



**EnergyAustralia**

*LIGHT THE WAY*

## **EnergyAustralia Yallourn**

# **Electrical Safety (Electrical Line Clearance) Plan 2019/2020**

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**Page:** 1 of 14

## 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;
<b>7.1</b>	<b>Dec 2019</b>	<b>Brad Miller</b>	<b>Revision to address feedback comments from ESV</b>

## AMENDMENTS IN THIS VERSION

No.	Amendment Summary	Amended By
<b>Version 7.1</b>		
1.	Update various sections to address feedback comments from ESV	Brad Miller
2.	Created Appendix 2 – Cross reference to the Electricity Safety (Electric Line Clearance) Regulation 2015	Brad Miller
3.	Update responsible person to Lance Wallace	Brad Miller

## PURPOSE & SCOPE

<b>WHAT</b>	<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) Regulation.</p> <p>The procedures define the practises for the management of cutting trees in the vicinity of electric lines, minimises the danger of electric lines causing fire or electrocution and the maintenance of electric lines.</p> <p>The Electric Line Clearance Plan is interlinked with the Bushfire Mitigation Plan and must be monitored and audited each year to identify any deficiencies in the plan and updated before 31 March each year. It must be available upon request from Energy Safe Victoria.</p>
<b>WHEN</b>	This procedure is to be utilised when vegetation needs to be cleared from the sites overhead lines
<b>WHO</b>	This procedure shall be followed by all responsible personnel who implement the Electric Line Clearance Plan and the nominated responsible officer who audits the plan.
<b>WHY</b>	This procedure has been developed to comply with the Electricity Safety (Electric Line Clearance) Regulation.



# 1 CONTACTS

<b>Specified Operator</b>	EnergyAustralia Yallourn Pty. Ltd
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<b>Postal Address</b>	PO Box 444, Moe, Victoria, 3825
<b>Telephone</b>	(03) 5128 2000

<b>Person Responsible for Plan Preparation</b>	Lance Wallace
<b>Position</b>	Manager Mining EnergyAustralia Yallourn
<b>Office Address</b>	Eastern Road Yallourn Victoria, 3825
<b>Postal Address</b>	PO Box 444, Moe, Victoria, 3825
<b>Telephone</b>	03 5128 4044

<b>Person Responsible for Plan Implementation</b>	Bernie Hyde	David Wykes
<b>Position</b>	Mine Manager RTL, Yallourn	Electrical Engineer
<b>Office Address</b>	Eastern Road Yallourn Victoria, 3825	
<b>Postal Address</b>	PO Box 444 Moe Victoria, 3825	
<b>Telephone</b>	03 5136 1050	03 5128 2357

<b>Emergency Tree Clearance for Immediate Action</b>	<b>For after hours - Ventia Maintenance Contact Officer</b> (Phone No. updated weekly refer to the Mine Shift Supervisor 0418 583 008)
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## 2 INTRODUCTION

EnergyAustralia Yallourn Pty Ltd is the private owner and operator of the Yallourn W Power Station and the adjacent Yallourn Mine which are located in the Latrobe Valley approximately 150 km's east of Melbourne. EnergyAustralia Yallourn's operations are located within the City of Latrobe; the Power Station, Mine and buffer zones cover some 5,500 hectares.

The Yallourn Mine is one of three large open cut brown coal mines in the Latrobe Valley in Victoria. Mining operations are based on the open cut mining method, using the slope mining method with dozers and feeder breakers to excavate and load sized coal onto conveyors. Overburden operations consist of both auxiliary earthmoving plant and a bucket wheel dredger to excavate the overburden overlying the coal. A series of conveyors are used to transport the overburden material to an internal dump located within a worked out section of the Mine. Coal is transported by a series of conveyors to a 30,000 tonne raw coal bunker, which provides approximately 12 hours coal reserves for the Power Station. The Power Station and the Mine operate 24 hours per day, 365 days per year. Yallourn seam coal has high moisture content (65-68%); low ash (1.5-3.0%) and low energy content (6-7 Mega joule/kg (NWSE)).

Mining operations are currently located within Maryvale Field. Coal mining was fully operational in Maryvale Mine from the start of 2015. Worked out sections of the Mine are progressively rehabilitated in accordance with an approved Rehabilitation Master Plan, following mining and overburden dumping. This results in progressive shaping and stabilisation of overburden batters and dumps, coal floor coverage and some coal batter coverage. Routine maintenance programs manage the fuel loads in and around the mine areas.

On 5th September 2002, EnergyAustralia Yallourn established a Mine Alliance contract with Roche Thies Linfox Joint Venture (RTL), for the management and operation of the Mine. The Mine Alliance contract includes operations and maintenance activities in the Mine. The RTL Joint Venture, now RTL Mining and Earthworks P/L, has developed and implemented a certified SHEQ system for the management of safety, health, environment and quality parameters for all those activities included within the scope of the Mine Alliance contract. The Electric Line Clearance Plan forms part of EnergyAustralia Yallourn's certified SHE Management System.

The high inherent risks that vegetation poses to electrical assets, has ensured that controls are in place to mitigate the risk of fire ignition from electrical lines. The electrical line clearance management plan develops and implements strategies and actions to reduce the risk of fire ignition from electrical lines.

### 3 POLICY

EnergyAustralia Yallourn, as a specified operator, is committed to managing the site to mitigate against the spread of fire that initiates internally as well as the infiltration of external fires. This includes a commitment to protect at-risk electrical lines in compliance with the Electricity Safety Act and associated Electrical Line Clearance Regulation. This will be achieved by the application of:

- Periodic inspection
- Monitoring of plant and surrounding environment
- Removing vegetation in the vicinity of electric lines
- Reporting of fires
- Quick response to the extinguishing of fires

### 4 OBJECTIVES OF THE PLAN

The Energy Australia Yallourn Electrical Safety (Electrical Line Clearance) Plan provides a set of instructions that is integrated with the Bushfire Mitigation Plan, site procedures for the Mine, Power Station and Estate Services to manage the safe removal of vegetation in the vicinity of electric lines and minimize the danger of electric lines causing fire or electrocution. The plan ensures security of supply and maintains a safe working environment for employees.

The objectives of the Plan are:

- To fully comply with the Electricity Safety (electric line clearance) regulations
- To maintain a program of asset inspections consistent with the assessed level of risk
- To manage vegetation fuel loads and electrical line clearances in a timely manner, for minimum fire risk, consistent with relevant standards and regulation
- Assess the performance of programs supporting this Plan and strive for continual improvement

All overhead lines are located on private property and not subject to public or community access.

Whilst the effective application of this Plan does lead to reduced fire risk, the risk is still finite. Consequently, a fire response process is managed under the strategic framework of the site Emergency Response Plan, document SHEMS12-SHE-L01, which states “All fires that have potential to spread beyond the initial point of ignition and all other incidents which may result in a threat to life, or EnergyAustralia Yallourn assets, or the environment are to be considered an emergency and must be immediately reported to applicable statutory combat agencies”.

#### 4.1 Site Map

The site plan shown in the appendix photo 1 shows the overall area of the Yallourn site. The Mine is a dynamic operation and the overhead lines are re routed to meet the mining requirements. Single line drawings and layout drawings are continually updated to record the overhead lines on site. The overhead lines shown in appendix photo 2 are the general position of the overhead lines on the site. The up to date overhead layout drawings are available to Energy Safe Victoria upon request.

As native vegetation regrowth can occur anywhere on site, all areas where overhead lines are situated can be considered as areas where native tree removal can occur. All electric line clearance work completed under this procedure is on Energy Australia Yallourn land, therefore notification and consultation is not required.

## 4.2 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. These lines are managed by Ausnet and are not included in the EnergyAustralia Yallourn Electricity Safety (Electrical Line Clearance) Plan.

Ausnet Services will coordinate the cutting of trees with Estate Services for any overhead lines.

## 5 PREVENTATIVE STRATEGIES

### 5.1 Management of Overhead Lines

The management of the site's high and low voltage overhead reticulation system is described in the Mine document "Management of LV & HV Overhead Distribution System", YMA-OPS-PR-0374. This document covers the design, maintenance, inspection and operation of HV and LV overhead lines on the site. The document also includes a section on vegetation control, inspections and clearance distances and vegetation management methods for the site to maintain an adequate clearance for overhead lines.

Below is an extract from the Management of LV & HV Overhead Distribution System procedure, describing the process for removal of vegetation and required clearance spaces.

#### 1.3 VEGETATION CONTROL

##### 1.3.1 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 conducted, completed and vegetation reduction be 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.*

*In many instances, particularly where long spans are involved, the sag and sway of the conductors may be greater than the minimum clearance required in the table.*

*All 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.

Yallourn does not intend to seek an exception to the minimum clearance space around LV electric lines as provided for by items (4), (5) & (6) of Part 2 – Clearance responsibilities of the regulations.

## 5.2 Vegetation Management

On the EnergyAustralia Yallourn Site, native vegetation is protected under various state and commonwealth legislation. Dedicated conservation areas have been created to allow native vegetation to prosper. Trees that have significance for a cultural, environmental, historical and ecological purpose have been identified and managed in accordance with the site's Conservation Management Plan and the Environmental Management Plan.

Standard Operating Procedure (SHEMS10-SHE-P001) "Removal of Vegetation on the EnergyAustralia Yallourn Site" considers where an exemption applies and native vegetation can be removed. In such times, consultation with the Mine Environmental Engineer, or delegate, is required. The Vegetation Removal Approval Form (SHEMS10-SHE-P001-F01) encompasses the need for tree identification for vegetation removal. Native tree identification is a specialist task. Competent contractors identify native vegetation and in consultation with the Site Environmental Engineer determine the requirement and actions to meet the Plans.

All trees of cultural or environmental significance are identified and included in the GIS process (Geographic Information System). This process is managed by the Mine Environmental Engineer

## 5.3 Management of Vegetation near Power Lines

The Team Electrical Engineer (Mine) will be responsible for the management of vegetation near the power lines on the Yallourn site. The performance measures to assess against the code compliance in the Regulation will be;

- Preparation of the Electric Line Clearance Management Plan by 31<sup>st</sup> March each year
- Implementation of the Electric line Clearance Management Plan
- Full implementation of the inspection routine
- Number of defects raised for clearance of vegetation near power lines



All personnel clearing vegetation near overhead lines will be engaged or under the control of representatives from EnergyAustralia. Authorised personnel engaged in tree/vegetation clearing activities must comply with the Electricity Safety (Installations) Regulations, the Blue Book, site procedures and be assessed competent for the removal of vegetation. They must have a safe work method statement and job safety assessment completed prior to commencing work on clearing vegetation on or near live overhead power lines. Cutting of trees must be done, as far as practical, in accordance with AS 4373 and the Code of Practice for Electric Line Clearance.

The Team Electrical Engineer (Mine) shall take into account the qualifications, experience of contractors/personnel and method for cutting the trees before authorising them to remove tree/vegetation near overhead lines. Authorised personnel contractors must be trained for safety rules (permit procedure for the Mine) and Blue Book before any work is carried out.

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 have an electrical authorised spotter.

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.

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

#### **5.4 Wildfire Risk Mitigation**

Estate Services, is responsible for the preparation and application of the EnergyAustralia Yallourn Wildfire Risk Mitigation Plan. This plan includes fire hazard removal as well as the preparation of strategic fire breaks to ensure that the Power Station, Mine and other critical assets (eg. protected native vegetation areas) are protected against wildfire that occur on or external to the EnergyAustralia Yallourn property site.

The Estate Services Team manages the Wildfire Risk Committee to coordinate the fuel reduction works across the site whilst the bushfire risk conditions exist. The Wildfire Risk Committee meet monthly, all year round, and review the condition of site, monitor the implementation of the Bushfire Mitigation Plan and implements actions to ensure that the EnergyAustralia Yallourn site is adequately protected against wildfire attack. The Wildfire Risk Committee will have relevant representatives that contribute to the implementation of the Mitigation Plan. i.e. reps from the CFA, Latrobe City Council, grazing company, V/Line and Ausnet Services.

At the end of the fire danger period, the Wildfire Risk Committee will ensure that the Electric Line Clearance Plan has been reviewed to determine its effectiveness for the next fire danger period.

#### **5.5 Audit and Review**

The Electrical Safety (Electrical Line Clearance) Plan will be reviewed annually in March by an internal auditor 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 against the regulation.

The review will be initiated by a preventative maintenance routine in Maximo, MELECP423E.

## 6 REFERENCES

Document ID	Document Title
<a href="#">A1034223</a>	SHEMS11-ESV-P001 - Wildfire Risk Mitigation
<a href="#">A1039749</a>	SHEMS11-SHE-P015 - Management of the EnergyAustralia Yallourn Bushfire Mitigation Plan
<a href="#">A1065137</a>	SHEMS13-SHE-L04 - Mine Fire Control Management Plan (FCMP)
<a href="#">A1037878</a>	SHEMS10-SHE-P001 - Removal of Vegetation on the EnergyAustralia Yallourn Site
<a href="#">A1017664</a>	SHEMS12-SHE-L01 - Emergency Response Plan
<a href="#">A1034637</a>	YMA-OPS-PR-0374 - Management of LV & HV Overhead Distribution System
<a href="#">A1034736</a>	SHEMS10-SHE-P001-F01 - Vegetation Removal Approval Form
<a href="#">A1072179</a>	Conservation Management Plan (CMP) - Summary 2011 - May 2013
<a href="#">A1055081</a>	Conservation Management Plan (CMP) Progress Report - Attachment 1 - Appendices - May 2013
<a href="#">A1052587</a>	Conservation Management Plan (CMP) Progress Report - Attachment 2 - Maps - May 2013
<a href="#">A1030077</a>	YMA-H&S-MP-003 - Environmental Management Plan
N/A	Electricity Safety Act 1998
N/A	Electricity Safety (Electric Line Clearance) Regulations 2015

## 7 APPENDIX 1 – Site Plans

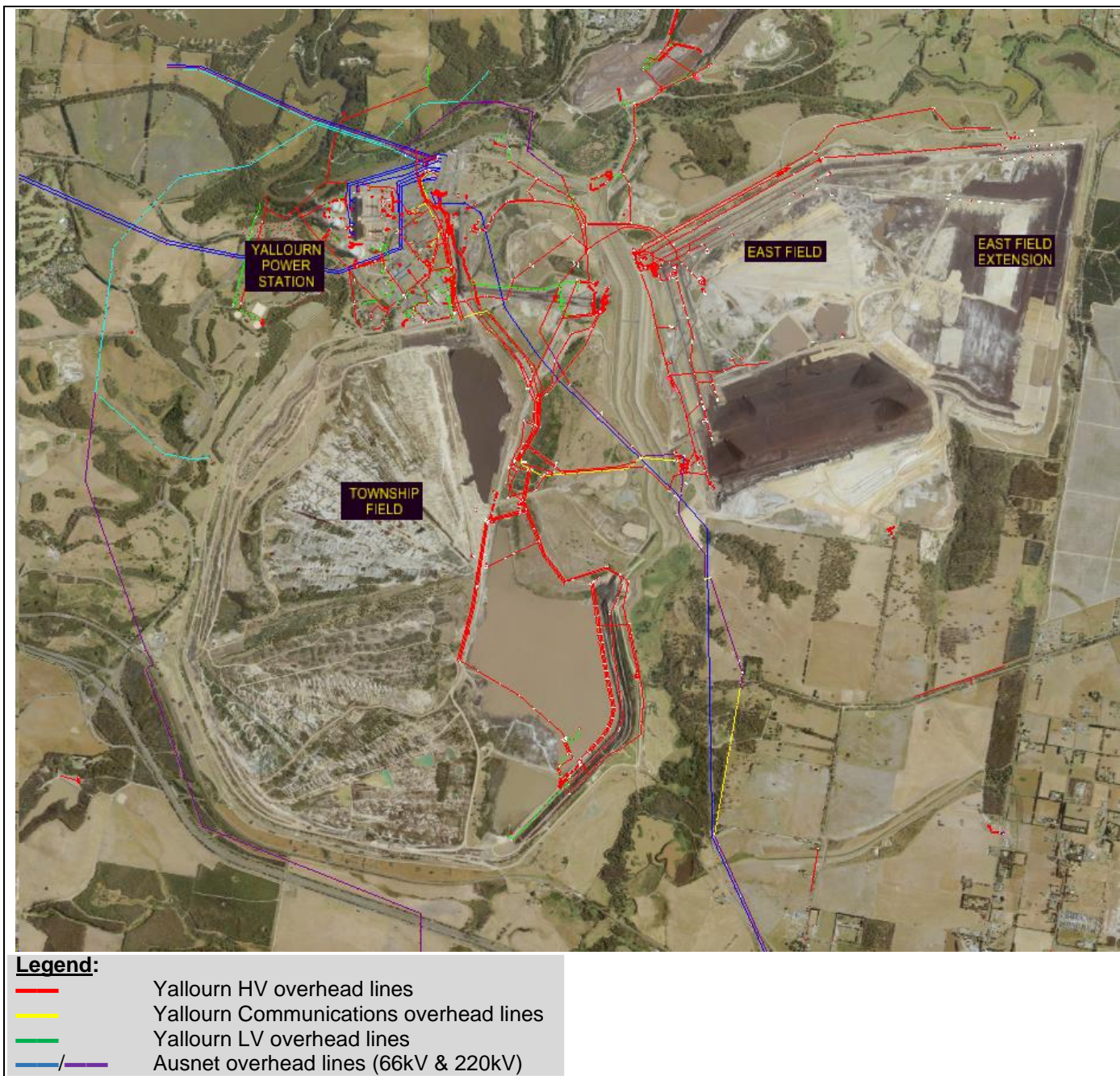
Photo 1 – shows overall land under EnergyAustralia Yallourn control



Figure 1: EnergyAustralia Yallourn Boundary - Identified in White Outline



Photo 2 – shows overhead lines on the Yallourn site



**Figure 2: All Overhead Lines within the EnergyAustralia Yallourn Boundary**

## 8 APPENDIX 2 – Cross Reference to the Electricity Safety (Electric Line Clearance) Regulations 2015

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:
	<b>9 Preparation of management plan</b>	
(1)	This regulation does not apply to a responsible person referred to in section 84A or 84B of the Act.	N/A
(2)	Before 31 March in each year, a responsible person must ensure that a management plan relating to compliance with the Code for the next financial year is prepared.	5.3
(3)	A responsible person must ensure that a management plan prepared under subregulation (2) 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;	4
(f)	the land to which the management plan applies (as indicated on a map);	Appendix 1
(g)	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—	4.1
(i)	native; or	5.2
(ii)	listed in a planning scheme to be of ecological, historical or aesthetic significance; or	5.2
(iii)	a tree of cultural or environmental significance;	5.2
(h)	the means which the responsible person is required to use to identify a tree of a kind specified in paragraph (g)(i), (ii) or (iii);	5.1
(i)	the management procedures that the responsible person is required to adopt to ensure compliance with the Code, which must—	5.1
(i)	include details of the methods to be adopted for managing trees and maintaining a minimum clearance space as required by the Code; and	5.1
(ii)	specify the method for determining an additional distance that allows for cable sag and sway for the purposes of determining a minimum clearance space in accordance with Division 1 of Part 3 of the Code;	5.1
(j)	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;	5.1
(k)	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;	N/A
(l)	the details of each approval for an alternative compliance mechanism that—	N/A
(i)	the responsible person holds; and	
(ii)	is in effect;	

(m)	a description of the measures that must be used to assess the performance of the responsible person under the management plan;	5.3
(n)	details of the audit processes that must be used to determine the responsible person's compliance with the Code;	5.5
(o)	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;	5.1
(p)	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
(q)	dispute resolution procedures.	5.3
(4)	A method for determining an additional distance that allows for cable sag and sway may provide for different additional distances to be determined for different parts of a span of an electric line.	5.1