

**BHP Billiton Iron Ore - Mount Newman
Supply Authority**



Electricity (Network Safety) Regulations 2015 (WA)

Annual Network Safety Performance Objectives 2015



Executive summary

Mount Newman Supply Authority annual network safety performance objectives

Network safety performance incident		2015/16	2016/17	2017/18		
(a)	Total Electric Shock	30	15	5		
	i) Electric Shock - No Injury	30	15	5		
	ii) Electric Shock – Injury	0	0	0		
	iii) Electric Shock – Death	0	0	0		
	iv) Livestock – Death	0	0	0		
(b)	Property Damage (Not Fire)	0	0	0		
(c)	Property Damage (Fire)	5	3	0		
(d)	Wood pole fire	T ¹	N/A	N/A	N/A	
		D	N/A	N/A	N/A	
(e)	Conductor clashing	T	0	0	0	
		D	2	1	0	
(f)	Unassisted pole failures ²	T ¹	0	0	0	
		D	Steel	0	0	0
			Wood	N/A	N/A	N/A
			Concrete	N/A	N/A	N/A
(g)	Unassisted overhead conductor failures	T	0	0	0	
		D	0	0	0	
(h)	Unassisted stay failures	T	0	0	0	
		D	1	0	0	
(i)	Unassisted cable failure	T	1	0	0	
		D	4	1	1	

1. All steel poles for the Transmission and Distribution system.
2. Refer to section 3.6 on pole types and failure rates.

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Contents page

Overview	4
1. Purpose	4
2. Definitions	4
2.1 Mount Newman Supply Authority	4
2.2 Mount Newman Supply Authority Network	4
Network Safety Performance	6
3. Network Safety Performance Incidents	6
3.1 Electric shock, injury or death	6
3.2 Property damage (non- fire)	6
3.3 Property damage (fire)	6
3.4 Wood pole fire – transmission/distribution	6
3.4.1 Transmission System	6
3.4.2 Distribution System	6
3.5 Conductor clashing – transmission/distribution	6
3.5.1 Transmission System	6
3.5.2 Distribution System	7
3.6 Unassisted pole failure – transmission/distribution Including type & rate	7
3.6.1 Transmission System	
3.6.2 Distribution System	7
3.7 Unassisted overhead conductor failure – transmission/distribution	7
3.7.1 Transmission System	7
3.7.2 Distribution System	7
3.8 Unassisted stay failure – transmission/distribution	7
3.8.1 Transmission System	7
3.8.2 Distribution System	7
3.9 Unassisted cable failure – transmission/distribution	7
3.9.1 Transmission System	7
3.9.2 Distribution System	8

Overview

1. Purpose

This report details the network safety performance objectives for the Mount Newman Supply Authority with respect to the requirements of the Electricity (Network Safety) Regulations 2015 (WA), and is compiled to meet the requirements of regulation 31.

2. Definitions

2.1 Mount Newman Supply Authority

For the purpose of this report, Mount Newman Supply Authority refers to the collective Network Operator listed in regulation 4(1) (f), 4(1) (g) and 4(3).

2.2 Mount Newman Supply Authority Network

The Mount Newman Supply Authority, own, operate and maintain the generation, transmission and distribution electricity network within the Pilbara region which supplies power to its iron ore operations and to the Newman Township, associated bore fields, Newman Airport and Capricorn roadhouse.

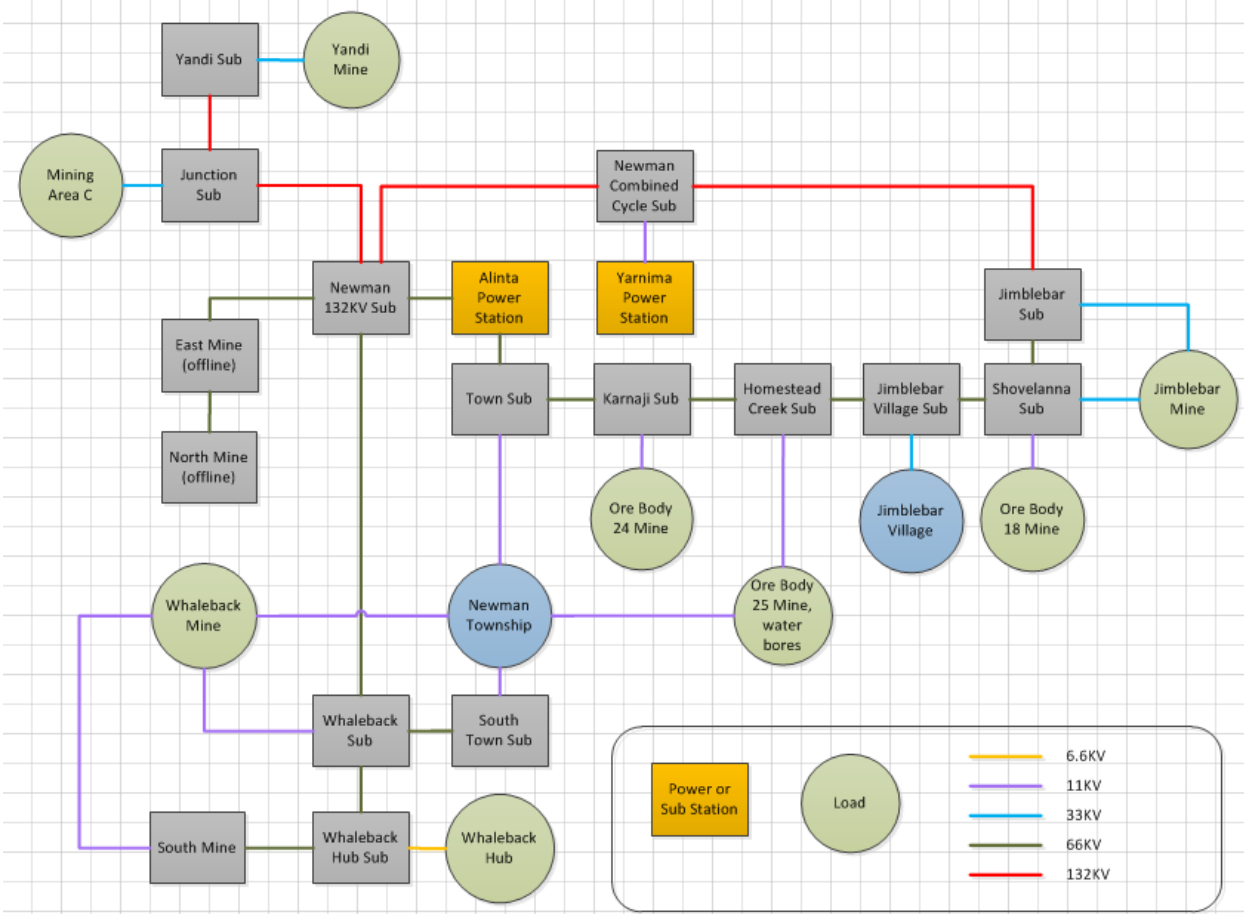


Figure 1: Mount Newman Supply Authority, Transmission and Distribution networks (Block)

NEWMAN HV NETWORK

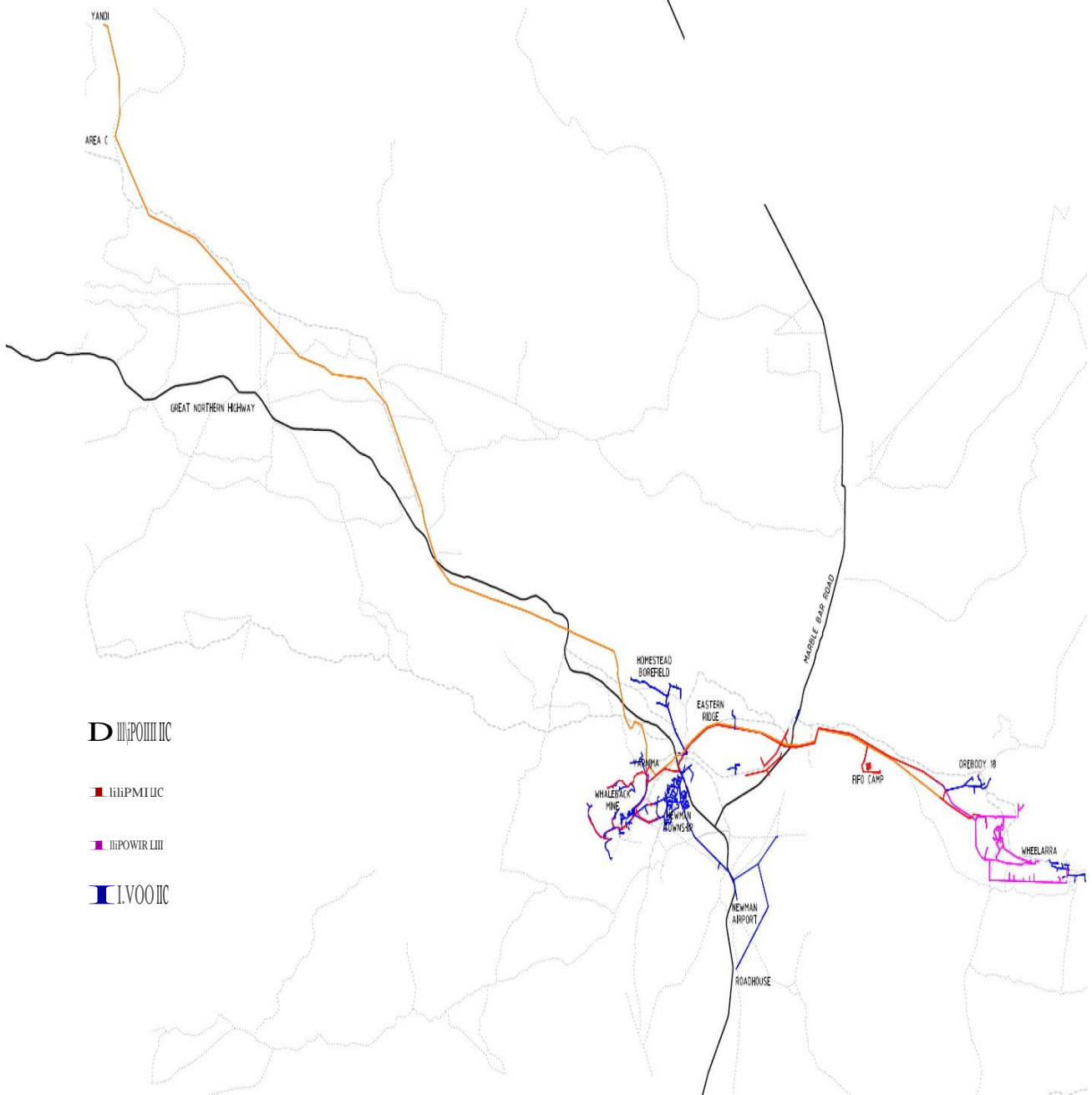


Figure 2: Mount Newman Supply Authority, Transmission and Distribution networks (topographic)

The following are network safety performance objectives to comply with regulation 31

3. Network Safety Performance Incidents

3.1 Electric shock, injury or death

Definition: “A discharge of electricity from the network that causes the electric shock, injury or death of a person or the death of livestock”;

Mount Newman Supply Authority regularly inspects and maintains the network to ensure the company’s charter value of Sustainability is first and foremost. Mount Newman Supply Authority actively promotes electrical safety both internally and within the community.

3.2 Property damage (non-fire)

Definition: “An incident caused by the network, other than a fire, that causes damage to property other than to the network”;

Mount Newman Supply Authority regularly inspect and maintain the network in accordance with BHP Billiton Iron Ore work management process. The inspection and maintenance strategy is developed to ensure minimization of risk, whilst also seeking industry guidance enabling optimization and continual improvement of the strategy.

3.3 Property damage (fire)

Definition: “A fire caused by the network that causes damage to property other than to the network”;

Mount Newman Supply Authority regularly inspect and maintain the network in accordance with BHP Billiton Iron Ore work management process. The inspection and maintenance strategy is developed to ensure minimization of risk, whilst also seeking industry guidance enabling optimization and continual improvement of the strategy.

3.4 Wood pole fire – transmission/distribution

Definition: “A fire, on a wood pole that is a part of the network, which originated on the pole”;

3.4.1 Transmission System

Mount Newman Supply Authority does not have any wood poles that exist within the transmission system, therefore not applicable.

3.4.2 Distribution System

Mount Newman Supply Authority does not have any wood poles that exist within the transmission system, therefore not applicable.

3.5 Conductor clashing – transmission/distribution

Definition: “The contacting of 2 or more conductors of the network, of different phases, caused by temperature variations or wind”;

3.5.1 Transmission System

Mount Newman Supply Authority has experienced no evidence of faults triggered by conductor clashing impacting on the Transmission Network. The inspection regime

consists of Visual Inspection, Non-Intrusive Testing and Electrical Testing, to ensure accurate asset integrity assessment.

3.5.2 Distribution System

Mount Newman Supply Authority has experienced two (2) events that are characteristic of faults triggered by conductor clashing impacting on the Distribution Network. The inspection regime consists of Visual Inspection, Non-Intrusive Testing and Electrical Testing, to ensure accurate asset integrity assessment.

3.6 Unassisted pole failure – transmission/distribution including type & rate

Definition: “An unassisted failure of a pole that is a part of the Network”;

3.6.1 Transmission System

All steel construction. No historical evidence of reported incident with the steel construction. The inspection regime consists of Visual Inspection and Non-Intrusive Testing to ensure accurate asset integrity assessment.

3.6.2 Distribution System

All steel construction. No historical evidence of reported incident with the steel construction. The inspection regime consists of Visual Inspection and Non-Intrusive Testing to ensure accurate asset integrity assessment.

3.7 Unassisted overhead conductor failure – transmission/distribution

Definition: “An unassisted failure of an overhead conductor that is a part of the network”;

3.7.1 Transmission System

Mount Newman Supply Authority has experienced no evidence of faults triggered by conductor failure impacting on the Transmission Network. The inspection regime consists of Visual Inspection, Non-Intrusive Testing and Electrical Testing, to ensure accurate asset integrity assessment.

3.7.2 Distribution System

Mount Newman Supply Authority has experienced no evidence of faults triggered by conductor failure impacting on the Distribution Network. The inspection regime consists of Visual Inspection, Non-Intrusive Testing and Electrical Testing, to ensure accurate asset integrity assessment.

3.8 Unassisted stay failure – transmission/distribution

Definition: “An unassisted failure of a stay wire that is a part of the network”;

3.8.1 Transmission System

All steel construction towers. Periodic structural integrity inspection carried out to identify any defects.

3.8.2 Distribution System

All steel construction poles. Periodic structural integrity inspection carried out to identify any defects.

3.9 Unassisted cable failure – transmission/distribution

Definition: “An unassisted failure of an underground cable that is a part of the network”;

3.9.1 Transmission System

Mount Newman Supply Authority has experienced minimal faults on underground Transmission Network. The inspection regime consists of Visual Inspection (above ground sections including ancillary equipment) and protection device maintenance and calibration, to ensure safe operation.

3.9.2 Distribution System

Mount Newman Supply Authority has experienced minimal faults on underground Transmission Network. The inspection regime consists of Visual Inspection (above ground sections including ancillary equipment) and protection device maintenance and calibration, to ensure safe operation. Recent upgrades to the underground distribution network have also improved the system integrity.