



EnergyAustralia

EnergyAustralia Yallourn

Electricity Safety (Electric Line Clearance) Plan 2025/2026

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VERSION HISTORY

Version	Date	Author	Reason
1.0	March 2011	Paul Metlikovec	Initial Issue
2.0	March 2011	Otto Stumpf / David Wykes	Annual Review
2.1	September 2012	Jacinta Beange	Corporate Re-brand / Organisational Changes
2.2	March 2014	Rachel Alexander	YMA Management System document number changes
3.0	June 2014	Otto Stumpf	Purpose & Scope added, Electrical Line Clearance Plan updated to reflect changes in the Bushfire Mitigation Plan, additional clauses added
4.0	May 2015	Otto Stumpf	Periodic Review and updated plan
5.0	March 2016	Otto Stumpf	Periodic Review and updated plan
6.0	May 2017	Otto Stumpf	Periodic Review; Updated several clauses to comply with the Electrical Line Clearance Regulation 2016; updated telephone numbers, added new photo. Minor changes made to clauses 5.2, 5.3 and 5.4 after the review
7.0	March 2019	Otto Stumpf	Periodic Review & internal audit;
7.1	Dec 2019	Brad Miller	Revision to address feedback comments from ESV
7.2	March 2020	Brad Miller	Revision to address feedback comments from ESV
7.3	July 2020	Brad Miller	Revision to address feedback comments from ESV
8.0	Sept 2020	Brad Miller	2020/2021 Plan preparation
9.0	March 2021	Brad Miller	Periodic review and updated plan
10.0	May 2022	Brad Miller	Periodic review and updated plan
11.0	March 2023	Mathew Howlett	Periodic review and updated plan
12.0	March 2024	Mathew Howlett	Periodic review
13.0	February 2024	Mathew Howlett	Periodic Review
14.0	February 2025	Mathew Howlett	Periodic Review
15.0	February 2026	Mathew Howlett	Periodic review and updated plan

AMENDMENTS IN THIS VERSION

No.	Amendment Summary	Amended By
Version 15.0		
1.	Update person responsible for plan implementation	M. Howlett
2.	Update Section 6 of the plan to reflect Bushfire Mitigation Plan and site overhead asset management plan.	M. Howlett
3.	Addition of Section 6.1 to document requirements for vegetation clearance space aligned with Bushfire Mitigation Plan and site overhead asset management plan.	M. Howlett
4.	Updated drawings in Appendices 1 & 2	M. Howlett

PURPOSE & SCOPE

WHAT	<p>The objective of the Electric Line Clearance Plan is to ensure that there are procedures and processes at the Yallourn site to comply with the Electricity Safety (Electric Line Clearance) Regulations 2020.</p> <p>The procedures define the practises for the management of cutting trees in the vicinity of electric lines and maintenance of the lines to reduce the potential of electric lines causing fire or electrocution.</p> <p>The Electric Line Clearance Plan is interlinked with the Bushfire Mitigation Plan and the documented activities must be monitored and audited each year to verify compliance with the plan. The plan must be updated before 31 March each year and upon request from Energy Safe Victoria.</p>
WHEN	<p>This procedure is to be utilised when planning vegetation clearance activities in the vicinity of overhead lines on the Yallourn site.</p>
WHO	<p>This procedure shall be followed by all responsible personnel who implement the Electric Line Clearance Plan and the nominated responsible officer who reviews the plan.</p>
WHY	<p>This procedure has been developed to comply with the Electricity Safety (Electric Line Clearance) Regulations 2020.</p>

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2 Preparation of Plan

Specified Operator	EnergyAustralia Yallourn Pty. Ltd
Responsible Person	Lance Wallace
Position	Manager Mining EnergyAustralia Yallourn
Office Address	Eastern Road, Yallourn, Victoria, 3825
Postal Address	PO Box 444, Moe, Victoria, 3825
Telephone	(03) 5128 4044

Person Responsible for Plan Preparation	Mathew Howlett
Position	Risk & Compliance Lead EnergyAustralia Yallourn
Office Address	Eastern Road, Yallourn, Victoria, 3825
Postal Address	PO Box 444, Moe, Victoria, 3825
Telephone	0400 054 489

Person Responsible for Plan Implementation	Jeremy Kaiser
Position	Electrical Engineer
Office Address	Eastern Road, Yallourn, Victoria, 3825
Postal Address	PO Box 444 Moe Victoria, 3825
Telephone	0421 561 957

Emergency Tree Clearance for Immediate Action	For after hours - Ventia Maintenance Contact Officer (Phone number updated weekly - refer to Mine Shift Supervisor 0418 583 008)
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3 Definitions and Abbreviations

Estate Services	Yallourn site facilities management group.
GIS	Graphic Information System integrating hardware, software and data to manage and analyse information related to Yallourn mining operations.
YMA	Yallourn Mine Alliance – Alliance between EnergyAustralia, RTL Mining and Earthworks and Ventia for management of mining operations.

4 Objectives of the Plan

The Energy Australia Yallourn Electricity Safety (Electric Line Clearance) Plan provides a set of instructions that are integrated with the Bushfire Mitigation Plan and other site procedures for the Mine, Power Station and Estate Services to manage the safe removal of vegetation in the vicinity of electric lines to reduce the potential for fire or electrocution.

The objectives of the Plan are to:

- fully comply with the Electricity Safety (electric line clearance) regulations
- maintain a program of asset inspections consistent with the assessed level of risk.
- manage vegetation fuel loads and electric line clearances in a timely manner to minimise fire risk.
- maintain protection of areas of important vegetation
- ensure reliability of power supply
- ensure public and workplace safety.
- maintain community satisfaction.
- assess the performance of programs supporting this plan and strive for continual improvement.

Electronic copies of the Yallourn Electric Line Clearance plan can be found on the EnergyAustralia website:

[Ensuring we do the right thing | EnergyAustralia](#)

5 Site Layout and Vegetation Clearance Responsibilities

5.1 EnergyAustralia Overhead Lines

The site plan (

Appendix 1 - Site Plan) shows the overall area of the Yallourn site. The area surrounding the Yallourn site has been designated as a bushfire prone area (BPA). The Minister for Planning makes a formal determination to designate BPA's under section 192A of the *Building Act 1993*. This determination is based on a detailed review process with designated BPA's shown on the bushfire prone area map (below).

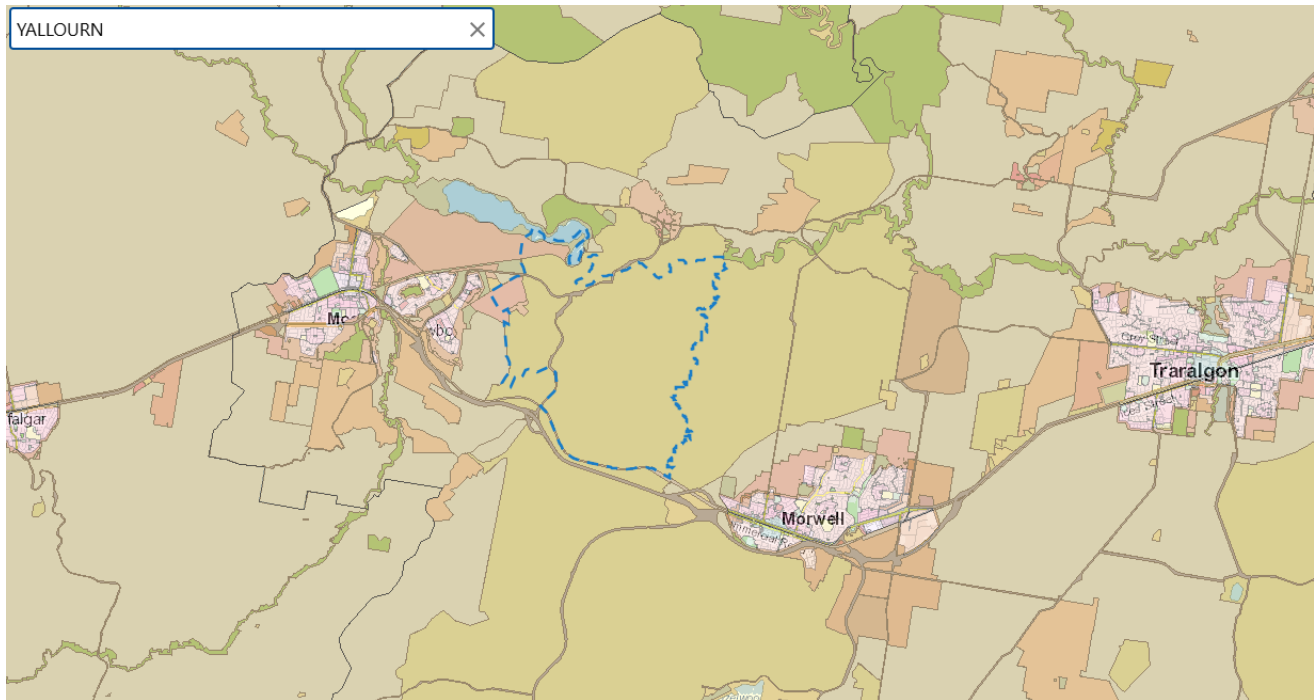



Figure 1 Yallourn Mine BPA Map

 BPA - Bushfire Prone Areas

An area is designated as a bushfire prone area based on its bushfire hazard level. This is an indicator of how extreme a bushfire can be, based on landscape conditions.

The overhead lines shown in the site plan are the general position of the overhead lines on the site however, the Mine is a dynamic operation, and the overhead lines are re-routed as required to meet mining requirements. Single line drawings and layout drawings are continually updated to record the overhead lines on site with current drawings available for provision to Energy Safe Victoria upon request.

5.2 Non EnergyAustralia Overhead Lines

On the Yallourn site, there are overhead lines owned and managed by others, typically Ausnet Services power lines. The Ausnet Services power lines are located on easements on the site and are clearly marked in the site drawings (Appendix 2). These lines are managed by Ausnet and are not included in the EnergyAustralia Yallourn Electricity Safety (Electric Line Clearance) Plan. Ausnet Services will coordinate the cutting of vegetation in the vicinity of their overhead lines with Estate Services.

7 Management of Yallourn Overhead Electric Lines

The design, maintenance, inspection and operational requirements for management of the site’s high and low voltage overhead reticulation system is described in the YMA procedure [Management of HV & LV Overhead Distribution System](#) (Appendix 5).

The Team Electrical Engineer (Mine) is responsible for the management of vegetation near power lines on the Yallourn site in accordance with procedural requirements. Responsibilities include: -

- Preparation of the Electric Line Clearance Plan by 31st March each year
- Implementation of the Electric Line Clearance Plan
- Implementation of an inspection routine for Electric Lines
- Arranging for clearance of vegetation near power lines in accordance with regulatory requirements

8 Vegetation Inspections and Management

Achieving regulatory power line clearances between powerlines and vegetation is accomplished through a program of annual inspection and defined actions from these inspections. Where required, pruning to maintain minimum clearance space will be completed by an approved company in accordance with AS4373 – “Pruning of Amenity Trees.

A vegetation clearance corridor extends five metres either side of all powerlines and any vegetation within the corridor is kept below 1 metre in height.

Vegetation control companies conduct inspections and work on a twice-yearly basis to determine vegetation controls requirements and to slash and poison vegetation in the clearance corridor to maintain the vegetation in accordance with procedural requirements.

Arborists conduct annual inspections and vegetation management activities for vegetation that has the potential to grow into the clearance space of overhead assets.

Regrowth of trees outside the line corridor may be estimated by the arborist considering the age of the tree, type of tree, part of the tree and previous experience. If the regrowth is expected to enter the line clearance corridor the tree must be identified in the field and cleared accordingly.

Additionally, vegetation growth in the vicinity of powerlines is reported by:

- asset inspection contractors
- YMA employees and other contractors

Service Levels	Measure	Meeting Target	Assessment Timeframe
1	Line Clearance audit	All trees identified in the pre-Summer Inspection, report completed and defect workorders generated in Maximo	Completed in 4 weeks starting 1 September October
2	Weed Control poles	Spray base area of each mine owned pole on site	Completed in 8 weeks Starting 1st February Site inspection Mid-April.
3	Weed Control poles	Spray base area of each mine owned pole on site	Completed in 8 weeks Starting 1st October Site inspection Mid December.
4	Identified trees requiring pruning	Contractor works completed in 4 weeks from issue of notification	100 % Re Inspection in 6 weeks

Table 1 Line Clearance Activities and Timing

An additional distance must be added to the clearance space to allow for the sag and away of the conductors and for vegetation regrowth during the period between pruning times.

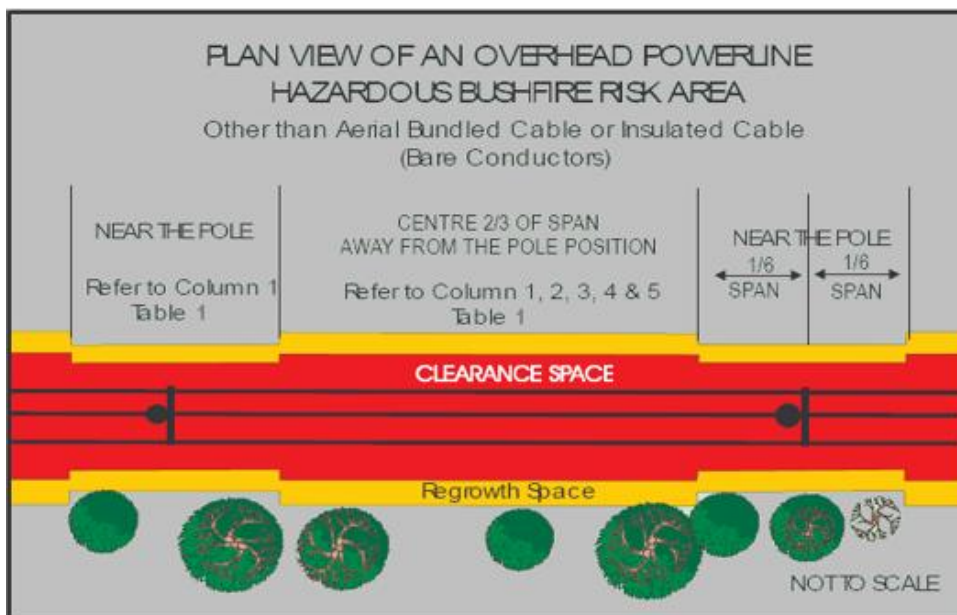


Figure 3 Hazardous Bushfire Risk Area - Bare Conductors, Plain View

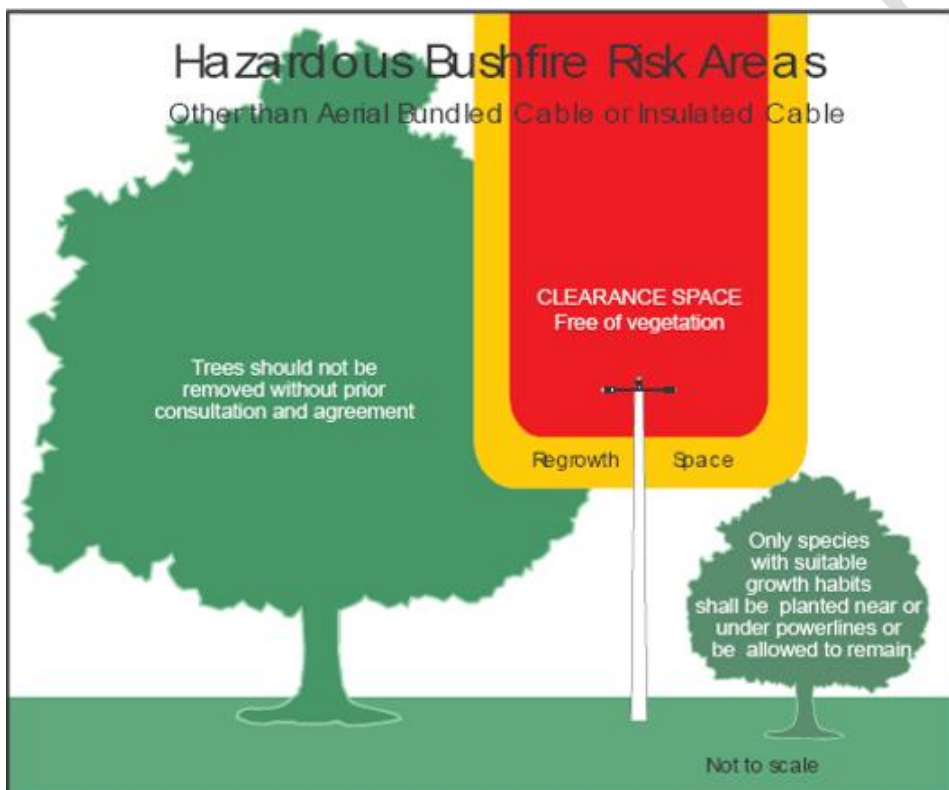


Figure 4 Hazardous Bushfire Risk Area - Bare Conductor, Clearance Space

9 Performance Measures & Auditing

The Electricity Safety (Electric Line Clearance) Plan will be reviewed annually in March and updated to reflect any changes in the regulations and any continuous improvement opportunities. A review will be carried out to assess the implementation of the plan against the defined objectives and the compliance of the plan with current regulation.

The review requirements are documented as a Task (Ref 371033) in EnergyAustralia's Regulatory Compliance Management System Archer.

Whilst vegetation management works are in progress regular workplace audits will be conducted in the field to monitor performance in accordance with [YMA procedure Management of HV & LV Overhead Distribution System](#). The YMA Job Safety Interaction proforma will be used to for audits of safe work practices.

Annual post work inspections will be completed to verify that the line clearance requirements have been met. Where the vegetation clearance work is not satisfactory, or the required clearance has not been achieved, additional clearance works will subsequently be arranged.

The Team Engineer Electrical (Mine) will communicate with vegetation clearing personnel to specify the extent of pruning required and receive feedback to monitor progress of the program of works.

Vegetation control companies inspect overhead conductors on a twice-yearly basis and clear any vegetation approaching the minimum distances. Should any vegetation breach the minimum distances or contact the conductors then the line will be isolated, and work carried out under permit conditions.

10 Requirements for conducting clearance works

All personnel clearing vegetation near overhead lines will be engaged or under the control of representatives from EnergyAustralia. Within the mine area this is managed via the [YMA Contractor Management Procedure](#) (Appendix 6) which describes the procedures for ensuring contractors have the required qualifications and competencies to safely work on site.

The Team Electrical Engineer (Mine) shall review the qualifications and experience of contractors / personnel and the proposed methodology for removal of vegetation before authorising works to remove tress/vegetation near overhead lines. Works are required to be conducted in accordance with the requirements of Electricity Safety (Installations) Regulations, the Blue Book, and relevant site procedures. A safe work method statement and job safety assessment must be completed and reviewed prior to commencing vegetation clearing work near overhead power lines. Cutting of trees must be done, as far as practical, in accordance with AS 4373 (Pruning of amenity trees) and the Code of Practice for Electric Line Clearance.

Description of works	Required Competency (Min requirements)	Required Site Training
Vegetation Works		
<p>Vegetation works include annual vegetation inspections within the power line clearance corridor (5 metres either side of all powerlines) and clearing and management of vegetation within the corridor by spraying, slashing, pruning or mulching the vegetation to a height that is no greater than 1 metre tall.</p> <p>Vegetation workers do not conduct works within the No Go Zone or the Spotter Required Zone.</p>	<p>No competency requirements.</p> <p>EnergyAustralia engage suitable vegetation control companies who supply personnel and equipment to conduct the required works.</p>	<ul style="list-style-type: none"> - Site Induction - Blue Book training and annual refresher - Work in the Vicinity of Powerlines Procedural training
Arborist Works		
<p>Arborist works include annual assessment of trees for actual or potential growth into the Electric Line Clearance Space and cutting / pruning of trees and limbs that are growing in the Electric Line Clearance Space or conducting preventative cutting / pruning of trees and limbs that have the potential to grow into the Clearance Space.</p>	<ul style="list-style-type: none"> - Certificate III in Arboriculture (AHC30820) or equivalent. 	<ul style="list-style-type: none"> - Site Induction - Safety Rules – Access to Apparatus Procedural Training – Non-Authorised Recipient (NAR) - Blue Book training and annual refresher - Work in the Vicinity of Powerlines Procedural training - Electric Line Clearance Plan – site clearance distances and requirements
Line / Pole Inspections		
<p>Inspections assess and record the condition of all poles regardless of type. Defects to be identified include:</p> <ul style="list-style-type: none"> - Poles leaning more than 10 degrees from the perpendicular - Poles that lean into a carriageway by 5 degrees or more - Poles with deteriorating pole tops including but not limited to missing or damaged pole caps 	<ul style="list-style-type: none"> - UETTDRDP11A Inspection Overhead Poles - UETTDREL18A Inspect and treat Poles - Cert II in ESI Asset inspection 	<ul style="list-style-type: none"> - Site Induction - Safety Rules – Access to Apparatus Procedural Training – Non-Authorised Recipient (NAR) - Blue Book training and annual refresher

Description of works	Required Competency (Min requirements)	Required Site Training
<ul style="list-style-type: none"> - Failures such as broken tails, cracked insulators, incorrect or damaged anchors, rusting clips/conductors, damaged or rotted cross arms or transformer supports etc. <p>Concrete poles are limited to visual inspection and recording of observed above-ground defects.</p> <p>All wooden poles are treated with Preschem Polesaver rods in conjunction with each inspection cycle.</p>		<ul style="list-style-type: none"> - Work in the Vicinity of Powerlines Procedural training

Table 3 Competency Requirements

All personnel working in the proximity of overhead lines shall understand the limits of approach and when required, apply the No Go Zones as defined in the Worksafe and ESV guidance note. Personnel shall also be appropriately trained and competent and where necessary engage a qualified electrical spotter when required.

No live work is permitted to be conducted on site. Should vegetation have grown into the safe approach distances and pruning is required, then the lines will be isolated to eliminate the potential for electrocution.

Any consultation, notifications or dispute resolutions will be managed by the Mine Team Electrical Engineer

11 Notification & Consultation

All overhead lines are located on private property and not subject to public or community access hence there is currently no requirement for public notification or consultation for vegetation clearance activities.

12 Sag & Sway Consideration

The majority of overhead lines are in non-vegetated areas. Where overhead lines do span above vegetation the sway and sag allowance are accounted for in the design of the overhead line and the minimum clearance space is nominated to ensure compliance with the Code of Practice for Electric Line Clearance. Further information including the calculation methods and systems and storage of design drawings and records is provided in YMA procedure [Management of HV & LV Overhead Distribution System](#).

13 Management of the Plan

This plan must be monitored and audited each year to identify any deficiencies in the plan and be updated before 31st March each year. It must be available upon request from Energy Safe Victoria.

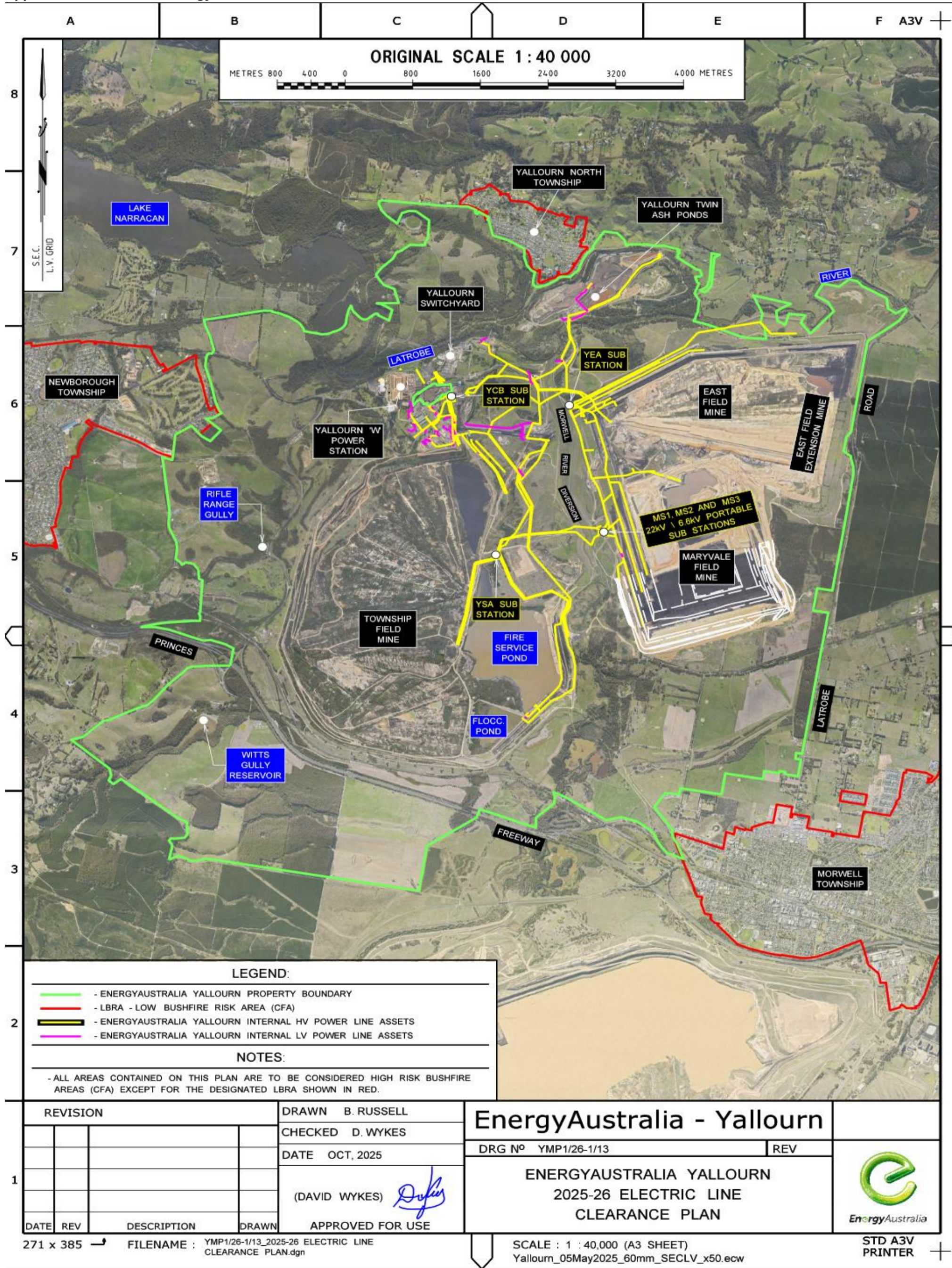
Annual review of the plan includes an audit of the effectiveness of the plan for the previous twelve months and identification and documentation of any improvements or updates. The revised plan will be circulated for approval and signature according to Yallourn's Document Approval procedure.

14 References

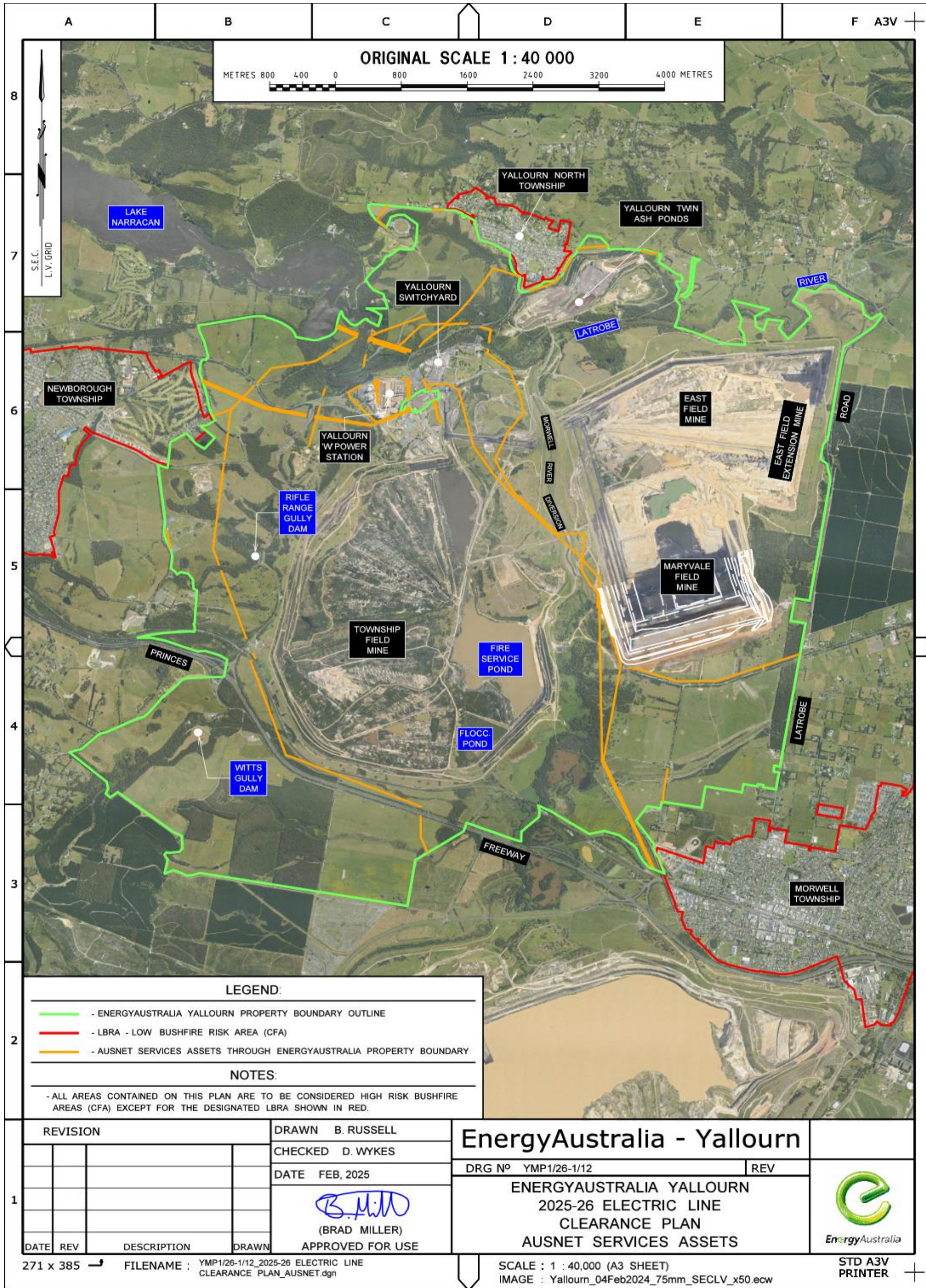
Document ID	Document Title
A1034223	SHEMS11-ESV-P001 - Wildfire Risk Mitigation
A1038971	SHEMS11-SHE-P015-L01 – EnergyAustralia Yallourn Bushfire Mitigation Plan
A1039749	SHEMS11-SHE-P015 - Management of the EnergyAustralia Yallourn Bushfire Mitigation Plan
A1065137	SHEMS13-SHE-L04 - Mine Fire Control Management Plan (FCMP)
A1037878	SHEMS10-SHE-P001 - Removal of Vegetation on the EnergyAustralia Yallourn Site
A1017664	SHEMS12-SHE-L01 - Emergency Response Plan
A1034637	YMA-OPS-PR-0374 - Management of LV & HV Overhead Distribution System
A1072179	Conservation Management Plan (CMP) - Summary 2011 - May 2013
A1030077	YMA Environmental Management Plan
A1347444	YMA-H&S-FO-0311 – YMA Job Safety Interaction Form
A2098928	YMA-H&S-PR-1039 – Contractor Safety Management
A1036714	YMA-TRN-PR-0401 - Training, Competency and Authorisations
N/A	Electricity Safety Act 1998
N/A	Electricity Safety (Electric Line Clearance) Regulations 2020

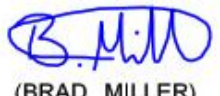
Appendices

Appendix 1 - Site Plan – EnergyAustralia controlled assets



Appendix 2 - Site Plan – Ausnet controlled assets



REVISION				DRAWN B. RUSSELL		EnergyAustralia - Yallourn		DRG N ^o YMP1/26-1/12 REV	
1				CHECKED D. WYKES					
				DATE FEB, 2025		ENERGYAUSTRALIA YALLOURN 2025-26 ELECTRIC LINE CLEARANCE PLAN AUSNET SERVICES ASSETS			
				 (BRAD MILLER) APPROVED FOR USE					
DATE	REV	DESCRIPTION	DRAWN	FILENAME : YMP1/26-1/12_2025-26 ELECTRIC LINE CLEARANCE PLAN_AUSNET.dgn		SCALE : 1 : 40,000 (A3 SHEET)		STD A3V PRINTER	
						IMAGE : Yallourn_04Feb2024_75mm_SECLV_x50.ecw			

Appendix 3 - Cross reference to the Electricity Safety (Electric Line Clearance) Regulations 2020

EA Yallourn Line Clearance Plan cross reference to the regulation		
Regulation reference number	Prescribed particulars for Electric Line Clearance plans—specified operators - Regulation	Yallourn ELCMP Section:
9 Preparation and submission of management plans		
(1)	This regulation does not apply to a responsible person referred to in section 84A or 84B of the Act.	N/A
(2)	A responsible person that is not a major electricity company, before 31 March in each year, must prepare a management plan relating to compliance with the Code for the next financial year.	13
(4)	A responsible person must ensure that a management plan prepared under subregulation (2) or (3) specifies the following—	
(a)	the name, address and telephone number of the responsible person;	1
(b)	the name, position, address and telephone number of the individual who was responsible for the preparation of the management plan;	1
(c)	the name, position, address and telephone number of the persons who are responsible for carrying out the management plan;	1
(d)	the telephone number of a person who can be contacted in an emergency that requires clearance of a tree from an electric line that the responsible person is required to keep clear of trees;	1
(e)	the objectives of the management plan;	3
(f)	the land to which the management plan applies (as indicated on a map);	Figure 1 Appendix 1 Appendix 2
(g)	any hazardous bushfire risk areas and low bushfire risk areas in the land referred to in paragraph (f) (as indicated on the map)	Appendix 1 Appendix 2
(h)	each area that the responsible person knows contains a tree that the responsible person may need to cut or remove to ensure compliance with the Code and that is—	
(i)	indigenous to Victoria; or	6
(ii)	listed in a planning scheme to be of ecological, historical or aesthetic significance; or	6
(iii)	a tree of cultural or environmental significance;	6
(i)	the means which the responsible person is required to use to identify a tree of a kind specified in paragraph (h)(i), (ii) or (iii);	6
(j)	the management procedures that the responsible person is required to adopt to ensure compliance with the Code, which—	
(i)	must include details of the methods to be adopted for managing trees and maintaining a minimum clearance space as required by the Code; and	6.1
(ii)	for the purposes of determining a minimum clearance space in accordance with Division 1 of Part 3 of the Code – (A) must specify the method for determining an additional distance that allows for conductor sag and sway; and (B) may provide for different additional distances to be determined for different parts of an electric line span;	6.1
(k)	the procedures to be adopted if it is not practicable to comply with the requirements of AS 4373 while cutting a tree in accordance with the Code;	6

EA Yallourn Line Clearance Plan cross reference to the regulation		
Regulation reference number	Prescribed particulars for Electric Line Clearance plans—specified operators - Regulation	Yallourn ELCMP Section:
(l)	a description of each alternative compliance mechanism in respect of which the responsible person has applied, or proposes to apply, for approval under clause 31 of the Code;	Error! Reference source not found.
(m)	the details of each approval for an alternative compliance mechanism that—	
(i)	the responsible person holds; and	Error! Reference source not found.
(ii)	is in effect;	Error! Reference source not found.
(n)	a description of the measures that must be used to assess the performance of the responsible person under the management plan;	9
(o)	details of the audit processes that must be used to determine the responsible person's compliance with the Code;	9
(p)	the qualifications and experience that the responsible person must require of the persons who are to carry out the inspection, cutting or removal of trees in accordance with the Code and the Electricity Safety (General) Regulations 2019;	Error! Reference source not found.
(q)	notification and consultation procedures, including the form of the notice to be given in accordance with Division 3 of Part 2 of the Code;	4.1
(r)	a procedure for the independent resolution of disputes relating to electric line clearance	Error! Reference source not found.
(s)	If Energy Safe Victoria has granted an exemption under regulation 11 relating to a requirement of the Code, details of the exemption or a copy of the exemption	6

Appendix 4 – Standard Operating Procedure – Removal of Vegetation from the EnergyAustralia Yallourn Site

1 PURPOSE AND SCOPE

1.1 Purpose

This Standard Operating Procedure defines the process for the gaining the appropriate approval when removing vegetation from the EnergyAustralia Yallourn Site. It has been put in place to ensure that the unlawful removal of native vegetation is prevented, that removal of native vegetation is to the minimum extent required and that all removal works are recorded and approved.

1.2 Scope

This procedure is to be utilised whenever native vegetation is to be cleared on the EnergyAustralia Yallourn Site and shall be followed by all EnergyAustralia Yallourn Personnel and Contractors.

2 PROCEDURE

2.1 Introduction

Native vegetation in Victoria is protected under State and Commonwealth legislation. A Planning Permit is required for clearing native vegetation on private land, such as held by EnergyAustralia Yallourn, and on public land. If approved, clearing must be compensated by offsetting improvements to comparable native vegetation. There are limited exemptions from these requirements and penalties can be severe for non-compliance.

EnergyAustralia Yallourn's Environmental Management Plan requires specific controls to ensure minimum business risk and cost when dealing with native vegetation.

Native vegetation is typically characterised as remnant vegetation patches, scattered trees or treeless vegetation/grasslands/wetlands. A number of rare and threatened native species are present on EnergyAustralia Yallourn land.

The definition of native vegetation is a specialist task, so this process is required to ensure that any proposed vegetation removal is controlled.

2.2 Removal of Native Vegetation

Where works are being carried out that may have the potential to impact on native vegetation, the Employee/Contractor must conduct a JSEA or Risk Assessment to consider the potential impact on native vegetation.

Refer to:

[SHEMS11-SHE-P220 - Team Base Line Risk Assessment \(TBLRA\)](#) [A1109090]

[SHEMS11-SHE-P230 - Job Safety & Environmental Analysis \(JSEA\)](#) [A1110668]

If it is deemed there is a risk of damage to native vegetation, or that native vegetation needs to be removed, then consultation with the Mine Planning and Environment Team must occur prior to the commencement of work.

[APPENDIX 1 - Exemptions](#) provides a list of possible exemptions and their definitions. If no exemption is available and a Permit is required, this will take some time to obtain, so plan your works ahead.

Exemptions

If claiming for an exemption, familiarise yourself with the rules of the exemption and have the exemption confirmed by the Mine Planning and Environment Team.

Removal of native vegetation should always be to the minimum extent necessary. You need to have clear justification for excessive clearing. For further details on exemptions consult the DEECA website ([Exemptions from requiring a permit \(environment.vic.gov.au\)](http://environment.vic.gov.au))

Exemption Type	Provision
Lopping and pruning for maintenance purposes	Must be less than 30% of native tree/plant and not include removal from the trunk
Maintenance of (native) grasses	Mowing/slashing to a minimum height of 100 mm
Naturally established/regrowth vegetation	Native vegetation that has naturally established after 1990 on land that was lawfully cleared of native vegetation or contained within a timber plantation
Dead vegetation	Other than large (old) standing dead trees. Size requirements exist - <i>seek additional advice</i>
(Incidental) removal of native vegetation to enable the removal of a weed or pest animal burrow	Weeds must be listed in the schedule to Clause 52.17. Amount of native vegetation which can be removed is capped at: 1) 1 ha of native vegetation which does not include a tree or, 2) 15 native trees if each tree has a trunk diameter of less than 20 cm at a height of 1.3 metres above ground level. If the extent of native vegetation removed exceeds specified levels DEECA authorisation is required.
Land-use conditions/land management notices	Mowing or slashing to a minimum height of 100 mm
(Planted) native vegetation	Native vegetation planted for commercial and landscape purposes. Does not apply where public funding (partial or complete Local, State or Federal Government funding) was provided which did not anticipate removal or harvesting of the vegetation. Does not apply to vegetation planted as an offset, a permit condition, or under an agreement.
Emergency works	Where an immediate risk of personal injury or damage to property is posed; only that part of the vegetation which presents the risk can be removed without approval - <i>Wherever possible, photographic evidence is suggested when making this claim</i>
Fire Protection	The specific defensible space exemptions are 10m around dwellings and 4m total width around fence lines
Surveying	The establishment of sight lines for the measurement of land if using hand-held tools, to the minimum extent necessary
Fencing	To enable the construction of boundary fences or the maintenance of any other type of (existing) Fence. The amount of native vegetation which can be removed without approval is a maximum of 4 metres (e.g. 3 metres on one side of the fence and 1 on the other). The construction of an internal fence within the Farming Zone or Rural Activity Zone is subject to the same limitations. The construction of an internal fence requiring native vegetation removal within any other zone requires a permit - <i>Seek additional advice</i>

Utility Installations	The native vegetation is to be removed, destroyed or lopped to maintain a minor utility installation - This includes maintaining power lines less than 220 kv
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Appendix 5 – Standard Operating Procedure – Management of HV & LV Overhead Distribution System

MANAGEMENT OF HV & LV OVERHEAD DISTRIBUTION SYSTEM

PURPOSE

This document is to provide a set of guidelines for the inspection, maintenance and operation of overhead reticulated power supplies and associated pole-mounted equipment under the control of the Yallourn Mine Alliance (YMA).

HV and LV reticulations under YMA control shall be inspected and maintained to reduce the likelihood of a pole top structure failure, damage to property, injury or death.

YMA is also concerned that if a pole top structure fails during the process of line construction / maintenance on the pole or in the immediate vicinity line workers may face serious injury.

This document provides procedures for the following items all of which make up the Maintenance and Management of LV and HV Power Overhead Distribution System:

- Pole Maintenance;
- Pole Top Structures;
- Overhead Line Switchgear Maintenance & Replacement;
- Insulators;
- Pole Type Distribution Transformer;
- Pole Inspections;
- Vegetation Control;
- Conductor Clearances;
- Earth Grids;
- Pole Register & Pole Numbering;
- Spreaders; and
- Operation of Pole-Mounted Equipment.

The Energy Australia Yallourn mine installation has overhead lines owned by AusNet and themselves. AusNet owned lines are controlled and maintained by AusNet. This also applies to the land easement along the overhead line path.

DEFINITIONS & ABBREVIATIONS

ITEM	DEFINITION
Authorised	Has the permission of the appropriate authority for the duty concerned.
Bonded	Means connected together in such a manner as to ensure that all connected parts are maintained at the same potential.
Caution Re-operation Tags	This tag system is for operational use only. The tags are red with white writing. Re-operation tags are not to be used to form any part of an access authority.
CB	Circuit Breaker.
Conductor	Means a wire, conductor or form of metal designed to carry electric current.
EWP	Elevated Work Platform.
HV	High Voltage Exceeding 1000V a.c. or 1500 V d.c.
Isolated	The state of equipment when disconnected from all sources of supply by breaks of a length appropriate to the voltage and the insulating medium.
Isolator	A device for reasons of safety, provides in the open position, breaks appropriate to the voltage and the insulating medium.
JSEA	Job Safety Environmental Analysis.
Live	A term applied to an object when a difference of potential exists between conductors or would exist between it and earth under normal conditions of operation.
LV	Low Voltage Exceeding 50 V a.c. or 120 V d.c. (ripple free) but not exceeding 1000 V a.c. or 1500 V d.c.
Must	Is to be understood as mandatory.
OLTC	On Line Tap Changer.
PPE	Personal Protective Equipment.
PTW (E)	Permit to Work (Electrical).
SCAP	Statement of Condition of Apparatus or Plant.
Should	Is to be understood as advisory, but not mandatory.

PROCEDURE

1. MAINTENANCE OF POWER DISTRIBUTION SYSTEM

1.1. POLE MAINTENANCE

Poles are on average about 12 metres long, but the most valuable part of each wood pole is the metre that resides just below and above-ground level. Careful treatment with internal and external (dependant of pole type) wood preservative of this metre of wood is carried out to extend the life of each pole and the assets attached to it.

1.1.1. COMPETENCY

All electrical work on overhead lines must be carried out by appropriately qualified personnel. Linesmen must have a ESV Line Workers License and ESI workers license, or Electricians must have an “A” grade license. All workers must be site approved.

All power line inspections must be conducted by site approved electrical personnel or contractors.

1.2. POLE TOP STRUCTURES

This covers the inspection, maintenance and replacement of pole top line hardware. It aims to prevent supply interruptions associated with pole fires or damaged and deteriorated pole top hardware and bird faults.

This strategy applies to the inspection, maintenance and replacement of pole top line hardware and includes, but is not limited to:

- Crossarms and associated hardware; and
- Insulators and associated hardware including bird

mitigation. This strategy does not apply to;

- Conductors;
- Surge Arrestors; and
- Pole Top Rot including pole caps.

Pole inspectors must check the condition of poles at the ground line and also note any obvious signs of deterioration of pole top hardware; they must monitor the condition of every asset attached to the pole. This includes cross arms, insulators, insulator ties, braces, pole caps and bolts.

1.2.1. MAINTENANCE STRATEGY

Defects identified during asset inspections or general observation must be entered into Maximo. Workorders generated in maximo will be prioritized based on the following table.

<p>Priority 1 (Urgent) Works to be scheduled and completed within 12 months.</p>	<p>A Work Order issued which will have an immediate impact or risk to either Health & Safety, Environment, Production or Plant. From a business perspective, a Priority 1 should be dealt with as soon as possible and should also include a telephone call to the relevant person / Team regarding the reason for the impact /risk.</p> <p>Maximo has an automatic feature (Escalation) around the initiation of Priority 1 Work Orders. Notification emails are delivered to the relevant Managers and Teams including details of a newly initiated Priority 1 Work Order.</p>
<p>Priority 2 (High Risk) Works to be scheduled and completed within 18 months.</p>	<p>A Work Order issued which has the potential for a high impact or risk to Health & Safety, Environment, Production or Plant. These should be dealt with promptly through the normal Work Order planning/scheduling process.</p>
<p>Priority 3 (Medium Risk) Works to be scheduled and completed within 36 months.</p>	<p>A Work Order issued which has the potential for a <u>medium impact or risk</u> to either Health & Safety, Environment, Production or Plant, dealt with through the normal Work Order planning/scheduling process.</p>
<p>Priority 4 (Low Risk) Works to be scheduled and completed within 48 months.</p>	<p>A Work Order issued which has the potential for a <u>low impact or risk</u> to Production or Plant, dealt with through the normal Work Order planning/scheduling process.</p>
<p>Priority 5 (No Risk) No set timeframe for these works to be scheduled and completed.</p>	<p>A Work Order issued which has <u>no impact or risk</u> to Production or Plant. This should only be used for <u>all general materials issues from store, including PPA & general contract administration</u>. No Risk Plant based activities are unlikely to have the budget for work to be done.</p>

1.3. POLE MANAGEMENT

1.3.1. MISSING POLE CAPS

The pole top being a right angle cut against the natural grain of the timber leaves the pole top exposed which may lead to severe pole top rot unless there are precautions taken to protect it from the elements such as fitting a simple pole cap.

1.3.2. POLE REPLACEMENT

Only simple pole structures with pole top structure maintenance requirements should be replaced. In addition, it is recommended that most HV & LV poles that have substantial high priority maintenance on them should also be replaced.

Reference should be made to - MELECP405E.Doc – Removing and Standing Power Poles. YMA Ventia Maintenance Document, access via Objective.

1.3.3. POLE TOP ROT

Poles shall be replaced where it is obvious that the pole top is badly decayed and where the extent of decay is easily seen to be infiltrating the pole at kingbolt level or extending into the crossarm.

1.3.4. CORRECTING LEANING POLES

Inspections must identify & record any poles regardless of type, leaning more than 10 degrees from the perpendicular and also poles that lean into a carriageway by 5 degrees or more.

Any pole found to be leaning in accordance with the definition above is to be scheduled for action to correct the lean.

1.3.5. LIKELY CAUSES OF LEANING POLES AND MAINTENANCE OPTIONS

Some suggested causes of poles leaning can be:

- Attachments added post-construction;
- Long service cables;
- Pole broken below groundline;
- Footing failure in low strength soil;
- Surface logs not installed where appropriate;
- Soil movement in reactive soils;
- Pole leaning away from prevailing wind;
- Pole incorrectly installed;
- Pole not buried to correct depth;
- Broken or loose staywire; and
- Line reconstruction

1.3.6. MAINTENANCE:

After a risk assessment has been completed and the pole has been found to require maintenance to fix a lean, suggestions for straightening a pole may be:

- Repair or install staywire;
- Install surface log; and
- Remove soil and re-tamp to full depth around pole.

Occasionally the leaning pole will have a low priority, but other maintenance may be required examples could be:

- Install additional links on a tight service cable and leave pole with a lean; and
- Resag conductors to maintain line clearance and leave pole with a lean.

1.4. OVERHEAD LINE SWITCHGEAR MAINTENANCE & REPLACEMENT

The aim is to achieve a high level of reliability from distribution overhead line switchgear by preventive & corrective maintenance coupled with planned economic replacement of end-of-life units before failure.

It covers switchgear installed on overhead lines and poles. It applies to air break & gas insulated load break switches.

1.4.1. INSPECTION

Inspection of overhead line switchgear must be carried out in conjunction with the pole inspections each 3 years, these inspections should include:

- Inspection of arc chutes;
- Ensure contacts are clean and correctly adjusted; and
- Check for loose or corroded connections.

1.4.2. MAINTENANCE

Minor maintenance can be carried out during the inspection process and should include:

- Lubrication of moving parts;
- Cleaning of contacts; and
- Replacement of corroded connections.

In addition, connections are required to be included in the regular overhead line thermography survey.

1.4.3. INSPECTION OF INSULATORS

Inspection of insulators must be carried out in conjunction with the pole inspections each 3 years, which must include visual inspection of condition of isolator.

1.4.4. REPLACEMENT OF INSULATORS

There are a wide variety of insulators used in the overhead reticulation system and as such the procedure for the changing of specific insulators is captured in the specific JSEA written for each separate insulator change.

Reference should also be made to YMA-OPS-PR-0108 Elevating Platforms and SHEMS11-SHE-P230 - Job Safety Environmental Analysis.

1.5. POLE TYPE TRANSFORMER

The objective is to specify the strategies of maintaining reliable pole type transformers. The aim is to rectify a defect before condition of transformers deteriorates to:

- Minimise the damage to valuable assets;
- Avoid interruption to supply;
- Remove a unit for repair through planned process in a convenient manner; and
- Mitigate hazard risk to personnel.

Pole type transformers are specially designed transformers for mounting on timber or concrete poles. Their primary purpose is to convert electrical power from 6.6 kV to safe serviceable voltages of a 3-phase system or 240/415 V system. Transformers have low failure rate, but high failure consequence for safety.

Typical causes of transformer faults are:

- Mechanical failure - usually due to through-fault on the LV system;
- Insulation failure - due to lightning, over-voltages due to switching, internal short circuit or water penetration; and
- Thermal failure – due to high resistance joint,

overloading. The consequence of a fault varies from:

- External flashover between bushings or to any earth structures;
- Oil explosion;
- Distortion of tank, winding, lead supports;
- Short circuit between turns; and
- Winding collapse.

1.5.1. INSPECTION OF POLE MOUNTED TRANSFORMERS

Inspection of transformers is to be carried out 3-yearly as part of the normal pole inspection program. Transformers are also checked as part of the ground-based “drive-by” inspections. Overall, all pole substations

are inspected every 3 years. Transformers and connections are also included in the regular overhead line thermal survey cycle.

Inspection activities include:

- Check for general cleanliness;
- Oil level;
- Signs of oil leaks;
- Corrosion of tank/cooler/conservator;
- Tank distortion;
- Broken porcelain;
- Tracking on bushings and surge arresters if fitted on transformers;
- Check bushing leads and bushing covers are in place and secured; and
- Droppers are free from vegetation interference, and clearances between live conductors are maintained.

1.5.2. PREVENTIVE MAINTENANCE

Pole top transformers are generally maintenance-free. Top up oil level and repair oil leaks or bushing and connection failures on site, if feasible.

Newer pole transformers are sealed units requiring no maintenance.

1.5.3. CORRECTIVE MAINTENANCE – FAULTS AND DEFECTS

Defective units are to be replaced with new sealed units of the same size and electrical configuration.

1.5.4. REPLACEMENT TRANSFORMERS

The purchase of replacement transformers are required to be sealed, galvanized tank, correctly sized allowing for surplus capacity.

Transformers greater than 100 KVA should be relocated to ground installation

1.6. POLE INSPECTIONS

All pole inspections must be carried out by persons holding the following.

UETTDROP11A – Inspection Overhead Poles

UETTDREL18A – Inspect and treat

Poles Cert II in ESI – Asset inspection

All inspections must be completed by independent companies.

Inspections must identify & record any poles regardless of type, leaning more than 10 degrees from the perpendicular and also poles that lean into a carriageway by 5 degrees or more. They must identify failures such as broken tails, cracked insulators, incorrect or damaged anchors, rusting clips/conductors, damaged or rotted cross arms or transformer supports etc.

Inspections must also identify & record any poles with deteriorating pole tops including but not limited to missing or damaged pole caps.

Concrete poles are limited to visual inspection and recording of observed above-ground defects.

Table of Inspection Cycles:

POLE TYPE	INSPECTION FREQUENCY
Wood	3 Years
Concrete	3 Years

1.6.1. INSPECTION OF OVERHEAD LINES, POLES AND CONDUCTORS

INSPECTION	INSPECTION CHARACTERISTICS	ACCEPTANCE CRITERIA
1	Pole / Tower	Check the type complies with design requirements and that the installation is correct.
2	Vibration Dampers	Fitted in accordance with design requirements.
3	Surge Diverters	Fitted in accordance with design requirements.
4	Surge Counters	Fitted in accordance with design requirements.
5	Arcing Horns	Fitted in accordance with design requirements.
6	Pole / Tower	Inspect to ensure that it is vertical and all cross arms are level. Stays have been installed correctly.
7	Insulators	No chips or damage.
8	HV Lines	All broken wire bolts have been removed.
9	Stay Wires	All are effectively bonded to the pole/tower earthing system and fitted with an approved sight guard.
10	Confirm there is no subsidence around tower foundations, pole bases or stay blocks.	Confirm there is no subsidence around tower foundations, pole bases or stay blocks.
11	Earthing	<p>Correctly installed:</p> <ul style="list-style-type: none"> a) For HV lines of 22 kv and above, basic structure earthing must be installed on every pole. b) For these lines, all pole types must have incorporated an internal earthing system. The internal earthing system must be electrically continuous throughout the length of the pole and connect the overhead earth wire to a galvanised steel earth rod. The earthing electrode must consist of a 6m length of 25NB heavy duty galvanised water pipe. All couplings, clamps etc, for the earth rod must be of a material having a high resistance to corrosion. c) For HV lines up to 22 kv, basic structure earthing must be installed on every third pole by running an earthwire down the pole from the overhead earthwire and connecting to a galvanised steel earth rod as specified above. Earth rods must also be installed at poles with mounted equipment

INSPECTION	INSPECTION CHARACTERISTICS	ACCEPTANCE CRITERIA
1	Pole / Tower	Check the type complies with design requirements and that the installation is correct.
2	Vibration Dampers	Fitted in accordance with design requirements.
3	Surge Diverters	Fitted in accordance with design requirements.
4	Surge Counters	Fitted in accordance with design requirements.
5	Arcing Horns	Fitted in accordance with design requirements.
6	Pole / Tower	Inspect to ensure that it is vertical and all cross arms are level. Stays have been installed correctly.
7	Insulators	No chips or damage.
8	HV Lines	All broken wire bolts have been removed.
9	Stay Wires	All are effectively bonded to the pole/tower earthing system and fitted with an approved sight guard.
		such as transformers, isolators and drop fuses and at cable termination poles.
12	Measure the resistance of the earthing system before connection to the overhead earth wire.	HV lines < 1.0 ohms.
13	Reflective Phase Identification Tags	Installed on the pole/tower and crossarms.
14	Warning Plates on Power Poles	Fitted to appropriate pole/tower: <ul style="list-style-type: none"> • Client Identification; • Danger; • High Voltage; • Operating Volts; • Support Identification Number; and • DPA (Pole/Tower Reference Number).
15	Conductor	Type complies with design requirements.
16	Conductor Sag	HV conductors up to 22KV, it is within + 3% and for conductors over 22KV it is within + 75mm of the sag figures supplied by the vendor.
		In selecting the span in which sagging is to be measured, ensure that the length of the span is as close as practical to the length of the equivalent span for each section of line.
17	Sags	Appear correct in every section of the line and that the sags are balanced between phases.
18	Mid Span Joints	Location correct and not more than one joint must be made in any one conductor or earthwire in any one span. Joints not made in spans crossing railway lines, telephone lines, power lines or formed roads.
		Accord with design requirements and AS2067. For HV lines, pole positions must be plotted so that the following ground/road pavement vertical clearance requirements are met for maximum conductor operating temperatures of 75°C for the phase conductor and 50°C for the earth conductor.

INSPECTION	INSPECTION CHARACTERISTICS	ACCEPTANCE CRITERIA			
1	Pole / Tower	Check the type complies with design requirements and that the installation is correct.			
2	Vibration Dampers	Fitted in accordance with design requirements.			
3	Surge Diverters	Fitted in accordance with design requirements.			
4	Surge Counters	Fitted in accordance with design requirements.			
5	Arcing Horns	Fitted in accordance with design requirements.			
6	Pole / Tower	Inspect to ensure that it is vertical and all cross arms are level. Stays have been installed correctly.			
7	Insulators	No chips or damage.			
8	HV Lines	All broken wire bolts have been removed.			
9	Stay Wires	All are effectively bonded to the pole/tower earthing system and fitted with an approved sight guard.			
19	Ground and Road Crossing Clearances	Item	Minimum Clearance to Lowest Conductor		
				Up to 33KV	Over 33KV
			Formed roads	8.5 m	8.5 m
			Ground other than roads	5.5 m	6.7 m
			Highest known flood level	4.6 m	5.5 m
		Power and telephone lines	N/A	2.4 m	
20	Construction Earths	All removed			
21	Phasing	Correct at send end of line, receive end of line and at any transposition points.			
22	Earthwire Size	Accords with design For HV lines the earthwire must be:-			
		Stranding and Wire Diameter	Up to 33kV	Over 33kV	
		Overall Diameter	7/2.75 SC/AC	7/2.75 SC/AC	
		Appropriate Mass	8.25 mm	8.25 mm	
		Calculated Breaking Load (CBL)	0.326 kg/m	0.277 kg/m	
		51.8 kN	50.1 kN		
23	Earthwire	Installed satisfactorily as per design requirements.			
24	Earthwire Sagging	Correct and location of any mid span joints or repair sleeves are satisfactory and as specified above for conductors.			
25	Access Track	Satisfactory and all gates operate correctly. Access tracks to pole/tower locations must be designed to be basically suitable for all weather use by four-wheel drive vehicles.			
26	At the completion of the tests leave				

INSPECTION	INSPECTION CHARACTERISTICS	ACCEPTANCE CRITERIA
1	Pole / Tower	Check the type complies with design requirements and that the installation is correct.
2	Vibration Dampers	Fitted in accordance with design requirements.
3	Surge Diverters	Fitted in accordance with design requirements.
4	Surge Counters	Fitted in accordance with design requirements.
5	Arcing Horns	Fitted in accordance with design requirements.
6	Pole / Tower	Inspect to ensure that it is vertical and all cross arms are level. Stays have been installed correctly.
7	Insulators	No chips or damage.
8	HV Lines	All broken wire bolts have been removed.
9	Stay Wires	All are effectively bonded to the pole/tower earthing system and fitted with an approved sight guard.
	the line isolated.	
27	Drawings	Marked up as-built status.
28.	Lot Complete	
28.1.	Final Inspection	All QA documents complete.

1.6.2. POLESAVER RODS

All wooden poles are treated with Preschem Polesaver rods in conjunction with each inspection cycle. Treatment commences at 5 years old, with a second treatment at 10 years and then continues at each inspection cycle (inspection commences at 15 years old). Polesaver rods are placed in existing treatment holes and provide a 3-5 year protection period against all forms of wood rot and deter termites from attacking the treated wood.

1.6.3. TERMITE INFESTATION IN POLES

Occasionally wood poles are found to be infested with termites when inspected. In such cases, the pole should be replaced with a concrete or hardwood pole as required.

1.7. VEGETATION CONTROL

1.7.1. GENERAL

Achieving regulatory power line clearances between powerlines and vegetation is accomplished through a program of annual inspection and defined actions from these audits. Where required, pruning to maintain minimum clearance space will be completed by an approved company in accordance with AS4373 – “Pruning of Amenity Trees. Any deviation from this standard is to be managed and documented by the Team Electrical Engineer (Mine).

1.7.2. ACCESS TO POWER LINES

All work on site must comply with the [Safety Rules Access to Apparatus - Mine](#). The Safety rules covers the site electrical access permit, vicinity authority and permit to work without a permit.

Under no circumstances are Personnel permitted to enter into the Safe approach distances of electrical power lines unless the lines are isolated, earthed and they are the recipients of a mine HV electrical access permit.

Workers and equipment intending to work in the vicinity of overhead power lines must notify the Team Electrical Engineer (Mine) and request/receive a vicinity access authority before beginning work.

Work must also comply with the site procedure [Work In the Vicinity of Powerlines](#).

No live electrical work is permitted on site.

1.7.3. TRAINING AND AUTHORISATION

1.7.4. TRAINING

Workers undertaking tree pruning in the power line corridor must have completed:

- Site induction for the mine,
- Mine Safety rules training, All personnel working in the proximity of overhead lines shall understand the Safe Approach Distances to HV electrical equipment. No live work is permitted on site.

Additionally, workers who are required to conduct works for vegetation clearance works within safe approach distances to overhead lines must have completed:

- Blue book training and current refresher
- First aid training,
- Completed TLILC0005 EWP operator Licence and site Verification of Competency,
- Medium Rigid truck licence and EVP truck verification of competency
- Site Electrical RIC authorisation
- ESV spotter authorisation
- Certificate II in ESI Powerline Vegetation Control where required

Line inspectors must have experience and training in tree identification or completed a nationally accredited

“Assess Trees” module.

Arborist qualifications:

- Cert IV Hort/Arb
- nationally accredited “Assess Trees” module

1.7.5. AUTHORISATION

The Team Electrical Engineer (Mine) will review the qualifications /training of proposed personnel to be engaged for the pruning/removal of trees in the power line corridor.

The Team Electrical Engineer (Mine) will review personnel to be engaged in tree/vegetation clearing activities that they comply with the site ESMS and safety rules, site procedures and be assessed competent for the removal of vegetation.

The Team Electrical Engineer (Mine) shall consider the qualifications, experience of contractors/personnel and method for cutting the trees before authorising them to remove tree/vegetation in the power line corridor.

Authorised personnel contractors must be trained for Site safety rules (permit procedure for the Mine) and Blue Book before any work is carried out.

All personnel training and authorisation records are registered on the training register managed by Ventia.

The Team Electrical Engineer (Mine) or his delegate will update the site training register approving such personnel for this work.

1.7.6. WORK PREPARATION

The workgroup must receive a work package from the electrical planner. Containing the workorder, job instruction, YMA Job Safety Analysis (JSA) form and any other applicable information such as site drawings.

The work group must be site authorised for required works. Verification of licences, training and site authorisation must be verified by work group before work commences.

A YMA Job Safety Analysis (JSA) must be completed before work commences. If the work involves the use of

EWP's then the JSA must be signed off by an authorise member of management before work commences.

If roads or other thoroughfare are to be impeded by the works, then safety alerts must be issued 24 hours prior to work commencing.

Appropriate “site permit to work authorities” must be obtained before work commences.

1.7.7. ANNUAL PROGRAM

This Yallourn Mine Alliance (YMA) policy aim is to achieve compliance with the Electricity Safety (*Electric Line Clearance*) Regulations 2015, thus achieving high levels of reliability and safety through preventive & corrective maintenance programs.

In general, vegetation-clearing works within the Yallourn Mine Alliance network will be performed on a yearly cycle dependent on the area and the dynamics of the preceding environmental conditions.

1.7.8. INSPECTION

The annual vegetation inspections shall be completed by skilled vegetation contract personnel. They shall complete the site audit based on the site pole diagram LV43/1-2/016.

The Audit report shall detail defects found.

Defects identified either by the audits of observations of site personnel will be recorded in Maximo and actioned by Team Electrical Engineer (Mine).

1.7.9. PREVENTIVE MAINTENANCE

The methods employed to maintain specified clearance of vegetation associated with overhead powerlines include:

- Engage external companies to audit the Yallourn Mine site power lines for compliance with this procedure.
- Engage suitable companies to manage tree growth within the line clearance zone as per table 1 below.
- Ensuring compliance to AS 4373 – “Pruning of Amenity Trees”
- Vegetation within the power line clearance corridor shall **not** be taller than 1 metre and shall be controlled by spraying, slashing or mulching.

The methods to be adopted to prevent excess pruning or clearing of trees is determined by the Energy Australia Environmental Engineer.

1.7.10. CORRECTIVE MAINTENANCE - FAULTS AND DEFECTS

Vegetation defects and faults are reported by:

- asset inspection contractors
- YMA employees and other contractors

If work is required on live overhead power lines, then an suitable authorised arborist shall be engaged to prune as required.

It must be noted that all overhead line owned by Energy Australia can be isolated for maintenance work – live line work is not permitted on site.

Defects are forwarded the Energy Australia Environmental Engineer and the Team Electrical Engineer (Mine). The appropriate action is organised by the responsible engineer.

Defects are recorded in the site maintenance management system (Maximo).

1.7.11. HAZARD SPACE

The area outside the power line clearance space from which vegetation could fail and contact powerlines (Hazard Space) is inspected during the routine inspection program and audits in an attempt to identify potential hazards.

While all vegetation in the vicinity of powerlines has the potential to contact conductors and therefore be considered hazardous, it is not practical or environmentally acceptable to remove all this potentially hazardous vegetation. Where obviously hazardous vegetation is identified, it will be actioned by the Energy Australia Environmental Engineer

1.7.12. AUDITING

The Team Electrical Engineer (Mine) is responsible for the regular auditing of related activities to ensure the compliance with the requirements of this plan. YMA maintains a documented audit schedule listing the range and currency of audits to be undertaken. These audits included but are not limited to:

- work parties health and safety including training
- adherence to the mine power line clearances requirements
- the identification delivery and follow-up of non-compliances
- detailed quality of report
- Currency of engaged personnel qualification

The Team Electrical Engineer (Mine) shall organise the review of the line clearance audit and defects found. This review shall be completed 4 weeks after the completion of the Line Clearance audit completion.

1.7.13. SITE WORKS AUDIT

The Yallourn mine conduct random site works audits. These audits review the task being performed, safety considerations for task including the JSA review, work pack review, work instruction review, consultation with workers, suitability of equipment in use and equipment last inspection / test date. If major defects are identified, then the task will cease until issues have been rectified.

1.7.14. PERFORMANCE MEASURES

The process of vegetation management is ever changing with new technologies, systems and work practices continually being developed. YMA in conjunction with its contractors is committed to remaining a leader in the industry and will continue to look for opportunities to improve performance.

1.7.15. NON-CONFORMANCE

Where a contractor does not have current training / qualification or substandard work the contractors site access will be suspended and the Team Electrical Engineer (Mine) will convene performance review with the contractor. Temporary extensions of access, by the Team Electrical Engineer (Mine); may be allowed if qualification have lapsed and updates are in transit.

1.7.16. CONTRACTOR FEEDBACK

Annual review of contractor's performance shall be conducted by team Electrical Engineer (Mine). Feedback shall be given to the contractor on the completion and review of the annual line clearance audits conducted by contractors, also after each major milestone in the works schedule has been completed and audited.

1.7.17. KEY PERFORMANCE INDICATORS

SERVICE LEVELS		MEASURE	MEETING TARGET	ASSESSMENT TIMEFRAME
1	Line Clearance audit	All trees identified in the Pre-Summer Inspection, report completed and defect workorders generated in Maximo	Completed in 4 weeks starting 1 September	October
2	Weed Control poles	Spray base area of each mine owned pole on site	Completed in 8 weeks Starting 1st February	Site inspection Mid April.
3	Weed Control poles	Spray base area of each mine owned pole on site	Completed in 8 weeks Starting 1st October	Site inspection Mid December.
4	Identified trees requiring pruning	Contractor works completed in 4 weeks from issue of notification	100 %	Re Inspection in 6 weeks

1.7.18. CLEARANCE SPACE

Clearance space is a space surrounding an electric line which must be clear of vegetation. It is also the space parallel to each conductor that must be clear. The clearance varies with the type of electric line installed and the risk of ignition of fire at that location.

Vegetation inspection must be completed, and vegetation reduction completed prior to the commencement of the fire season each year.

The clearance space provided in table 1, below, does not include the additional space required to allow for sag and sway of the conductor.

All low voltage overhead lines must comply with the clearance requirements set out in table 3.8 of the Australian/NZ wiring regulations AS/NZ 3000.

Clearance Spaces					
	1	2	3	4	5
Type of Powerline	Spans up to and including 30 meters Selection of spans near the pole	Spans exceeding 30 meters and up to and including 45 meters	Spans exceeding 45 meters and up to and including 70 meters	Spans exceeding 70 meters and up to and including 350 meters	Spans exceeding 350 meters
Nominal Voltage:	In all Directions (Vertically above the line)				
Bared and Covered Low Voltage	2m	2m	5m	5m	5m
6.6kV and 22kV	5m	5m	5m	5m	5m

Table 1 - Hazardous Bushfire Risk Areas

NOTE: The space vertically above the powerline must be kept clear of vegetation.

An additional distance must be added to the clearance space to allow for the sag and away of the conductors and for vegetation regrowth during the period between pruning times.

Victoria has one of the most hazardous bushfire areas in the world. In areas where the Hazardous Bushfire Risk rating is applied, the clearance space surrounding the powerline as defined in Table 1 must be applied.

If further clarification is required consult the Electric line Clearance Regulations 2015.

1.7.19. FUEL REDUCTION UNDER POWER LINES

Due to the high risk of fire generated from line failure, the easement under and the corridor 5 metres either side of the mine power lines must not have vegetation taller than 1 metre.

1.7.20. REGROWTH

Regrowth of trees outside the line corridor may be estimated by the auditor considering the age of the tree, type of tree, part of the tree and previous experience. If the regrowth is expected to enter the line clearance corridor the tree must be identified in the field and reported. Further investigation and actions will be determined by the Energy Australia Environmental Engineer.

Special Consideration

Where trees of significance are identified these trees shall be marked on site maps and a management plan generated to manage the power line clearances pertaining to that tree.

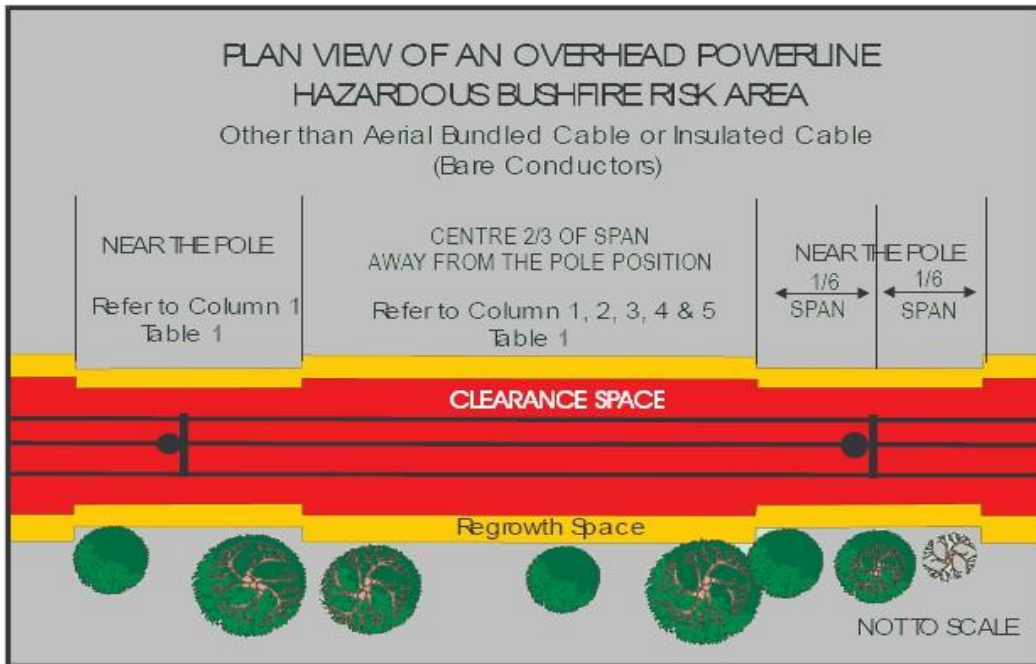


Table 2 - Hazardous Bushfire Risk Area - Bare Conductors, Plan View

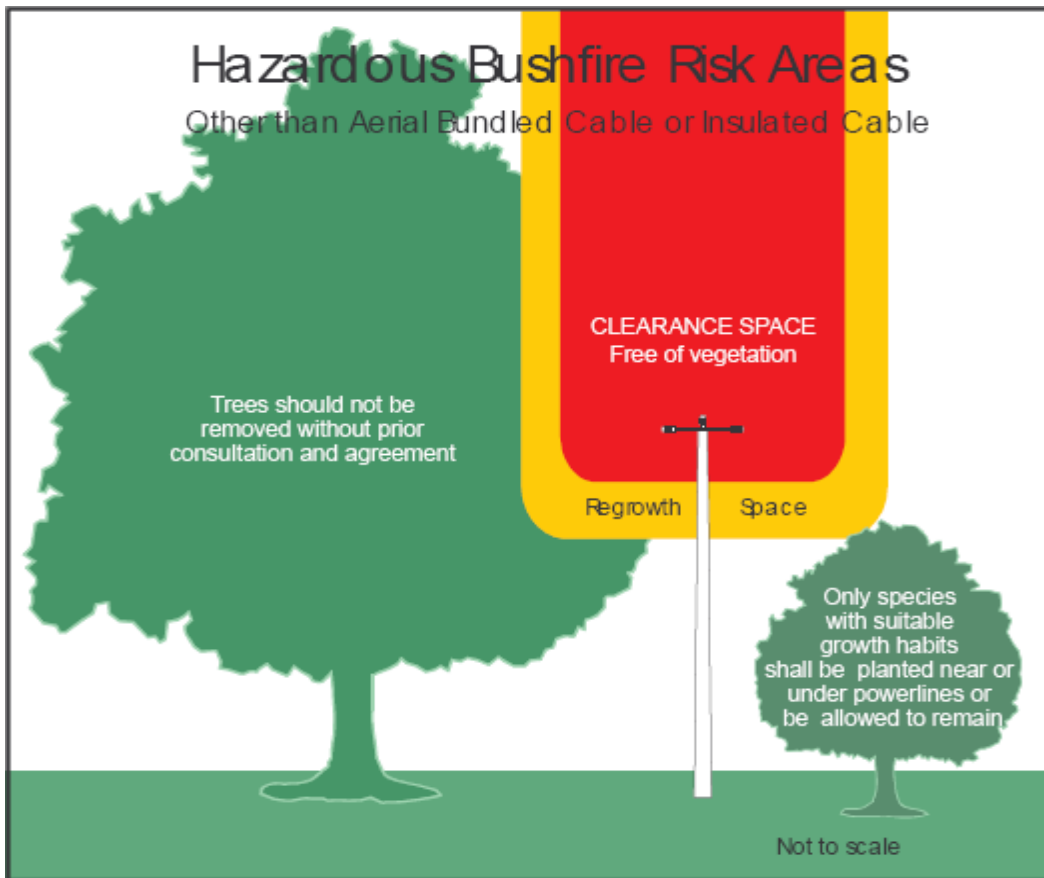


Table 3 - Hazardous Bushfire risk area – Bare Conductor, Clearance Space

1.7.21. PRIOR TO REMOVAL OF VEGETATION – CONTACT DETAILS

Prior to the removal of any trees that may be encroaching into the clearance space in the vicinity of electric lines, permission must be obtained from the Energy Australia Environmental Engineer.

The Energy Australia Vegetation Removal Approval application form must be completed prior to plant removal or pruning.

Approval Process

The following points shall be considered prior to permission to remove vegetation being granted:

- The active mine area is exempt from requiring a permit to clear;
- A permit is required to clear native vegetation;
- What types of tree are to be cleared/pruned;
- Is there any under store to be disturbed;
- How many plants to be removed;
- Are the trees marked;
- Is the plant less than 1 metre tall or trunk less than 100 mm in diameter – no permit required; and
- Has the Energy Australia Environmental Engineer inspected the site?

2. DESIGN

2.1. CONDUCTOR CLEARANCES

2.1.1. SEGREGATION OF POTENTIAL ON POLES

Where two circuits of different or similar voltage cross each other and are attached to the same support, conductors of a higher voltage must be placed above the lower voltage circuit and the vertical separation between the different circuits must not be less than specified in Table 4.

NOTES: *In the case of lines operating at less than 1000 volts, adequate measures should be taken to protect against unacceptable voltage rise between the lower voltage line and any structure energised due to the occurrence of a fault on the higher voltage line.*

		UPPER CIRCUIT					
		U≤33kV U>1000V Bare or Covered	U≤33kV U>1000V Insulated	U>1000V Bare or Covered	U>1000V Insulated	Other Cables (Conductive)	Other Cables (Non- conductive)
LOWER CIRCUIT	33kV≤ U>1000V Bare or Covered	0.9	0.9	-	-	-	0.2
	33kV≤ U>1000V Insulated	0.9	0.2	-	0.6	-	0.2

U>1000V Bare or Covered	1.2	0.6	0.3	0.3	-	0.2
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UPPER CIRCUIT						
	U≤33kV U>1000V Bare or Covered	U≤33kV U>1000V Insulated	U>1000V Bare or Covered	U>1000V Insulated	Other Cables (Conductive)	Other Cables (Non- conductive)
U>1000V Insulated	1.2	0.6	0.3	0.2	0.3	0.2
Other Cables (Conductive)	1.2	0.6	0.3	0.3	0.2	0.2
Other Cables (Non- Conductive)	0.2	0.2	0.2	0.2	0.2	0.2

Table 4 - VERTICAL SEPARATION FOR ATTACHED CROSSINGS (IN METERS)

2.1.2. INSULATED LV LINES

Insulated conductors of an overhead service line must be so located that the distance to level or sloping ground in any direction from any position to which any part of such conductor either sag at Maximum Design Temperature or above as a result of wind pressure, must not be less than the distance specified in Table 5.

SERVICE LINE LOCATION	DISTANCE TO GROUND IN ANY DIRECTION (M)
Over the centre of a road	5.5
Over any other part of a road	4.6
Over a footway or land which is likely to be used by vehicles	3.0
Elsewhere	2.7

Table 5 - CLEARANCE FROM GROUND, INSULATED SERVICE LINES

NOTES:

- a) For the purpose of this clause, the term “ground” includes any unroofed elevated area accessible to plant or vehicles.
- b) In the case of waterways and flood plains, the clearances should be determined having

regard to local conditions and requirements.

- c) Where the usage of land is such that vehicles of unusual height are likely to pass under an insulated overhead service line, the clearances given in this clause may need to be increased.
- d) The clearances specified in Table 5 are final conditions for conductors which have “settled in”. When conductors are first erected, an allowance should be made for “settling in” and “construction creep”.

Refer Appendix 2.2. Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines.

2.1.3. CONDUCTORS OF DIFFERENT CIRCUITS ON DIFFERENT SUPPORTS (UNATTACHED CROSSINGS)

Where aerial conductors or cables of:

- Different circuits cross each other and are not attached to the same pole or support at the point of crossing; or
- One circuit cross above a pole or support of another circuit, where that pole or support is located within the overall plan width in still air of the lines under consideration, and the higher circuit is not attached to that pole or support, then:
 - Where a circuit operates at a voltage below 1000 volts it must be placed below any other circuit operating at a higher voltage; and
 - The vertical separation between any conductor or cable of the higher circuit and any conductor or cable of the lower circuit must not be less than specified in Table 6.

NOTE: Aerial earth conductors may be considered to be parts of high voltage circuits and as such are not subject to restriction (i) above.

		Upper Circuit		
			U ≤ 33kV Bare or Covered	U > 1000V U < 1000V Bare Covered & Insulated
Lower Circuit	33kV ≥ U > 1000V Bare or Covered	No Wind	1.2	
		Wind	0.5	
	U < 1000V Bare, Covered & Insulated	No Wind	1.2	0.6
		Wind	0.5	0.4

Table 6 - VERTICAL SEPARATION FOR UNATTACHED CROSSINGS (IN METERS)

Notes on using Table 6.

Vertical separation between circuits is determined by establishing the conductor positions with reference to:

- Conductor temperatures of each circuit; and
- Wind conditions.

The following is included as a guide for selecting appropriate conductor temperatures and wind pressures:

2.1.4. SEPARATION IN STILL AIR

- The conductor temperature of the higher circuit must be the Maximum Design Temperature.
- The conductor temperature of the lower circuit must correspond to Sustained Load Condition. Refer to Clause 3.3.2.2 of Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines.

2.1.5. SEPARATION UNDER WIND

- For the process of calculating conductor separation of the higher circuit taking into account the conductor temperature and wind direction and velocity, refer to: Clause 3.4.1 of Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines.

NOTE: *This assumes that the conductor temperatures of both circuits are at the temperature at which wind pressure occurs e.g. conductors have cooled to the air temperature.*

2.2. SAG AND SWAY

Yallourn Mine overhead power lines operate at 22,000 and 6600 volts. Other Ausnet lines operate at 66,000 and 220,000 volts.

New power line installations must be designed by external qualified companies. These designs must consider pole clearance, pole loading, conductor type, size, sag and sway, line clearances, route and pole access

During the building of overhead bare lines the conductors are tensioned according to the manufacturers specifications. This will provide the conductors a pole to pole sag shape.

Design drawings of the new lines shall be registered on the Energy Australia, Mine drawing system.

Depending on ambient temperature variations the thermal growth / contraction of the conductors will occur.

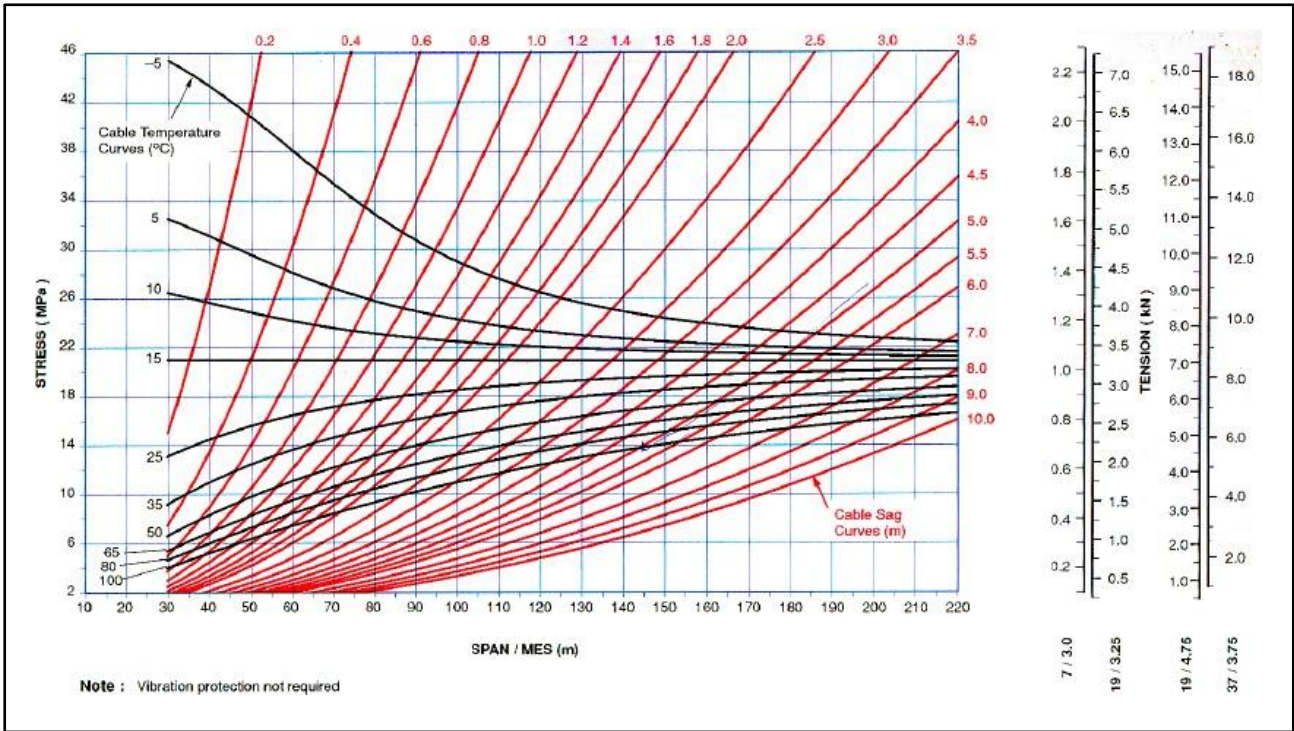
This will cause the sag of the conductors to vary accordingly. This will result in an increase in sag thus decreasing the clearance below.

The graph below is typical of the sag for 19/3.25 and 19/3.75 conductors commonly used on site. Where other conductor types are installed their respective specifications should be consulted.

Installed lines must be designed to meet the minimum sag specification of the Line Clearance regulation 2015.

In the Yallourn Mine power line Spans of greater than 100 metres must have clearances allowing for a sag of 3 metres.

Note :- At the Yallourn mine the longest span installed is 170 metres which has a sag of 4.29 metres at 30 deg C. This is installed where lines traverse the Morwell river. There is only grass vegetation in the area and the minimum clearance is not compromised.



Calculation of the sag for spans greater than 45 metres.

2.3 Uninsulated low voltage and high voltage electric lines (other than a 66 000 volt electrical line) in a hazardous bushfire risk area

- (1) This clause applies to an electric line that—
 - (a) is an uninsulated cable; and
 - (b) does not have a nominal voltage of 66,000 volts; and
 - (c) is located in a hazardous bushfire risk area.
 - (2) The minimum clearance space for a span of the electric line is—
 - (a) the space extending away from the line in all directions perpendicular to its axis for the applicable distance and an additional distance that allows for cable sag and sway; and
 - (b) the space above the space described in paragraph (a).
 - (3) The **applicable distance** for the first and last sixths of the span is 1,500 millimetres.
 - (4) The **applicable distance** for the middle two thirds of the span is—
 - (a) if the span distance is less than or equal to 45 metres—1,500 millimetres; or
 - (b) if the span distance is greater than 45 metres and less than or equal to 500 metres—the distance calculated in accordance with the following expression—
$$1500 + ((SD - 45) \times (500 \div 303))$$
- where—
- SD* is the span distance; or
- (c) if the span distance is greater than 500 metres—2,250 millimetres.

Notes

- 1 The applicable distance for the middle two thirds of the span is represented as a graph in Graph 5 of Schedule 2.
- 2 The minimum clearance space for a span of an electric line to which this clause applies is partially illustrated in Figures 1 and 5 of Schedule 2.

2.3. SURGE DIVERTERS

Energy Australia Yallourn site overhead distribution system uses two types of surge diverters, single-use and multiple-use units.

The single-use units are to be replaced on failure, as a sacrificial device and the multiple-use units are replaced when found to be in unacceptable condition

2.3.1. INSPECTION

When opportunities arise such as repair of pole top structures as well as during the normal asset inspection programme, all surge diverters should be inspected. The inspection should include:

- Signs of tracking, cracks on porcelain or polymeric housings;
- The earth lead device has not operated on the single-use units;
- Line and earth connections are secured; and
- Bird and animal covers have not perished.

2.4. SPREADERS

In locations where it is deemed that geographical or weather conditions could cause conductors to come in contact with each other line spreaders should be considered.

Spreaders must be:

- Of fibreglass or other approved non-conductive material;
- Ensure the spread of the conductors remains the same as at the crossarms; and
- Placed at a distance to prevent the conductors contacting each other.

2.5. EARTH GRIDS

2.5.1. EARTHING AND INSULATION OF STAY WIRES

Stay wires coming within 2.4 meters of the ground must be earthed unless they are insulated by means of an insulator placed in each stay wire.

Refer to: [Earthing Code](#).

NOTES:

- *Such insulators must be placed so that the lowest point of each insulator not less than 2.4 meters above the ground and the end of the insulator closest to the pole is below the level of the lowest conductor on the pole.*
- *The wet flashover voltage of the insulator, when tested in accordance with the relevant Australian Standard, must be 50% greater than the working voltage to earth of the line.*

2.5.2. EARTH GRID TESTING OF POLES

Shall be as per [Earthing Code](#)

2.6. POLE LOCATION NUMBERING SYSTEM

The primary function of the Pole Location Numbering system is to identify the location of the pole. On replacement of any existing pole, the identification plate must be transferred to the replacement pole.

The pole numbering plate will also include additional information as shown in 2.6.1 (below).

2.6.1. POLE NUMBERING DETAIL

The identifying tags for each of the above will contain the following information:

Substation	Feeder No.	Section	Pole Location No.
eg.YCB *(High Voltage)	eg. 655*	eg.A*	eg. 025*
LVO (Low Voltage)	eg. 655*	eg.A*	eg. 025*
SUN (Sundries)	000	0	eg. 025*

* Indicates variable details.

The first three letters on the pole numbering tag will consist of:

- The substation Feeder abbreviation, eg YCB for **High Voltage Poles**;
- “LVO” for Low Voltage Poles; and
- “SUN” for **Sundries** (communications etc.) **Poles**.

The first digit of the Feeder number on **HV Poles** will designate the HV voltage. Eg. 6 = 6.6kV, 2 = 22kV. Followed by the Feeder number. The first digit of the Feeder number on **LV Poles** will designate the originating feeder voltage. Eg. 6 = 6.6kV, 2 = 22kV. Followed by the Feeder number. All sundries poles will carry the Feeder number “000”.

If a pole carries conductors of different potential, the first digit of the feeder number will be determined by the highest potential.

Section numbering for HV and LV poles will commence with “O”, followed by “A” for the next section, the next “B” etc. Sundries poles will all have 0 (zero) as a section Number.

The last three digits make reference to the individual pole location.

Each pole numbering tag will be a Brady Label – 40mm wide attached to a metal / UV stabilised plastic strap and attached to wooden poles with clouts and concrete poles with Silastic.

An example of an individual plate attached to a pole would contain the following information:

- Substation, Low Voltage or Sundries Abbreviation;
- Conductor Voltage 6 = 6.6kV, 2 = 22kV;
- CB Feeder Number;
- Section; and
- Pole Location Number.

Eg. YCB - 615 - A - 099

YCB	Substation
6	6.6kV
15	CB Feeder Number
A	Section Number
099	Pole Location Number

2.6.2. LOCATION OF POLE LOCATION REGISTER

A database listing all poles on the Energy Australia Yallourn site has been prepared. Access to this document is to be found at:

- I:\11.00 Plant and Equipment\11.01 Yallourn Mine Power Distribution System.

Prior to any modification to this document, consultation with the YMA Electrical Engineering Group must occur.

CONTRACTOR MANAGEMENT

This procedure has been written to document and formalise the process for managing Contractors' safety at the Yallourn Mine (YMA).

This procedure is not intended to overrule legislative or client (EnergyAustralia) requirements.

PROCEDURE

1. SELECTION OF CONTRACTORS

Contractors should be pre-selected to undertake work where possible. The selection criteria shall be based on the Contractor's ability to perform the work they are being engaged to perform in accordance with any applicable legal or statutory requirements and in compliance with site requirements.

Where appropriate, preference will be shown to Preferred Contractors as listed in the EnergyAustralia Contractor Management Procedure. This information can be obtained from the EnergyAustralia Mine Contract Manager.

2. CONTRACTOR MANAGEMENT PROCESS

All Contractors who are engaged to perform work at the Yallourn Mine are required to obtain approval from the YMA Mine Manager to carry out work in accordance with site specific procedures and processes. The person engaging the Contractor is responsible for ensuring that the Contractor is familiar with the site-specific procedures and processes before commencing any work.

EnergyAustralia approved Contractors are suitable for engagement to work at YMA. The approval shall be verified by the person engaging the Contractor prior to works commencing.

2.1. SITE INDUCTION & TRAINING REQUIREMENTS

The person who engages the Contractor to perform work is responsible for the following:

- Ensuring that the Contractor's employees are inducted in line with site entry requirements.
- Providing the Contractor and their employees with an orientation of the specific work area in which the Contractor will be working. Where required, an orientation of the rest of the site is also to be given.
- Familiarising the Contractor and their employees performing the work in relevant site-specific procedures and processes and ensuring that all applicable training requirements have been met before work commences.

2.2. MANAGEMENT OF CONTRACT WORK

All Contractors, regardless of their scope of works will be required to undertake hazard identification prior to undertaking work (i.e. a S.L.A.M, Job Safety and Environmental Analysis (JSEA) or Risk Assessment) and implement applicable RTL / YMA Work Instructions and Procedures.

The level of supervision provided to the Contractor whilst they are on site will be determined by the person who engages the Contractor and will be based on the level of risk associated with the work being performed.

2.3. INCIDENT NOTIFICATION & INVESTIGATION

The person who engages the Contractor must ensure that they are aware of the requirements to:

- Immediately notify YMA of any incident; and
- Ensure that the incident site is preserved until the appropriate Manager, or their nominated delegate has inspected the site and given authorisation to proceed with returning the area to normal.

The YMA Safety Team shall be notified of any incidents that occur to ensure that the correct investigation procedure is followed.

2.4. SITE INSPECTIONS AND NON-CONFORMANCES

Works undertaken on site by Contractors are subject to regular inspection.

Inspections are undertaken to ensure that feedback can be both obtained and provided on:

- The Contractor's work; and
- Conformance to safe work systems and any other site requirements as applicable.

Any non-conformances identified during the site inspections shall be rectified by the Contractor in consultation with the person who engaged the Contractor.

3. SITE SPECIFIC REQUIREMENTS

3.1. SAFETY RULES AND SITE PERMIT TO WORK REQUIREMENTS

Safety Rules – Access to Apparatus applies to all work conducted on apparatus not covered by the Isolation & Tagging for Mobile Plant and Light Vehicles procedure.

3.2. TAGGING AND ISOLATION FOR MOBILE PLANT AND LIGHT VEHICLES

The Isolation & Tagging for Mobile Plant and Light Vehicles procedure applies to all work conducted on mobile plant and light vehicles.

3.3. ASBESTOS

Work involving Asbestos Containing Materials shall be undertaken by persons with the applicable qualifications and training and works undertaken in line with the Victorian Occupational Health and Safety Regulations 2017.

3.4. CONFINED SPACE ENTRY

Confined spaces are determined by the hazards associated with a set of specific circumstances including restricted means of access and egress, the space contains or may contain a hazardous atmosphere or risk of engulfment.

Confined spaces are high risk environments and require specific risk control measures, including completion of a risk assessment and issue of a Confined Space Entry Permit.

Only trained and competent personnel shall be involved in confined space entry work.

Refer to the Confined Space Entry Procedure.

3.5. CHEMICALS

Safety Data Sheets (SDS) shall be current (within 5 years from manufacturer creation date) and be available at the Contractors job site. Chemical containers shall be appropriately labelled and stored in accordance with Hazardous Substances and Dangerous Goods Regulations Codes of Practice.

All chemicals that are brought onto site must be subject to the specific site approval processes.

3.6. USE OF CRANES AND PORTABLE LIFTING EQUIPMENT

All cranes must be currently registered (green sticker) and subject to a daily pre-start inspection prior to use on site.

Personnel involved in lifting operations must hold the relevant High Risk Work Licence and required competencies.

All portable lifting equipment must have evidence of current in-service inspection and testing in accordance with relevant Australian Standards and any specific site requirements.

3.7. HAZARDOUS MANUAL HANDLING

Contractors are to ensure that hazardous manual handling is minimised and appropriate measures are implemented to control the risks associated with hazardous manual handling.

3.8. LIGHT VEHICLES

All Contractor light vehicles required to enter operational areas of the site must be inspected and approved in accordance with site requirements prior to them being driven in operational areas.

Contractors shall use RTL pre-start inspection checklists for light vehicles as determined by site requirements.

Any light vehicle found to be in an unsafe or non-compliant condition will be removed from site and replaced at the Contractor's expense.

3.9. PLANT AND EQUIPMENT

All Contractor's plant and equipment shall be fit for the purpose for which it is intended. All operators must have appropriate licences and/or competencies.

Risk Assessments must have been completed for all plant and shall be current and made available on request.

An inspection of all mobile plant must be completed before the equipment is used on site. All items of plant must be inspected by the Contractor on a daily basis before first use (i.e. pre-start checklist), maintained in a good condition and fit for purpose.

The contractor shall provide appropriate documentation upon request regarding the servicing and maintenance carried out on the plant and equipment.

Contractors shall use RTL pre-start inspection checklists for mobile plant.

Any plant found to be in an unsafe or non-compliant condition will be removed from site and replaced at the Contractor's expense.

Boom-type Elevated Work Platforms (EWP's) shall have a Secondary Guarding Device fitted, such as a Protective Structure or Sensing Device fitted to prevent the risk of crush to the operator.

EWP's must be put through the Verification of Functionality (VOF) test before being used on-site.

A JSEA is required for any works where an EWP or Scissor Lift are to be used. The JSEA must include controls relating to the use of the EWP or Scissor Lift and requires sign off by a manager or supervisor who is not a direct member of the work party.

The person who engaged the Contractor is responsible for ensuring that the requirements detailed in the following Procedures are met as applicable to the task:

- EWP Verification of Functionality & Operator Verification of Competency;
- Work in the Vicinity of Powerlines;
- Mobile Plant Operating in Foggy Conditions;
- Mobile Plant Towing and Winching;
- Working Around Mobile Plant;
- Provide On Ground Directions;
- Tagging and Isolation Procedure for Mobile Plant; and
- Use of Barricading.

3.10. PERSONAL PROTECTIVE EQUIPMENT

Contractors are responsible for providing their own personal protective equipment (PPE) as appropriate to the work prior to coming on site. PPE must be fit for purpose and maintained in a good condition in accordance with the relevant Australian Standards.

PPE found not in a safe condition will be removed from the work site and replaced at the Contractor's expense.

The minimum PPE required when undertaking work on the Yallourn Mine site is:

- Head Protection (i.e. safety helmet or bump cap dependant on work location);
- Eye Protection (i.e. safety glasses and face shield where specified);
- Long sleeve upper body cover and full length trousers;
- Hi Visibility clothing or vest (with reflective day/night tape); and
- Safety footwear (high leg, lace up boots) (note: no elastic sided boots).

Other PPE required will be determined by the work being undertaken and should be identified through the hazard identification process (i.e. JSEA or Risk Assessment).

3.11. TRAFFIC MANAGEMENT

Any person required to drive a vehicle at the Yallourn Mine site shall be trained in the requirements of the Mine Traffic Management procedure and the theoretical and practical components of the procedure.

3.12. TRENCHING, EXCAVATION & GROUND/WALL PENETRATIONS

Before commencing any excavations, or ground or wall penetrations, underground or concealed services are to be located and an Excavation & Ground / Wall Penetration Permit issued in accordance with the Excavation & Ground / Wall Penetration Permit Procedure.

All trenching or excavation works that require personnel to enter a trench or excavation deeper than 1.5m must be carried out in accordance with the Trenching and Excavation Procedure.

3.13. ULTRAVIOLET (UV) RADIATION

Where UV Radiation is identified as a workplace hazard, control measures must be implemented to minimise worker exposure. For example, some measures include, but are not limited to:

- Informing employees and Contractors of the dangers associated with UV exposure;
- Providing sun protective clothing;
- Providing and encouraging the use of SPF 50+ sunscreen;
- Limit UV exposure through the rotation of work groups;
- Maximise the use of shade and other shelters; and
- Monitoring the measures adopted.

3.14. WORK AT HEIGHT

Refer to Working at Height – Prevention of Falls procedure for requirements regarding Work at Height.

3.15. ELECTRICAL EQUIPMENT & POWER TOOLS

All Contractor's electrical equipment shall be tested and tagged in accordance with Australian Standard AS3760 'In Service Inspection of Electrical Equipment'. Residual current devices (earth leakage protectors) are to be used where required. Electrical leads are to be elevated above ground level where wet ground or other hazards exist.

3.16. ELECTRICAL WORK

Working near overhead power lines carries with it the danger of electrocution in the event of contact with the live conductors, or by coming close enough to cause an arc to occur.

Strict adherence to the requirements documented in the Work in the Vicinity of Powerlines procedure is required.

3.17. OTHER WORK REQUIREMENTS

The person engaging the Contractor shall also consider the following requirements:

- Fitness for work
- Site Traffic Rules
- High voltage switching
- Hazard reporting
- Driving or operating vehicles or plant
- Light vehicle authorisations
- Oxy equipment and flash back arrestor's requirements;
- Welding and cutting
- Barricading
- Hot works
- Nine inch angle grinders
- Radios and communication
- Emergency calls
- Wheel and tyre handling management