



Bushfire Attack Level Assessment

**Substation 220 kV &
33kV - MAD**

**435 - 503 Mount
Atkinson Road (1 Oroya
Drive Truganina 3029)**

Client: MVC Services
Attention: Daniel Salzmann
Job No: 7355
Date: 15th October 2025
Revision No: 2

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Revision History

Date	Rev. No.	No. of Pages	Issue or Description	Checked By	Approved By	Date Approved
15/10/2025	1	13	Provisional BAL report	K Muzammil	S Branca	15/10/2025
15/10/2025	2	14	Final BAL report	K Muzammil	S Branca	15/10/2025



Summary

A preliminary Bushfire Attack Level (BAL) assessment of the site of the 220kV/33 kV substation at 435 -503 Mt Atkinson Road (1 Oroya Drive Truganina 3029) was undertaken by Salus Risk Consulting as per the requirements of AS 3959:2018 *Construction of buildings in bushfire prone areas*.

The proposed site was inspected on 08/10/2025. Full view of the property was available from the road reserves of Mount Atkinson Road and Riding Boundary Road.

In general, the provisional bushfire attack level assessment for 500kV/220kV substation (MAD) is expected to be BAL 12.5 considering the following possible limitations.

- This BAL rating is applicable to occupied buildings/ enclosures i.e. control room and secondary equipment hut within substation.
- The distance from classified vegetations towards north, east and west is measured from property boundary. The distance from classified vegetation towards south is measured from the edge of control room building.
- Provide site plan showing location of occupied spaces and separation distances from property boundaries.
- Melton Planning Scheme requirements may impose specific planning requirements on all or part of the site that necessitate a more stringent BAL such as BAL-19, which could affect the construction requirement.
- Development in the vicinity of the site - particularly to the east and northeast land parcels - may change the extent of the Bushfire Prone Area during the course of the project. This should be monitored to review any effect on BAL for substation.

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Property Details

Applicant Name: Salus Risk Consulting on behalf of VSBA
Contact Number: 0437 662 567
Email: admin@salusrisk.com.au
Municipality (LGA): Melton City Council
Description of Building Works: Development and use of site for utility installation including building
Site Address: Lot 3\PS907826, 1 Oroya Drive Truganina 3029

Building Classification

The substation site itself is considered infrastructure associated with electricity transmission or distribution, not a building intended for human occupation. As such, the overall facility does not attract a building classification.

However, ancillary buildings or enclosures within the site—such as control rooms, switch rooms, battery rooms, or amenities buildings—must be individually classified based on their use.

The proposed substation at lot 102 includes a control room and secondary equipment hut classified as a building under the NCC.

Standards Requirements

The Bushfire Attack Level (BAL) for the proposed 550 kV and 220 kV substation at lot 3 1 Oroya Drive in Truganina has been reviewed in accordance with AS 3959-2018 and an assessment report prepared.

This Australian Standard stipulates that “[AS 3959] specifies requirements for the construction of buildings in bushfire-prone areas in order to improve their resistance to bushfire attack from burning embers, radiant heat, flame contact and combinations of the three attack forms.”

This report provides advice consistent with the requirements of the Standard, and forms part of the trail of evidence in support of the requirements. No physical testing of any plant or equipment was undertaken by us in the preparation of this report.

In Victoria, bushfire prone areas (BPA) are defined as follows.

*Bushfire prone areas (BPA) of Victoria review 21, gazetted 20/04/2023. The BPA map depicts locations where new buildings, alterations and/or additions must meet the ‘bushfire prone area’ requirements of the National Construction Code and a **minimum Bushfire Attack Level (BAL) 12.5 construction standard** (Section 192A Building Act 1993 – Bushfire Prone Areas determination, and construction requirements of the Building Regulations 2018) [our emphasis].*

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References

Document	Revision	Description
AS 3959	2018	Australian Standard for <i>Construction of buildings in bushfire prone areas</i>
<i>Building in designated bushfire prone areas</i>	September 2023	https://www.planning.vic.gov.au/guides-and-resources/guides/all-guides/building-in-bushfire-prone-areas https://www.vba.vic.gov.au/consumers/bushfire/areas-overlays
	2025	Google Maps
VIC Maps	Current	https://mapshare.vic.gov.au/vicplan/?RunWorkflow=PropSelect&pf=426519394
	Draft	Planning Permit Application Report - Mount Atkinson Road Data Centre Customer Connection

Building Site and Characteristics

The substation will be constructed on part of lot 3 1 Oroya Drive. (Figure – 1).

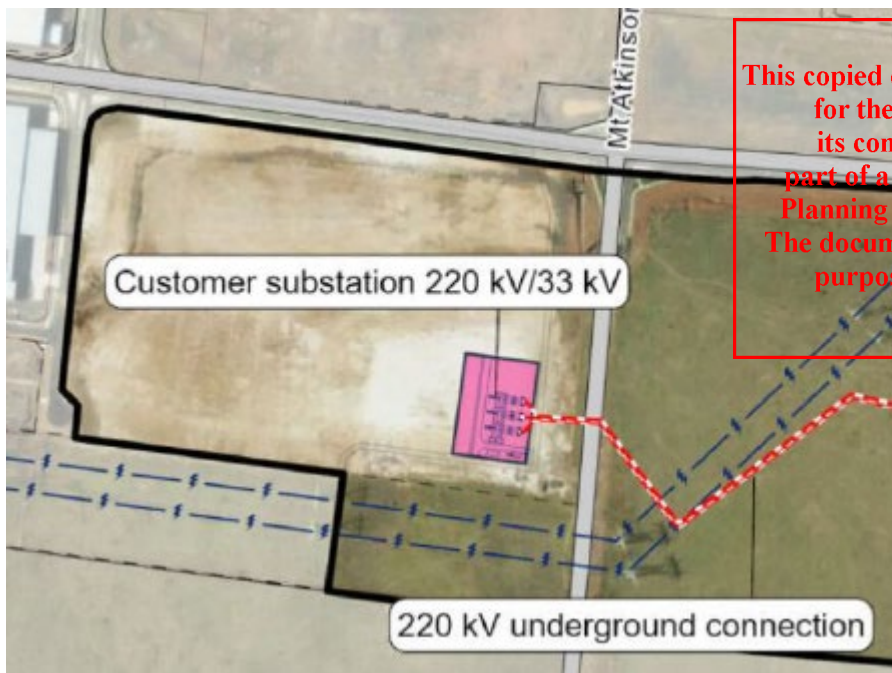


Figure 1: Proposed Location of 500 kV/220 kV substation¹

It is noted that the site is entirely in a Bushfire Prone Area; Figure 2 shows the BPA covering the substation site.

¹ Planning Permit Application

Designated Bushfire Prone Areas

This property is in a designated bushfire prone area. Special bushfire construction requirements apply to the part of the property mapped as a designated bushfire prone area (BPA). Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.

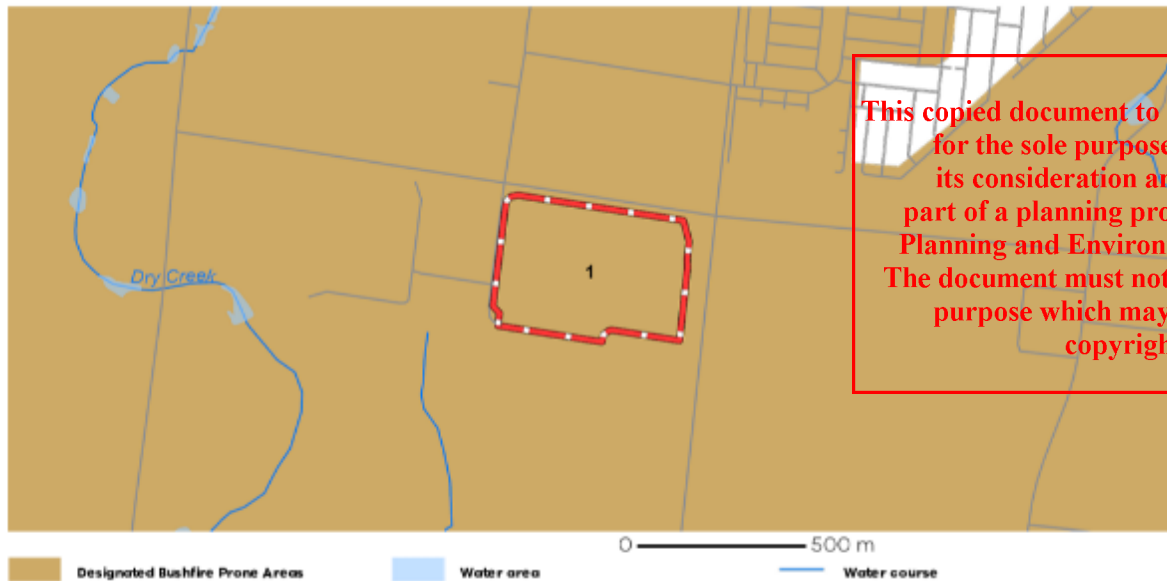


Figure 2: Bushfire Prone Area (BPA) in brown covers the entirety of the site.

Surrounding Land Use

The proposed site for 500kV/220 kV substation is on old farmland, with Riding Boundary Road located to the North and Oroya Drive (previously Drumstick Drive) to the west of the proposed site.

North

The land parcel across RBR is proposed to be developed for substation and any vegetation on this substation is expected to be managed by the occupier.

The land towards northwest across has been developed for industrial purposes, primarily comprising warehouse buildings.

The future development or infrastructure plans for northeastern land parcels across RBR are not known. These land parcels are assumed to be unmanaged grassland/shrubland for this assessment

East

453 Mt Atkinson Road is located towards east of proposed site and is part of the same development (enclosed with red lines in figure 4). Truganina terminal station TNTS is proposed on land parcel across Mt Atkinson Road towards north of the proposed development.

South

Part of 453 Mt Atkinson Road is located towards south of proposed site and is part of the same development. The future development or infrastructure plans for the other land parcel towards south (37 Oroya Drive – SUZ 11) is not known and is assumed to be unmanaged grassland/shrubland for this assessment

West

The land to the west of substation forms part of the same land parcel and any vegetation on this land is expected to be managed by the occupier. The land parcels across Oroya Drive towards west and northwest have also been developed for industrial purposes, primarily comprising warehouse buildings.

Any development on surrounding vacant lands within 100m may change the extent of the Bushfire Prone Area during the course of the project. This should be monitored to review any effect on the BAL for substation.

There is no Bushfire Management Overlay/Wildfire Management Overlay applicable on the site or at any point within over 5 km of the site. There are no significant watercourses nearby; The site itself is slightly down sloped from north to south.



Figure 4: Surrounding Land (Proposed site highlighted green)

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Figure 5: The site itself is slightly down sloped from north to south (or northwest to southeast) at about 95 metres above sea level.

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Figure 6: Vegetation typical of the site itself and 453 Mt Atkinson Road

Bushfire Attack Level (BAL) – Method 1

Step 1: Relevant Fire Danger Index (FDI)

As per Table 2.1 of the Standard, the relevant Fire Danger Index is 100 for this site.

TABLE 2.1
JURISDICTIONAL AND REGIONAL VALUES FOR FDI

State/region	FDI
Australian Capital Territory	100
New South Wales	
(a) Greater Hunter, Greater Sydney, Illawarra/Shoalhaven, Far South Coast and Southern Ranges fire weather districts	100
(b) NSW alpine areas	50
(c) NSW general (excluding alpine areas, Greater Hunter, Greater Sydney, Illawarra/Shoalhaven, Far South Coast and Southern Ranges fire weather districts)	80
Northern Territory	40
Queensland	40
South Australia	80
Tasmania	50
Victoria	
(a) Victoria alpine areas	50
(b) Victoria general (excluding alpine areas)	100
Western Australia	80

Figure 7: Table 2.1 from AS 3959.

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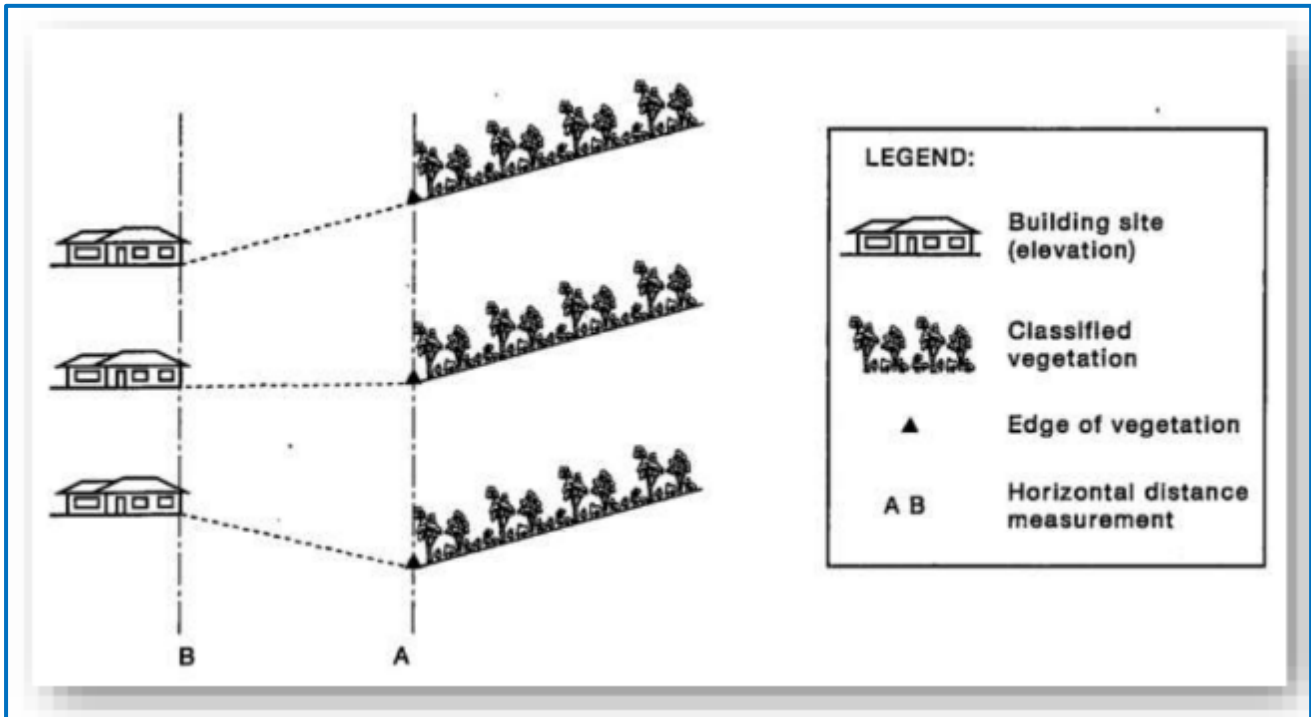
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Step 2: Assess the vegetation within 100m in all directions (tick relevant group)

Vegetation Classifications as per AS3959 clause 2.2.3

	North	South	East	West
Classification	Low Threat (Clause 2.2.3.2 [e])	G Grassland	Low Threat (Clause 2.2.3.2 [e])	Low Threat (Clause 2.2.3.2 [e])
Description	Non-Vegetated Area (roads)	Low open shrubland and unmanaged Grassland	Non-Vegetated Area (managed grassland and road)	Non-Vegetated Area (managed grassland and road)

Step 3: Distance of the site from classified vegetation



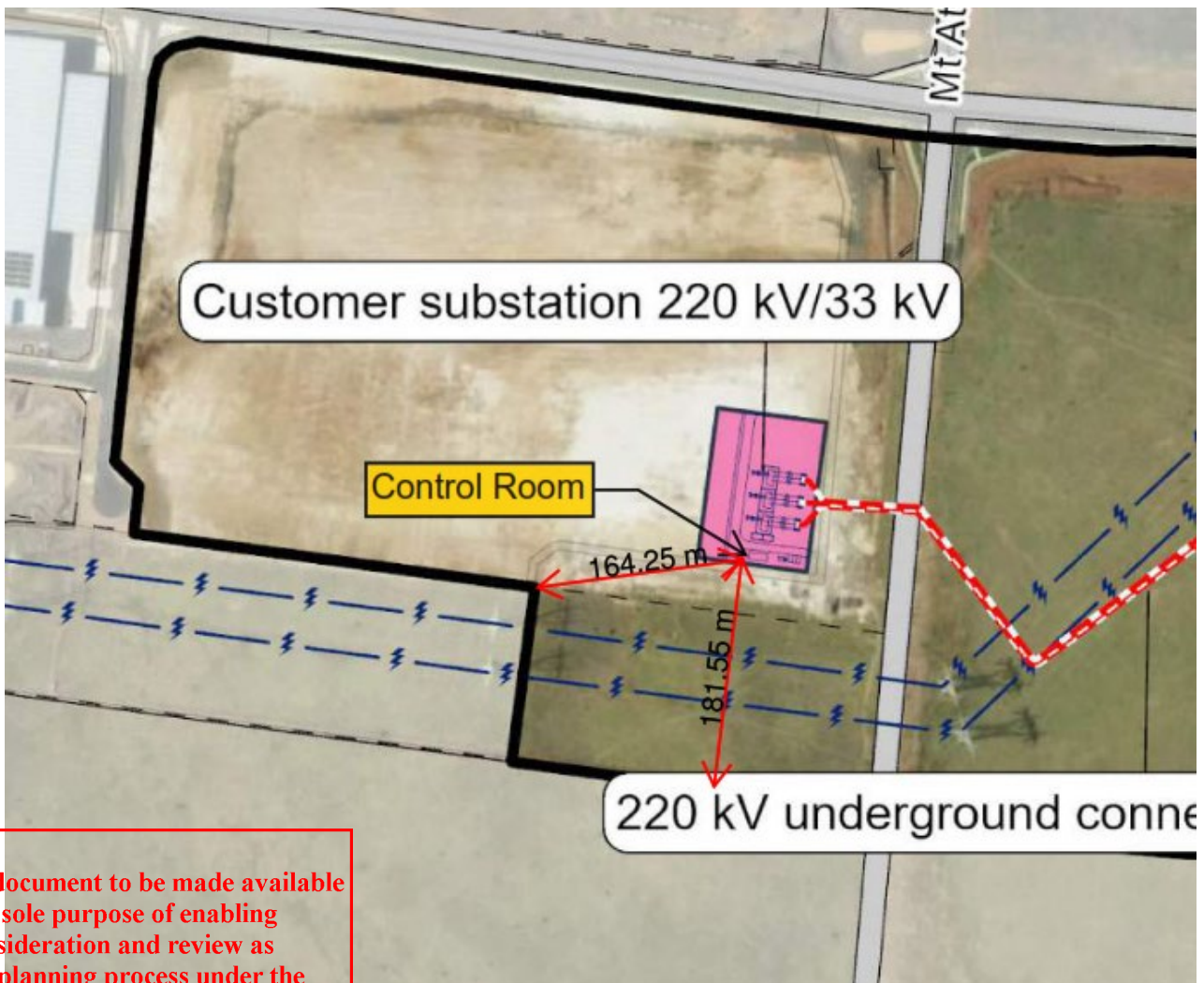
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	NORTH	SOUTH	EAST	WEST
Line of Sight	360°	180°	90°	270°
Measured from	Property Boundary	Edge of building	Property Boundary	Property Boundary
Distance	>100m	>100m	>80m	N/A

Review 15/10/2025: Project Overview MAD 220 kV Bushfire Control Room Distances Customer Site.

It has been advised that the control room and secondary building hut are separated by more than 100m from southern property boundary. See figure below:



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Step 4: Effective slope of land under the classified vegetation

Effective slope	Upslope			
Slope under the classified vegetation	Upslope/0° <input checked="" type="checkbox"/>	Upslope/0° <input type="checkbox"/>	Upslope/0° <input checked="" type="checkbox"/>	Upslope/0° <input checked="" type="checkbox"/>
	Downslope			
	>0 to 5 <input type="checkbox"/>	>0 to 5 <input checked="" type="checkbox"/>	>0 to 5 <input type="checkbox"/>	>0 to 5 <input type="checkbox"/>
	>5 to 10 <input type="checkbox"/>	>5 to 10 <input type="checkbox"/>	>5 to 10 <input type="checkbox"/>	>5 to 10 <input type="checkbox"/>
	>10 to 15 <input type="checkbox"/>	>10 to 15 <input type="checkbox"/>	>10 to 15 <input type="checkbox"/>	>10 to 15 <input type="checkbox"/>
	>15 to 20 <input type="checkbox"/>	>15 to 20 <input type="checkbox"/>	>15 to 20 <input type="checkbox"/>	>15 to 20 <input type="checkbox"/>
Estimated BAL for each side of the site	BAL LOW	BAL FZ	BAL LOW	BAL LOW

Step 5: Determination of Bushfire Attack Level (BAL)

Refer to Table 2.4 for FDI 100

Using the relevant table determine the Bushfire Attack Level (BAL) for each of the vegetation classifications determined at Step 2, the distance from the site determined at Step 3 and the effective slope determined at Step 4.

Select the highest Bushfire Attack Level (BAL) obtained above.

The BAL for 500kV/220kV substation is BAL-12.5.

Note: This BAL rating is applicable to occupied buildings/ enclosures i.e. control room within substation.

Step 6: Determination of the appropriate construction requirements

Bushfire Attack Levels and Corresponding Specific Construction Requirements according to AS3959 Table 3.1 2018 and AS3959 Construction Section 4 for this site are:

Bushfire Attack Level (BAL) (provisional):	Description of Predicted Bushfire Attack, Levels of Exposure and Construction Requirements are (provisionally):
BAL – 12.5 ≤12.5 kW/m²	Ember Attack. The construction elements are expected to be exposed to a heat flux no greater than 12.5 kW/m ² . Construction requirements under section 3 and 5 of AS3959 will apply.

Note: Specific Construction Requirements may be imposed by separate instruments, in excess of those stipulated by AS 3959.

Recommendations

- The control room and secondary equipment hut must be constructed in accordance with section 3 and 5 of AS 3959 applicable for BAL – 12.5.
- The buildings should be managed in a similar condition to defensible space under the Bushfire Management Overlay (BMO). These conditions are:
 - Within 10m of a building flammable objects such as plants, mulches and fences must not be located close to the vulnerable parts of the building such as windows, decks and eaves.
 - Trees must not overhang the roofline of the building, touch walls or other elements of a building.
 - Grass must not be more than 5cm in height. All leaves and vegetation debris must be removed at regular intervals.
 - Shrubs should not be planted under trees on the site.
 - Plants greater than 10cm in height at maturity must not be placed in front of a window or other glass feature.
 - Tree canopy separation of 2m, and overall site canopy cover of no more than 15% at maturity.

It is recommended that the property owner, occupier and facility manager refer to the FRV website for information relating to bushfire safety and preparing a bushfire survival plan.

(<https://www.frv.vic.gov.au>)

(<https://www.frv.vic.gov.au/bushfire-safety>)

This information may change from time to time, and up-to-date information will be found on the FRV website. Future building, should it take place, on the substation site must also have regard to planning requirements at the time. As at the production of this report, these links are of assistance:

<https://www.planning.vic.gov.au/policy-and-strategy/bushfire/building-in-bushfire-prone-areas>
<https://www.planning.vic.gov.au/browse-by-topic/bushfire>

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