

Pre-Summer Bushfire Inspections

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30/04/25



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Revision History

This standard has been updated to include content from existing Technical Bulletins as well as move the scope to a risk based assessment. The amendments are listed below:

- Removal of defect management requirements and provisions (moved to MMI 0002)
- LiDAR and Vegetation defect specifications have been moved to MMI 0013
- Clarified PSBI hardware defects due date
- Removal of conductor ground clearance
- Removal of LV spreader specifications outlined in MCI 0005
- Removal of Annexure 1 and reference provided to MMI 0002 for defect classification
- Removal of Annexure 2 as LiDAR specifications – moved to MMI 0013
- Removal of Annexure 4 LiDAR, vegetation defects and ground clearance – moved to MMI 0013
- Removal of Annexure 5 Sample Vegetation Defect Report (for LiDAR)
- Content from the following Technical Bulletins have been incorporated:
 - o 'TB 0270 – Timber crossarm defect'
 - o 'TB 0290A – Changes to the Pre-Summer Program Requirements' - Network / Protection Settings are written in Section 1.7.1 Table 3
 - o 'TB 0308 – Clarification on Bushfire Defects' – Defect due date has been clarified as before Bushfire Danger Period written in Section 1.7.1
 - o 'TB 0321 – Management of LV Covered/Insulated Services'
- Change of scope to facilitate risk-based assessments

All changes to the scope / purpose of this document from the previous amendment are highlighted in this document with grey colouring.

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Document Control

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1. Documentation Scope

To provide the requirements and scope for the inspection of the company's network assets in bushfire risk areas to reduce the risk of bushfires initiated by Endeavour Energy assets to as low as reasonably practicable (ALARP).

In order to provide the necessary assessment of defects, the pre-summer bushfire inspections program is required to:

- Conduct an inspection of the minimum vegetation clearances specified in the Vegetation Standard MMI 0013 for the following assets; conductors, poles and towers (excluding Fall-in Vegetation Hazards);
- Inspect network assets for the identification of bushfire defects as detailed in MMI 0002.
- Process all identified defects from inspections and record them in Endeavour Energy's asset management database, ensuring appropriate prioritisation in accordance with MMI 0002 and the Vegetation Standard MMI 0013.

This document must be read in conjunction with the defect handbook (MMI 0002) associated with MMI 0001, WNV 1012 for aerial patrol and analysis, the Vegetation Standard (MMI 0013) for the classification and prioritisation of vegetation defects and MMI 0021 for access to private properties.

Fall-in Vegetation defects are not within the scope of the PSBI inspection process as they cannot be identified via LiDAR. Vegetation crews clearing identified vegetation defects are required to inspect for Fall-in Vegetation defects as per the Vegetation Standard.

2. References

External Regulations

Electricity Supply Act 1995 (NSW)

Electricity Supply (Safety and Network Management) Regulation 2014

Electricity Supply (General) Regulation 2014 (NSW)

Work Health and Safety Act 2011 (NSW)

Work Health and Safety Regulation 2017 (NSW)

Company Policies and Procedures

Company Policy 9.1.1 - Bushfire Risk Management

Company Policy 9.9.1 - Network Asset Maintenance

Endeavour Energy's Authorisations Manual

Company Form FSY 0118 - Worksite Coordination/Hazard & Risk Assessment

Company Procedure GSY 0067 - Personal Protective Equipment

Division Workplace Instruction WNV 1012 – Aerial Patrol and Analysis

Branch Workplace Instruction (Maintenance Program) WAE 2039 – Customer Defect Reporting and Defect Management

Safe Work Method Statement SWMS 1.010 - Overhead and Ground Line Inspection and Audit

Safe Work Method Statement SWMS 1.005 – Patrol of overhead mains inspection

Safe Work Method Statement SWMS 6.014 – Removal of foreign objects from conductors and apparatus

Endeavour Energy Electrical Safety Rules

Company Standards

Mains Maintenance Instruction MMI 0001 – Pole and line inspection and treatment procedures

Mains Maintenance Instruction MMI 0002 – Distribution Overhead Defect Handbook

Mains Maintenance Instruction MMI 0013 – Vegetation Clearance Management

Mains Maintenance Instruction MMI 0021 – Guide to rights and obligations for electricity mains located on private property

Asset Risk Model, Bushfire Ignition Risk Cost of Consequence, January 2022

Valuing Aerial Asset Inspections, Endeavour Energy, November 2024

3. Definitions and Abbreviations

Abbreviation	Meaning
CAA	Civil Aviation Act
CAR	Civil Aviation Regulations
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
EPA	NSW Environmental Protection Authority
HV	High Voltage - A voltage exceeding or equal to 1000V AC.
HVC	High Voltage Customers
LiDAR	Light Detection and Ranging - A remote sensing method that uses light in the form of a pulsed laser to measure distance.
LV	Low Voltage - A voltage not exceeding 1000V AC.
OLI/GLI	Overhead Line Inspection / Ground Line Inspection
PSBI	Pre-Summer Bushfire Inspection

Term	Definition
As Low As Reasonably Practicable (ALARP)	The level of risk that is tolerable and cannot be reduced further without the expenditure of time and/or effort and/or cost that is disproportionate to the benefit gained or where the solution is impractical to implement.
Authorised Pole & Line Inspector	Person with pole and line inspection qualifications, trained, accredited and authorised by Endeavour Energy to carry out inspection duties in accordance with this instruction. Hereafter is referred to as "inspector".
Bushfire Prone Land	As defined by the NSW Rural Fire Service, including buffer zones and specified on the Bushfire Prone Land Maps stored on the Endeavour Energy GIS.
Bushfire Danger Period	The statutory Bushfire Danger Period is defined by the Royal Fire Service which is nominally between 1st of October to 31st March each year but may vary from year to year and in specific locations due to local conditions.
Bushfire Risk Area	Areas identified by Endeavour Energy, within our network area, where PSBI of network hardware are to be carried out at the specified frequency. These areas are calculated based on an economic risk-based calculation and use a number of third-party inputs.
Consumers Mains	Conductors between the point of supply and the main switchboard, forming part of an electrical installation. Consumers' mains may be overhead, underground or within a structure.
Contractor	A corporation or company who is engaged by Endeavour Energy to do work.
Fall-in Vegetation Hazard	Has the same meaning as ISSC 3 "Guide for the Management of Vegetation in the Vicinity of Electricity Assets" (November 2016). Visually defective vegetation (which is vegetation that is dead, dying and appears structurally unsound as identified from the perspective of the Network Asset as far as it is reasonably practicable to do so), that is outside the minimum Clearing Requirement distances from Electricity

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	Assets and which may require pruning, cutting, or removal to obviate the risk of it falling, dropping, and contacting the assets.
Minimum Vegetation Clearance	The minimum clearance area surrounding an asset which as far as reasonably practicable is kept free of all vegetation in accordance with the requirements of the Vegetation Standard.
Point of Supply	Junction of an electricity distributor's conductors with consumer's mains. A physical break is not required to constitute a junction.
Private Overhead Line	All aerial mains and their supports that extend beyond the point of supply, including all aerial consumer mains and all aerial sub-circuits.
Pole Top and Associated Hardware	The top of electrical poles and towers, associated hardware such as crossarms, insulators and stay wires and attached electrical assets, such as drop-out fuses or air break switches.
Vegetation Standard	Refers to MMI 0013.

4. General Requirements

4.1. Authorisation, accreditation and training

The inspections included in this document must only be carried out by persons with suitable qualifications and certifications in accordance with Endeavour Energy's Authorisation Manual to carry out overhead and ground line inspections.

All flying and aircraft related activities must be completed in accordance with all applicable CASA requirements, all relevant legislation and all related documentation including the Civil Aviation Act (CAA) 1988, the Civil Aviation Safety Regulations (CASR) 1998, and the Civil Aviation Regulations (CAR) 1998.

4.2. Emergency situations and contact arrangements

If a hazardous condition (under normal conditions) is identified that creates an immediate unsafe situation (such as an energised or failed pole) it must be reported immediately to the respective Regional Transmission or Distribution Manager.

If the hazardous condition is related to a customer installation, contact the OLI/GLI support staff.

In an emergency call System Control on 131 003.

4.3. Precautions before commencing any work

The safety precautions and responsibilities outlined in Annexure 1 are to be adhered to prior to commencing work on any part of the Endeavour Energy network.

4.4. Additional rights on bushfire prone land

MMI 0021 details additional rights and obligations Endeavour Energy has when inspecting and identifying defects on Endeavour assets and Private Overhead Lines connected to Endeavour's network in areas designated as bushfire prone land.

4.5. Customer networks

4.5.1. Private overhead lines

PSBI of Private Overhead Lines networks must be conducted up to the 'point of attachment' or 'connection point' at the location of the customers main switchboard. Additional information about responsibility of inspection is contained with MMI 0021. Private Overhead Lines are to be inspected with defects raised and managed in accordance with MMI 0002, and WAE 2039 - *Customer Defect Reporting and Defect Management*.

4.5.2. High voltage customers

PSBI of HVC infrastructure is required up to the stated point of supply. The Customer is responsible for maintenance of the HV metering unit and the electricity network beyond the point of supply, including the metering point pole (if applicable).

The requirements and responsibilities for HVCs are outlined in MMI 0021.

4.6. Pre-summer bushfire inspection requirements

4.6.1. Inspection requirements

The scope of the pre-summer bushfire inspections are electrical assets, overhead lines and supporting structures on the Endeavour Energy network and Private Overhead Lines networks up to the main switchboard, within designated bushfire risk areas as identified by Endeavour Energy.

PSBI associated with vegetation encroachment is to be conducted across all RFS designated BFPL.

4.6.2. Inspection frequency

PSBI associated with vegetation encroachment is to be conducted annually.

Network asset inspections shall be undertaken at frequencies representative of the bushfire risk in the area and the risk-cost value. This means that asset inspection intervals may change depending on quantified risk factors (e.g. fuel loads, land type, land usage, consequences, weather, etc, without limitation). PSBI will be conducted in map areas on the following basis:

1. Map areas with assets requiring annual PSBI,
2. Map areas with assets requiring biennial (once every two years) PSBI, and
3. Map areas that are considered low risk do not require PSBI.

Note: Frequency of PSBI inspections in each map area is subject to change via approvals from the General Manager, Future Grid and Asset Management. Map areas that do not require PSBI shall continue to be inspected under the OLIGLI program (refer MMI 0001).

Bushfire risk value for the assets and map areas shall be based on bushfire consequence modelling (i.e. the Endeavour Energy 's Asset Risk Model - Bushfire Ignition Risk Cost of Consequence - January 2022) as updated from time to time with new inputs.

Bushfire risk area maps, shall be stored in Endeavour Energy's GIS database.

An example of bushfire risk area modelling was completed for PSBI starting in calendar year 2025 in document: Valuing Aerial Asset Inspections, Endeavour Energy, November 2024.

4.6.3. Timeline for inspection

The PSBI period is based on the inspection frequencies and shall consider, in order of priority;

1. Inspections of assets in areas assigned an annual inspection frequency shall be completed prior, but as close as reasonably practicable, to the start of the Bushfire Danger Period,
2. Inspections of assets in areas assigned frequencies greater than annual (i.e. biennial or greater) shall be completed prior, but as close as reasonably practicable, to the assigned frequency interval from its previous inspection,
3. Allowing sufficient time for planning and delivery of the program (including allowances for defect rectification, contingencies and other variables).

The statutory Bushfire Danger Period typically runs from 1 October to 31 March and planning of the PSBI shall be based around these dates. The NSW Rural Fire Service may vary the start and end dates of the Bushfire Danger Period, based on changes in local conditions.

In the event the period is changed, Endeavour Energy's Manager Major Contracts, Asset Performance Manager, and Reliability and Resilience Manager will review available options.

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4.6.4. Network asset inspection requirements

As part of the PSBI, Endeavour Energy's electrical assets and associated hardware located on pole / tower tops of overhead lines within bushfire risk areas are to be inspected. Network asset inspections shall be conducted as per MMI 0002.

Where photographs of the pole / tower top cannot be taken for a section of network due to a no-fly zone (specified by the CAA or due to customer concerns with livestock, etc.) or non-visibility of the pole top from above (due to the vegetation coverage), a ground patrol must conduct the inspection and photograph the affected section of the network.

Qualified line inspectors are required to analyse and categorise the digital photographs of assets based on the defect prioritisation specifications in MMI 0002.

4.6.5. Vegetation inspection requirements

Inspection of vegetation growth around Endeavour Energy Network Assets is also required as part of the PSBI program.

The purpose of vegetation inspections is to identify instances where the clearance distances between conductors and surrounding vegetation fail to meet the minimum requirements of their respective standards.

Vegetation inspections are to be conducted to the limits described in clause 4.5 for Private Overhead Lines and HVCs.

The vegetation requirements for this inspection are contained in MMI 0013.

4.7. Network asset defect management

Network asset defect management principles and priorities are detailed in MMI 0002.

4.8. Vegetation defect management

Minimum vegetation clearances and defect priority classification are outlined in the Vegetation Standard MMI 0013. This standard assigns the appropriate risk in accordance with conductor voltage, conductor type, span length and the relative position of the vegetation encroachment within the span.

4.9. Authorities and responsibilities

General Manager Future Grid & Asset Management has the authority and responsibility for the following:

1. Approving this instruction,
2. Approving any changes to Bushfire risk areas and inspection frequencies.

Head of Asset Planning and Performance has the authority and responsibility for making recommendations to the General Manager Future Grid & Asset Management in respect to this instruction.

Asset Performance Manager is responsible for keeping the content of this instruction up to date.

Manager Major Contracts/Head of Digital & Insights is responsible for implementing the pre-summer bushfire inspections in accordance with this instruction.

General Manager, Safety and Operations has the authority and responsibility to arrange rectification of the defects within the timeframes set out in this standard.

The **Individuals involved in performing the PSBI** will be responsible for:

- meeting the requirements of this instruction.
- working in accordance with local and statutory requirements.

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- upholding a high level of public safety.
- working in accordance with Endeavour Energy's Electrical Safety Rules.

5. Annexure A – Precautions Before Commencing Work

5.1.1. Safety standards

All individuals involved in the PSBI must abide by the Endeavour Energy Safety Rules, and any amendments to these documents, for the duration of the works to be carried out as a result of this instruction.

5.1.2. Worksite hazard and risk assessment and Safe Work Method Statements

Prior to commencing any work on site, a Worksite Hazard and Risk Assessment (FSY 0118) is to be completed. For Endeavour Staff, the Safe Work Method Statements to be used are:

- SWM 1.010 - Overhead and Ground Line Inspection and Audit;
- SWM 1.005 - Patrol of Overhead Mains Inspection
- SWM 6.014 - Removal of Foreign Objects from Conductors & Apparatus

External staff undertaking the PSBI must provide and comply with SWMS that meet the requirements of the Endeavour SWMS listed above.

5.1.3. Duty of care

All individuals involved in the PSBI must display a duty of care to the public, other Endeavour Energy contractors and Endeavour Energy employees, during the course of their work.

If a potential safety issue is identified, the inspector must correct the problem, make the problem safe, or advise the responsible person to repair it at a later date.

5.1.4. Clothing

All individuals involved in the PSBI must be appropriately dressed at all times in accordance with Company Procedure GSY0067 - Personal Protective Equipment.

5.1.5. Tools

All tools and equipment must be kept in reasonable working condition so that they are safe to use at all times. Any tools and equipment that require inspection must be current in their period of inspection and tagged/logged accordingly.

5.1.6. Environment

All noise, waste materials/run off/cleaning solvents, such as water and oil, must be controlled to meet EPA and local council guidelines.

5.1.7. Contact or close proximity inspection of electrical assets

Staff must maintain minimum safe clearance distances as outlined in the Electrical Safety Rules at all times. Before commencing any inspections where physical contact with poles is a possibility, staff must also conduct the following tests, as outlined in MMI 0001:

- Voltage leakage check
- Multimeter check
- High impedance check
- Voltage test

6. Annexure B – Inspection Requirements and Specifications

6.1. Network asset inspection requirements

6.1.1. Network asset photographs

Requirement	Specification
Photography of pole top and associated hardware	High resolution digital full-frame camera with an optical zoom function capable of capturing high quality digital images of network defects. The quality must be of a standard that allows close interrogation of hardware, such as cracks in insulators or individual strands of a conductor.

6.1.2. Network asset inspection deliverables

Requirement	Format
Aerial photographs meet the following requirements: • Minimum pixel size: 25 mega pixels • File name containing pole number (and feeder number if applicable) • Linked to a corresponding pole number • Geo Referenced / Tagged with the following metadata: ○ Latitude / Longitude ○ Date / Time	JPG
Analysis summary with the following requirements: • Latitude of associated asset • Longitude of associated asset • Date of photograph • Time of photograph • Type of defect • Defect prioritisation • Name of inspector who classified defect • Hotlink to photograph	XLSX