S Act 2000
- Rail Safety Act 2002
- Rail Safety Regulation 2003
- RailCorp Safety Management System
- EC14 – Guide to Electrical Workers Safety Equipment

Plant/Equipment/Tools:

- Rail Grinding Machine
- Paint / Texapen
- F Sheets
- Rail Grinder profile templates
- Roughness Gauge
- Flags
- Camera
- Lights
- Detonators
- Stop/Slow hand-held traffic indicator
- Knapsacks
- Hi-Rail Fire Support vehicles
- Fire retardant
- All plant used underground is to have diesel engines
- Grinder to be aspirated
- Emergency Spill Response Kits
- Railmate
- Rail Surface Scanner

Records/Reporting:

- Worksite Protection Plan
- Pre-Work Brief
- Possession Notes
- Electrical Permit
- Daily Grinding Record
- Rail Profiles Pre- and Post-Grinding (when required)
- Rail Roughness
- Rail Corrugation Readings
- Traffic Management Plans (if required)
- Daily Plant Checklist
- Fuel and Hydraulic Oil MSDS's
- Letterbox Drop
- Environmental Protection Plan

Service schedule:
Team Leader

MIMS or METRE Ref:
Nil

Permits/licences required:

- Electrical Permit Holder
- Hot Works Permit
- Rail Grinder Operator Certificate
- Noise Licence

Training/Qualifications required:

- Rail Grinding Course
- OH&S General Induction for Construction Work in NSW
- Track Safety Awareness and Electrical Awareness or
- Rail Industry Safety Induction (RISI)
- Applicable Plant and Safeworking competencies (as required)
- Track Vehicle Operator Competency Training (as required)
- Traffic Officer
- Electrical Permit Holder QEL29

PPE required:

- Steel Capped Lace-Up Safety Boots
- High Visibility Orange Vest
- Hard Hats
- Heavy Duty Safety Glasses
- Protective Clothing
- Hearing Protection (as required)
- Gloves (as required)
- Dust Masks (as required)

Inspection requirements:
For Plant and Equipment inspections refer to Daily Plant Checklists accompanying the machine.

Rail Grinding

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	Track Inspection Measuring And Marking	Hit By Train	A	Work in accordance with Network Rules and Procedures PO to complete a Worksite Protection Plan Every one to have Track Safety Awareness and Electrical Awareness or Rail Industry Safety Induction (RISI)	B-	Protection Officer (PO4)	Network Rules & Procedures
2	Access To Machine All Work Around The Machine Refer To Contractors SWMS	Slipping /Falling While Accessing The Machine Falling From Machine	B+ B+	Use two Hands while climbing onto the machine. Keep Chains on walkway Gates	C+ C+	Supervisor All Staff	Plant SMS-06-GD-0225
3	Travel To Site	Strike Other Worksites Hit By Train	A	Work in accordance to Network Rules and Procedures	B-	Po4/ Traffic Officer	Network Rules and Procedures
4	Set Up Work Site	Being Struck By Other Worksites Equipment. Hit By Train	A	Set up worksite protection in accordance with Network Rules and Procedures	B-	Po4 All Staff	Network Rules and Procedures

WARNING

The Following Precautions Are To Be Undertaken For When Using Hot Works As In Activities 5, 5a, 5b & 5c During Total Fire Bans:

- An Hot Works Permit Must Be Issued Before Work Tasks Are To Be Performed
- The Rail Grinder Operator 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 Rail Grinding Tasks
- Fire Fighting Equipment Must Be On Hand At The Worksite E.G. Water cart, Knapsacks, Fire Extinguishers

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5	Grind Track	Grinding Personnel Hit By Sparks	B+	Create an exclusion zone around worksite. Only necessary staff to be near machine All staff to hold current TMO Tickets	C-	Site Supervisor To Check All Staff Hold TMO Tickets All Staff	Standard TMC225 ITP 912 PPE SMS-06-GD-0323
		Public Hit By Sparks	B+	Where public may be exposed to sparks place Traffic / Pedestrian control in place Identify risk and decide on process. If cannot be controlled cease/do not commence grinding works within effected area	D	Project Eng To Identify Risk And Decide On Process. Site Supervisor Traffic Control Contractor	Work on/near Public Roads SMS-06-GD-0372 ITP 912
		Strike Track Equipment	B+	Arrange for equipment to be removed if required. Request can be made to Regional Track Manager Paint equipment to make it more visible, E.g. Guard Rails Take care, be vigilant	C+ C+	Project Engineer To Request Removal From Relevant Person E.G. Regional Track Manager Grinding Operator To Be Vigilant. Site Supervisor During Pre Work	Plant SMS-06-GD-0225 Pre work Briefing SMS-06-FM-0163
		Strike Equipment/ Signal Failure Following Work	B+	Carry out inspection of signalling equipment during work to ensure any damage is identified for repair	C+	Site Supervisor	Plant SMS-06-GD-0225

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5a	Grind Track (Fire)	Fire - A Risk Exists Of Sparks From The Grinder Starting Fires In Sleepers Or Surrounding Vegetation. Risk Level Depends On Proximity Of Fuel (Vegetation) Humidity, Temperature, Wind		Assess risk present Assess Risk - Present Risk assessment is ongoing through the Grinding shift.		All Staff To Be Aware Of Fire Risk And Report Fires Via Radio. Assist When Required. Railcorp, Grinding And Fire Support Contractor To Monitor Conditions And Change Control Measures As Seen As Needed	Site Incident Response Procedures SMS-15-PR-0245
		Low Risk	D	Have fire support available to put out any fires.	D	Water Usage Permit During Water Restrictions	
		Moderate Risk	C+	As above plus Use side and sleeper sprays as required.	D	Fire Control Training	
		High Risk	B+	As above Pre-wet vegetation prior to grinding. Increase staff allocated to fire support.	D	Project Engineer / Site Supervisor / Fire Support Contractor	TMC501 Total Fire Bans
		Extreme Risk	A	When the risk after controls are put in place is still considered too high or when a Total Fire Ban is in place DON'T GRIND.	NIL	Project Engineer / Site Supervisor / Fire Support Contractor	Site Incident Response Procedures SMS-15-PR-0245

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		Failure Of Fire Support Equipment	B+	Daily Service and Check	C-	Grinding Contractor / Fire Control Contractor	Site Incident Response Procedures SMS-15-PR-0245
		Use Of Fire Retardant	B+	Use appropriate protective equipment. Use fire retardant in correct manner	C-		Plant SMS-06-GD-0225
5b	Grind Track (Working In Tunnels)	Noxious Gases	A	Have an air extraction unit / filter set up to clean the air	C+	Project Engineer	Hazardous Substances SMS-06-GD-0199
		Dust	B+	Wear appropriate protection- dust mask	C+	Site Supervisor All Staff	Respiratory Protection SMS-06-SW-0535
5c	Grind Track (Environmental)	Noise	B+	Machine has noise reduction technology in place to reduce noise levels.	C+	Contractor To Keep Machine In Good Order	Noise licences
		Noise While Servicing Machine	B+	Letter box drop	C+	Project Engineer To Ensure Drop Has Been Done	Noise Management SMS-06-GD-0273
		Environmental Sensitive Areas	B+	Consideration of neighbouring properties to be given when machine is kept stationary for servicing. Relocate to open area or industrial area if possible. As per regional identification	C+	Project Engineer To List Locations That Will Need Special Consideration During Grinding	EPA Environmental Management Plan

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6	Machine Maintenance	Electrocution From Overhead Powerlines	A	Machine design of access points for filling and maintaining machine. Machine posted at critical locations No-one should climb above the machine platform	C-	Machine Operator	SWMS of SPENO Work Around Elect. Equip. SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577 Network Rules and Procedures NPR714, NGE228 Electrical Permits SMS-06-EN-0577
		In The Event Of Someone Needing To Do Work Above The Height Of The Grinders Platform	A	Find nearby work group that is holding a power out permit. Sign onto there permit , do work, Sign Off	C+	Electrical Permit Holder Qel29	
Note Hazards Exist In Respect To Machine Maintenance Which Is Covered In Contractors SWMS							
7	Machine Maintenance/ Working	Oil Spill Machine Maintenance	B+	As per Contractors SWMS Spill Kit	C-	Iso14001	EPA

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.