



Valley Power Gas Power Station (VPPS)

Snowy Hydro Limited

Vegetation Management Plan 2021-2022

Prepared by Worley Parsons for Snowy Hydro Limited

1 JULY 2021 – 30 JUNE 2022

Table of Contents

Table of Contents	1
1. Contacts and Responsible Officers	2
1.1 Specified Operator - Snowy Hydro Ltd, owner of Valley Power Gas Power Station	2
1.2 Person Responsible for VMP Preparation: Gary Blanch	2
1.3 Person Responsible for Carrying out the VMP: Plant Manager	2
1.4 Emergency Vegetation Clearance - Phone Number, 24hrs, Everyday	2
2. Document Revision History	3
3. Abbreviations & Definitions	4
3.1 Abbreviations	4
3.2 Definitions	4
4. Legislation and Compliance Information	5
5. Scope and Policy	8
6. Availability of the VMP	8
7. Objectives of the VMP	8
8. Site - VPPS and 220kV Transmission Line	9
9. Operation and Preventative Maintenance Program	9
9.1 Asset Inspection/Monitoring	10
9.2 Site Vegetation Clearance	10
9.3 Hazard Space	11
9.4 Notification and Dispute Resolution Process	12
9.5 Auditing	12
10. Training	13
11. Reviewing	14
12. Submission of the VMP	14
Appendix A - Site Location Plans	15
Appendix B – Transmission Minimum Clearance Space	18
Appendix C – Sag & Sway & Hazard Tree Considerations	19

1. Contacts and Responsible Officers

1.1 Specified Operator - Snowy Hydro Ltd, owner of Valley Power Gas Power Station

VPPS Address: Barton's Lane, Traralgon, VIC, 3844

Mailing Address: PO Box 988, Traralgon, VIC,3844

Telephone: 03 5173 9300

1.2 Person Responsible for VMP Preparation: Gary Blanch

Position: Area Manager Gas and Diesels

VPPS Address: Barton's Lane, Traralgon, VIC, 3844

Mailing Address: PO Box 988, Traralgon, VIC,3844

Telephone: 03 5173 9300

1.3 Person Responsible for Carrying out the VMP: Plant Manager

Position: Plant Manager

VPPS Address: Barton's Lane, Traralgon, VIC, 3844


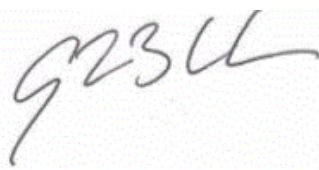
Mailing Address: PO Box 988, Traralgon, VIC,3844

Telephone: 03 5173 9300

1.4 Emergency Vegetation Clearance - Phone Number, 24hrs, Everyday

Generation Operations Controller – 02 6453 2484

2. Document Revision History

Document Name			
Valley Power Station Vegetation Management Plan 2021_22			
Author	Checked and Updated	Approved	Issue Date
Gary Bennett Worley Parsons	 Rachael Williams Senior Environmental Advisor	 Gary Blanch Area Manager Gas and Diesels	30 March 2020

Issue	Summary of Changes	Issue Date
1	Initial Release	3 Apr 08
1.1	Name changes and contact updates	17 Feb 11
1.2	Review & redraft by Worley Parsons for approval	6 Jun 15
2	VMP Approved	12 Jun 15
3	Review and updates by Snowy Hydro 29/3/19	2 April 2019
4	Review by Snowy Hydro - no significant changes	30 March 2020
5	Review by Snowy Hydro -Updated to the <i>Electricity Safety (Electric Line Clearance) Regulations 2020 requirements</i>	30 March 2021

3. Abbreviations & Definitions

3.1 Abbreviations

VPPS	Valley Power Gas Power Station
AMGD	Area Manager Gas and Diesels
Gen Ops	Generation Operations - Remote Operations Control Centre, Cooma, NSW (24hr everyday)
OiC	Operator in charge
CFA	Country Fire Authority
ESV	Energy Safe Victoria
BMMP	Bushfire Mitigation Management Plan
DFS	Declared Fire Season
VMP	Vegetation Management Plan
TFB	Total Fire Ban Day
AEMO	Australian Energy Market Operator

3.2 Definitions

Act	<i>Electricity Safety Act 1998 (Vic)</i>
Code	Code of Practice contained in the Schedule of the <i>Electricity Safety (Electric Line Clearance) Regulations 2020 (Vic)</i>
Inspector	Person employed by the Vegetation Management Company and responsible for local fieldwork
Native Vegetation	Native vegetation means plants like trees, shrubs, herbs and grasses that would have grown naturally in Victoria before European arrival
Regulations	<i>Electricity Safety (Electric Line Clearance) Regulations 2020 (Vic)</i>
Vegetation Management Company	Specialist external company responsible for the management, coordination and supervision of all work associated with the Vegetation Management Program.
Fire Danger Period	means a period declared under section 4 of the <i>Country Fire Authority Act 1958 (Vic)</i> to be a fire danger period
Total Fire Ban Day	means a day that has been declared to be a day of total fire ban under section 40(1) of the <i>Country Fire Authority Act 1958 (Vic)</i>

4. Legislation and Compliance Information

Snowy Hydro Limited (**Snowy Hydro**) is identified in the *Electricity Safety Act 1998* (Vic) (Act) Version No. 075 as at 1 April 2019, to have electric line clearance responsibilities.

Under regulation 9(2) of the *Electricity Safety (Electric Line Clearance) Regulations 2020* (Vic) (Regulations) this includes preparation of an electric line clearance management plan herein referred to as the Vegetation Management Plan (**VMP**).

- **Regulation 9(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.**

It is noted that Regulation 9(3) which requires submission of the VMP to Energy Safe Victoria (**ESV**) for the period 1 July 2021 to 30 June 2026 does not apply to Snowy Hydro as Snowy Hydro does not meet the definition of a major electricity company provided in Section 3 of the Act which is a distribution or transmission company.

Under regulation 10(2), Snowy Hydro would be required to submit its VMP to Energy Safe Victoria (**ESV**) if requested. ESV evaluates electric line clearance management plans to ensure they are fit for purpose and comply with the Act and Regulations.

- **Regulation 10(2) -The responsible person must provide a copy of the management plan to Energy Safe Victoria within 14 days after a written request from Energy Safe Victoria or such longer period as specified by Energy Safe Victoria in the written request.**

Under regulation 10(6), Snowy Hydro is also required to ensure the following:

- **Regulation 10(6) - The responsible person must ensure that a copy of the management plan is -
(a) published on the responsible person's Internet site; and
(b) available for inspection at the responsible person's principal office in the State during normal business hours.**

Table 1 below provides assistance to quickly identify the specific items within the VMP as required by regulation 9 of the Regulations.

Table 1: VMP sections addressing the Regulation requirements

Regulation Ref	Regulation Requirement	VMP Section
9(4a)	The name, address and telephone number of the responsible person	1
9(4b)	The name, position, address and telephone number of the individual who was responsible for the preparation of the management plan	1
9(4c)	The name, position, address and telephone number of the persons who are responsible for carrying out the management plan	1
9(4d)	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
9(4e)	The objectives of the management plan	7
9(4f)	The location to which the management plan applies, by the inclusion of a map	8 & App A
9(4g)	Any hazardous bushfire risk areas and low bushfire risk areas in the land referred to in paragraph (4f) (as indicated on the map)	8 & App A
9(4h)	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 - <ul style="list-style-type: none"> (i) indigenous to Victoria; or (ii) listed in a planning scheme to be of ecological, historical or aesthetic significance; or (iii) a tree of cultural or environmental significance 	8
9(4i)	The means which the responsible person is required to use to identify a tree specified in paragraph (g) (i), (ii) or (iii)	8
9(4j)	The management procedures that the responsible person is required to adopt to ensure compliance with the Code, which must – <ul style="list-style-type: none"> (i) include details of the methods to be adopted for managing trees and maintaining a minimum clearance space as required by the Code; and (ii) for the purposes of determining a minimum clearance space in accordance with Division 1 of Part 3 of the Code - <ul style="list-style-type: none"> a must specify the method for determining an additional distance that allows for conductor sag and sway; and 	9 & 11

- b may provide for different additional distances to be determined for different parts of an electric line span;

Note -

Clause 21(2) of the Code requires a distribution company or an owner or operator of a railway or tramway supply network that is consulted by a Council to assist the Council by determining an additional distance.

9(4k)	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	9.2
	<i>Note - Clause 10 of the Code requires a responsible person to cut trees, as far as practicable, in accordance with AS 4373.</i>	
9(4l)	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	NA
9(4m)	The details of each approval for an alternative compliance mechanism that - (i) the responsible person holds; and (ii) is in effect;	NA
9(4n)	A description of the measures that must be used to assess the performance of the responsible person under the management plan	9.5 & 11
9(4o)	Details of the audit process that must be used to determine the responsible person's compliance with the Code	9.5 & 11
9(4p)	The qualifications and experience that the responsible person must require of the persons who are to carry out the cutting or removal of trees in accordance with the Code and the Electricity Safety (General) Regulations 2019	10
	Note Regulation 616(2) of the Electricity Safety (General) Regulations 2019 sets out specific requirements for qualified persons carrying out vegetation management work.	
9(4q)	Notification and consultation procedures, including the form of the notice to be given in accordance with Division 3 of Part 2 of the Code	9.4
9(4r)	A procedure for the independent resolution of disputes relating to electric line clearance	9.4
9(4s)	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.	NA

5. Scope and Policy

VPPS's VMP includes inspection, vegetation management and performance monitoring of the site. The planning and scheduling of this program is based principally on the system of asset inspection, maintenance reporting, and regular review. The scope of the VMP is specific to the VPPS transmission line and switchyard assets.

The VMP is to be read as the Vegetation Policy for the site.

This document makes reference to other plans, manuals, standards, policies, procedures, service providers and work instructions which, when combined with this VMP, cover all of the activities that contribute to the reduction of vegetation fire risk.

6. Availability of the VMP

A copy of the current VMP is available on request via reception at the VPPS office address nominated in the Contact Details section of the VMP. Office business hours are 7 am to 4 pm Monday to Friday.

A copy of the VMP is also available from the Snowy Hydro internet site:

<https://www.snowyhydro.com.au/wp-content/uploads/2020/05/VPPS-Vegetation-Management-Plan-FY20-.pdf>

7. Objectives of the VMP

The objectives of the VMP are to:

- minimise the risk of fire starts from the VPPS and associated 220kV Transmission Line Assets contacting vegetation;
- achieve compliance with the relevant legislative and regulatory requirements; and
- define Snowy Hydro's approach to vegetation management around VPPS electricity assets

8. Site - VPPS and 220kV Transmission Line

VPPS is an established site owned and operated by Snowy Hydro and is located at Barton's Lane, Traralgon. The surrounding area is industrial with some open grassed areas in proximity. The ground surface of each switchyard is crushed rock gravel. All trees have been cleared to grasslands under the line route. There are areas of vegetation along the boundary of the line easement.

There are:

- no trees of cultural or environmental significance on the site;
- small sections along the line route easement where new tree growth could enter the clearance space if not maintained; and
- no Private Overhead Electric Lines or Distribution Network connections to the transmission line.

Snowy Hydro will undertake a periodic review of the site planning scheme to identify any trees that may be considered to be of cultural, ecological, historical or aesthetic significance.

The site is remotely monitored by Generation Operations (Gen Ops) 24hrs per day, 7 days per week. Gen Ops is located in Cooma NSW. The site is locally managed by the Plant Manager, and there are local staff on call outside normal business hours for emergency response via the Gen Ops callout.

The site is electrically connected via an overhead 220 kV line from the 220kV Switchyard to the nearby Loy Yang Power Station 500kV Switchyard. The six generators are connected to the generator transformers located in the 220kV switchyard via 11kV cables situated underground in concrete culverts.

Appendix A Figures 1 to 3 show the site map and location of VPPS and its 220kV Switchyard (including the overhead 220 kV line to Loy Yang Power Station 500kV Switchyard).

9. Operation and Preventative Maintenance Program

Snowy Hydro's corporate procedures, Access Rules and site specific operating instructions are designed to ensure that all activities conducted on site are performed in a safe manner by competent personnel. Transmission inspection and maintenance activities are undertaken only by service provider personnel who comply with the applicable training requirements detailed within the VMP.

Regular planned inspections are completed of the line easement for vegetation and hardware of the 220KV Transmission Line. All maintenance identified is completed to agreed timeframes within the VMP. The frequency is set out in the following section.

Snowy Hydro will employ the services of an experienced horticultural Service Provider to inspect, clear and maintain the vegetation levels on and around the site along the 220kV line easement. Snowy Hydro's Service Providers are required to have proven safe work practices prior to engagement and have a system of work that meets Snowy Hydro's contract qualification requirements.

A scheduled review is completed of the site performance and fire risk prior to each Summer and changes are incorporated into the VMP if required. The capabilities, progress and services provided by the Service Provider will be assessed by Snowy Hydro annually as part of the pre-season review.

9.1 Asset Inspection/Monitoring

A program of asset inspection is scheduled and records of completion using the Snow Hydro "Ellipse" works management system as follows:

Item	Frequency	Competent Resource
Thermographic Survey of 220 kV line	Annually	Service Provider
Line Route Vegetation Inspection & Clearance	Annually	Service Provider
Switchyard Earthing	Annually	VPPS personnel
Fault & Fire Performance	Annually	VPPS Management
Tower & Line Inspection	3 yearly	Service Provider
Line Protection Testing	4 yearly	Protection Team
VMP Review	Annually	VPPS Management

Vegetation will be inspected by a competent inspection company. The clearance space will be maintained to comply with the minimum clearance space allowing for sag and sway of the conductors as defined in the Code as well as allowing for regrowth during the time between cutting times (**Appendix B** and **C**). Reference should also be made to Snowy Hydro's internal procedure **SP25-22** Vegetation Management of Powerline Easements for bushfire Prevention.

9.2 Site Vegetation Clearance

Clearance strategies exist to maintain assets to a high standard of operational reliability and minimal risk of in service failure from vegetation. All maintenance found during inspections (or faults) during the Declared Fire Season (**DFS**) is immediately planned and completed as soon as practical to organise the works package and competent resources.

Where tree removal is required, all trees will be removed in accordance with the requirements of AS 4373. No alternative compliance mechanisms for tree removal are currently proposed.

The Service Provider will clear the 220kV line easement of weeds and pests annually and as required. The intervals will be re-assessed according to the observed growth rates of vegetation on the site. No vegetation will be allowed within the fenced boundaries of the 220 & 500kV Switchyards.

When clearing vegetation, the requirements for approach and access to electric lines as per the 'Code Of Practice On Electrical Safety for Work On Or Near High Voltage Electrical Apparatus' (The Blue Book) are to be adhered to as applicable. Snowy Hydro's Safe Access Rules and Practices will apply as appropriate, and where they require a higher standard than is required by the Blue Book, then the Snowy Hydro Rules and Practices will be adhered to. The following table should be used as a guideline to planning maintenance works required.

Maintenance Completion Required	TFB	Declared Fire Season (DFS)	No Declared Fire Season
Line or Vegetation	Immediately	<7 days	Prior to DFS

9.3 Hazard Space

Hazardous trees and vegetation will be managed in accordance with Part 3 of the Code contained in Schedule 1 of the Regulations. The Hazard Space is inspected as part of the cyclic inspection of the network. Potential hazards are identified and evaluated at this time. Hazardous vegetation typically could be:

- dead and dangerous limbs;
- physical defects in trees; and
- other trees or limbs that may be unstable and could fall on the line under the range of weather conditions that can be reasonably expected to prevail in the locality.

When required, hazardous vegetation unable to be removed will be evaluated by a suitably qualified Arborist and a management action plan developed.

While all practical efforts will be made to identify hazardous vegetation, all vegetation within the vicinity of conductors has the potential to be hazardous and it is not practical or environmentally acceptable to remove all potential hazardous vegetation. During the cyclic clearance and pruning works, or under emergency situations, hazardous vegetation will be addressed to ensure that the clearance, re-growth and hazard spaces remain clear of foreseeable hazards.

9.4 Notification and Dispute Resolution Process

Where hazardous vegetation is found to be located outside of the Snowy Hydro site or easements on private or public land, Snowy Hydro will consult with the occupier or owner of the property and notify them in writing to seek agreement and approval for removal of the vegetation.

Consultation will also be undertaken where there is a requirement to cut or remove a tree that is:

- a tree of cultural or environmental significance;
- listed in a planning scheme to be of ecological, historical or aesthetic significance.

Where agreement to remove cannot be reached, the hazardous vegetation will be referred to Energy Safe Victoria, for direction.

9.5 Auditing

VPPS has a series of audits to ensure the VMP is effective in vegetation management as follows:

- request for relevant competencies of employees and service providers' employees that inspect and maintain the site to meet the training requirement in the VMP prior to starting works;
- management review and approval of the VMP and the Service Provider prior to the DFS;
- the site is certified to ISO14001, and audited by an independent external auditor to verify certification; and
- internal Snowy Hydro audits of the presence and effectiveness of the environmental management system.

External audits to ISO14001 are conducted annually across Snowy Hydro, with recertification on a 3 yearly cycle. Inclusion of VPPS in the schedule is determined by the independent external auditors based on previous performance of the site and audit coverage required to demonstrate compliance to the international standard ISO14001.

Non-conformances from all audits are recorded in the Snowy Hydro incident management database together with responsibilities and timings for action completion. These may be preventative or corrective actions. If relating to asset management, actions will be recorded in the Snowy Hydro defect management system, which similarly identifies responsibilities and timings for completion.

10. Training

Records of employee training and employee and service provider records are kept in the company's learning management system.

Evidence of relevant ESV approved competencies of Service Provider's employees that inspect and/or maintain the vegetation management in the VMP are requested prior to starting works, and are required during the Snowy Hydro contract qualification process prior to the ESV approved Service Provider being appointed.

All Asset Inspectors working on the VPPS network are required to hold an ESV approved Certificate II in Asset Inspection. The VESI Skills and Training Matrix stipulates the requirements and frequency of refresher training for asset inspectors. The matrix is available at www.vesi.com.au

As specified in schedule 1 of the *Electricity Safety (Electric Line Clearance) Regulations 2020*, where a suitably qualified arborist is required they shall have the following:

- (a) as a minimum, the qualification of National Certificate III in Arboriculture including the "Perform a ground-based tree defect evaluation" unit of competency, or an equivalent qualification; and
- (b) at least 3 years of field experience in assessing trees.

VESI also specifies that all persons carrying out the cutting or removal of trees (excepting trainees and ground control personnel) must have successfully completed and maintained (as a minimum) the training elements as shown in the Table overleaf.

Additional requirements are also defined for cutters working from elevated work platforms (EWP's). The full list of requirements for specific roles is provided in the VESI *Vegetation Skills and Training Matrix* which is also available at www.vesi.com.au

Title	Qualification/CSU number
Certificate IV in Horticulture and Arboriculture ¹	
Comply with sustainability, environmental and incidental response policies and procedures	UETTDREL13A
Working safely near live electrical apparatus as a non-electrical worker	UETTDREL14A
Operate and maintain chainsaws	AHCARB205A
Plan the removal of vegetation up to vegetation exclusion zone near live electrical apparatus	UETTDRCV23A
Monitor safety compliance of vegetation control work in an ESI environment	UETTDRCV27A
Elective Competency Standard Units	
Undertake release and rescue from a tree near live electrical apparatus	UETTDRCV34A
Maintain safety at an incident scene	PUAOHS002B
Training ²	
Perform EWP controlled descent escape	UETTDRRF08B
Safe Approach Distances - Vegetation Work	
Undertake release and rescue from a tree near live electrical apparatus	UETTDRCV34A
Safe to Approach SWER ⁴	
Implement traffic management plan	RIIWH302D
VESI Environmental Framework	
VESI Safety Framework	
Authority Training*	
Network Operator Induction	

11. Reviewing

The VMP is reviewed each year and adjustments and improvements are made to better meet the objectives of the VMP as required. The review process includes:

- the Post Fire Season Review, which is held at the end of the fire danger period and before the next declared fire season, to review VPPS Asset performance & risk under the VMP;
- the Summer Pre-Season Agenda Item which is held before the start of the fire declaration period. It provides an opportunity to report on the progress of VMP activities and to approve review change updates, if the need arises, to meet the requirements of the VMP;
- Asset Inspection and fault performance findings;
- during the declared fire season reporting to the monthly management meeting of the compliance to the VMP requirements; and
- ESV Directions, applicable codes/Acts updates.

12. Submission of the VMP

The VMP is reviewed annually by 31 March. The VMP is available on SHL's external website and is made available to ESV upon request but is not required to be submitted.

Appendix A - Site Location Plans

Figure 1. Switchyard and Line Route Aerial Photograph 220k

The Valley Power power station site and transmission assets shown below are located in a Hazardous Bushfire Risk Area (HBRA). The 220kV line is shown in yellow.

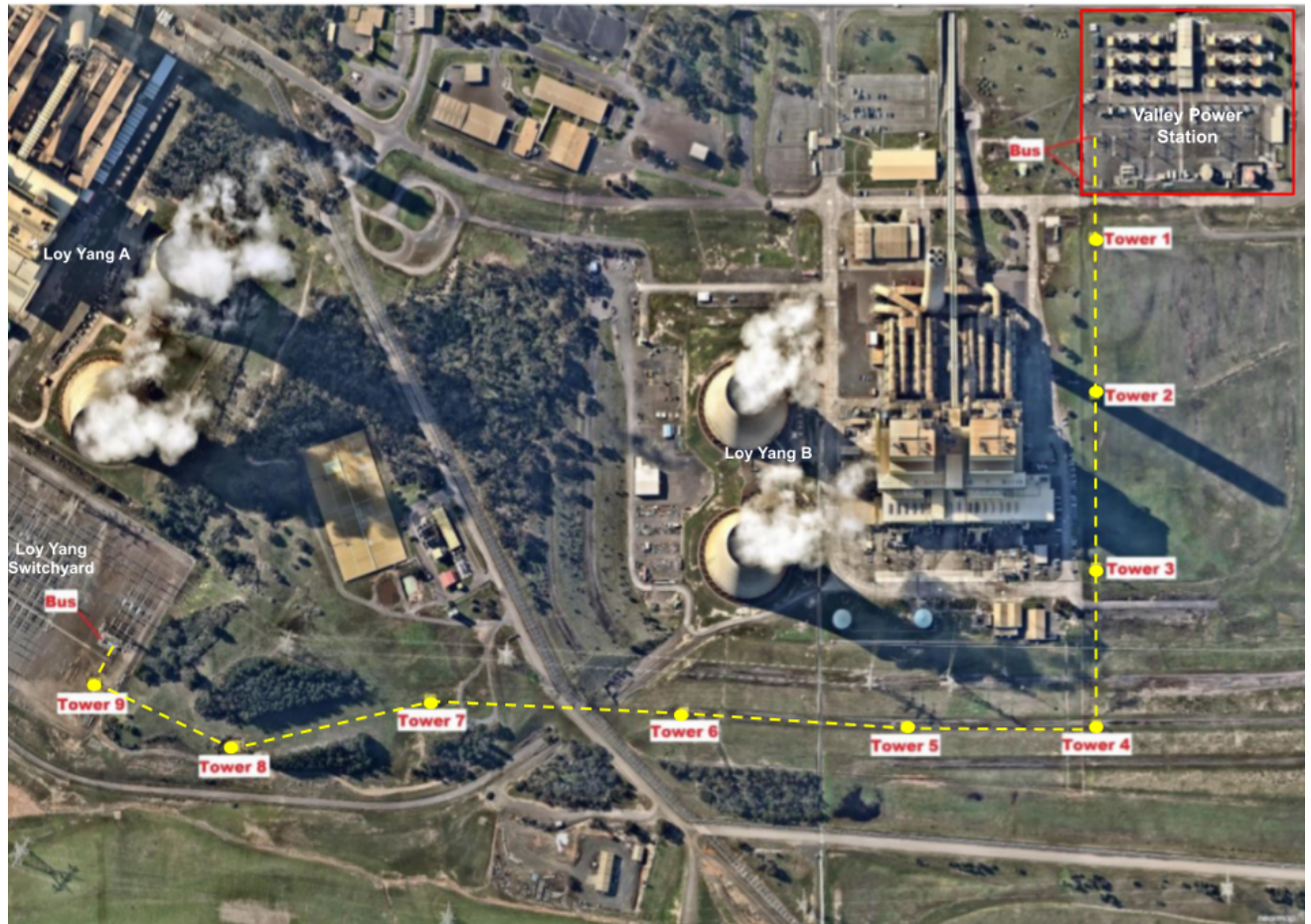


Figure 2. Switchyard and Line Route Schematic Diagram

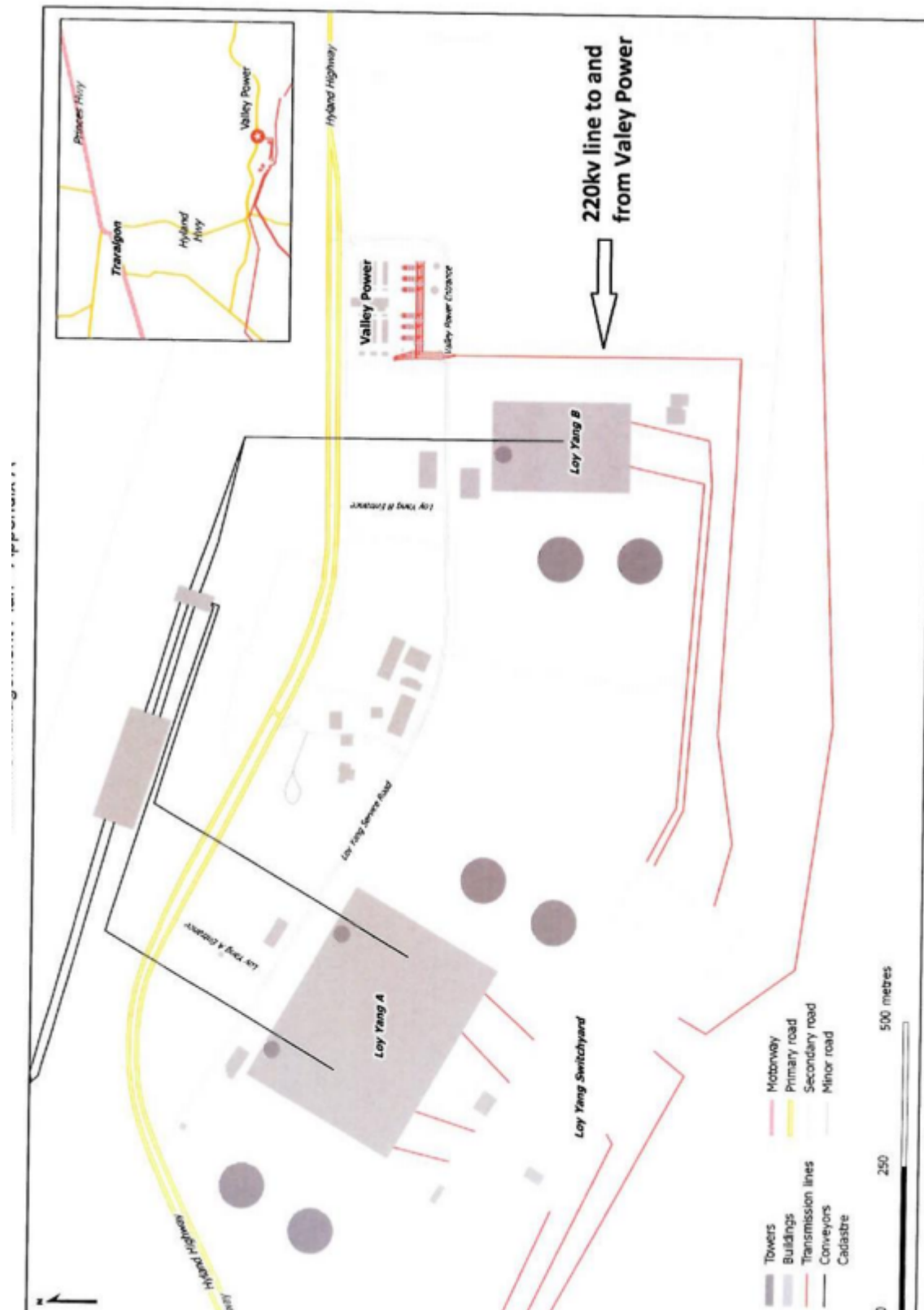


Figure 3. Site Location Plan



Aerial Photograph of Site taken October 2017

Appendix B – Transmission Minimum Clearance Space

Schedule 1 of the *Electric Safety (Electric Line Clearance) Regulations 2020 (Vic)*

MINIMUM CLEARANCE SPACES SURROUNDING A TRANSMISSION LINE

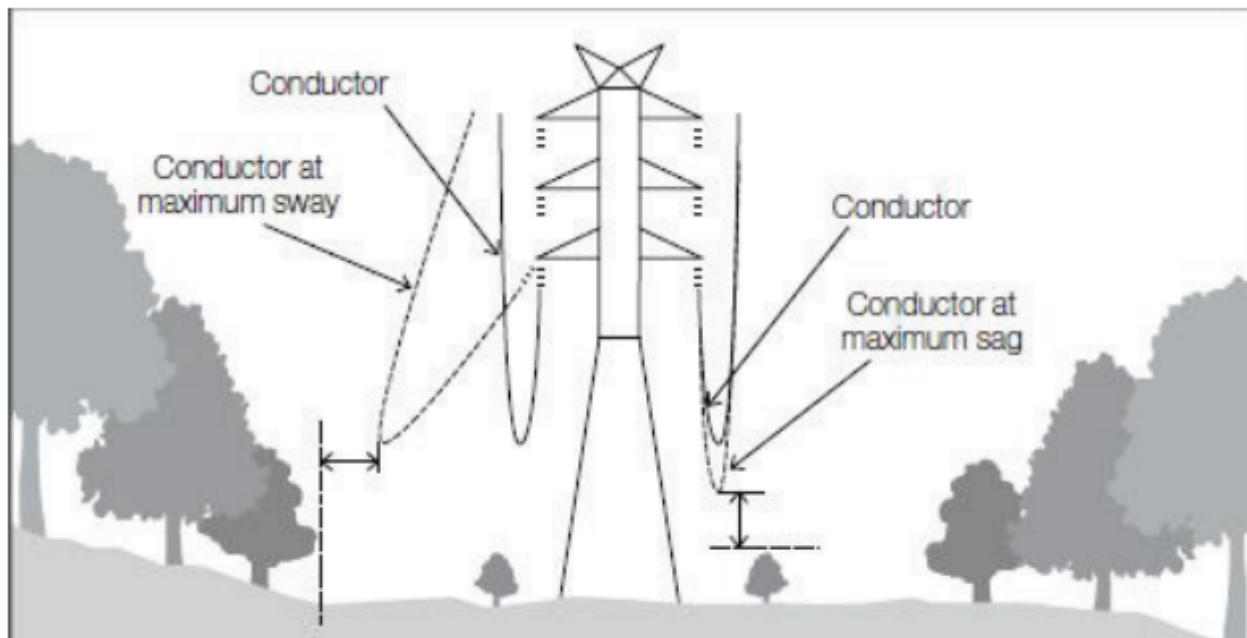
1	3	2
Nominal voltage	Applicable Horizontal Distance (without allowance for sag and sway)	Applicable Vertical Distance (without allowance for sag and sway)
66 kV	3000 mm	3000 mm
Over 66 kV, less than 220 kV	4600 mm	3700 mm
220 kV	4600 mm	3700 mm
275 kV	5000 mm	4200 mm
330 kV	5500 mm	4700 mm
500 kV	6400 mm	6400 mm

Notes

1. The minimum clearance space must be extended by an additional distance to allow for sag and sway of the conductors (see clause 30(3)).
2. For the required clearance space, an additional distance must be added to the minimum clearance space to allow for regrowth during the period between cutting times .
3. For transmission line spans up to 400 metres long, the additional distance required to allow for sag can often be as much as 4 metres.
4. For transmission line spans up to 400 metres long, the additional distance required to allow for sway can often be as much as 8 metres.
5. The above table is partially illustrated in Figures 1 and 2 overleaf in Appendix C.

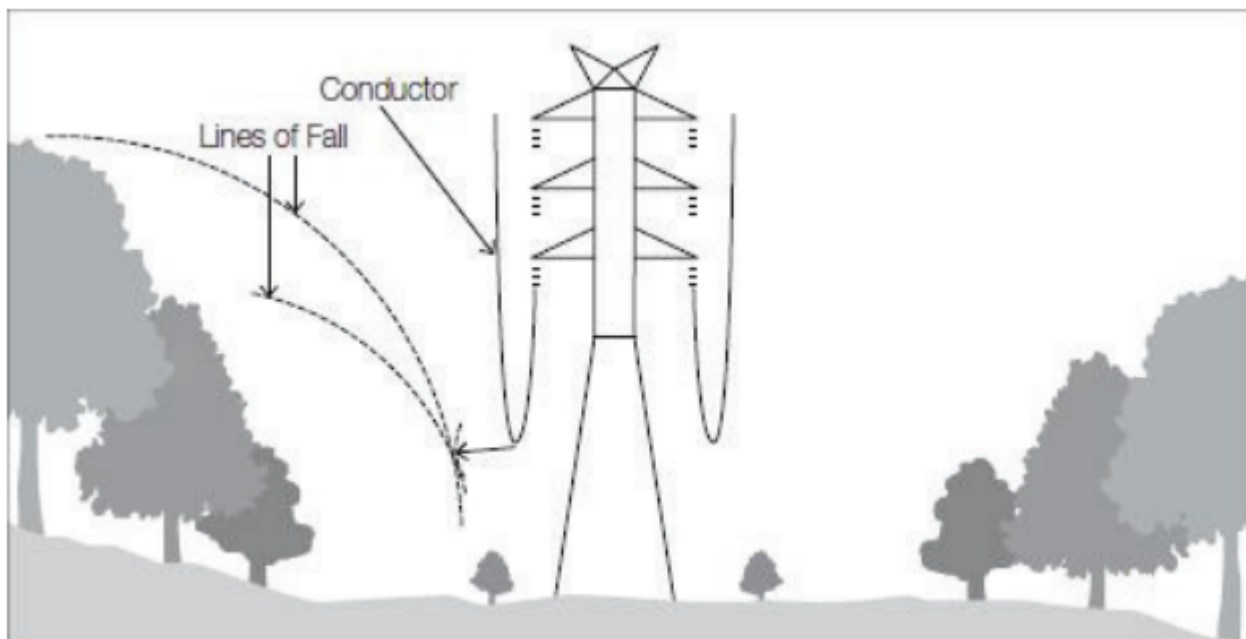
Appendix C – Sag & Sway & Hazard Tree Considerations

End View of the Transmission Line (Figure 7 from Schedule 2 of the Regulations)



NOT TO SCALE

Trees Adjacent to the Transmission Line (Figure 8 from Schedule 2 of the Regulations)



NOT TO SCALE