WORK INSTRUCTION

# INSTRUCTIONS FOR SAFE TO CLIMB TEST

**Key summary points**

- Any pole or adjacent poles that will have tip loading changed due to activity on the pole being worked on must be examined.
- A Person Conducting a Business or Undertaking (PCBU) must ensure that workers who are authorised to work from Evoenergy poles and structures are trained in work practices that meet the requirements of this work instruction.

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## 1 Scope

This work instruction applies to all staff, contractors and authorised third party workers who have authority to work on Evoenergy power poles. It also applies when Evoenergy workers or Evoenergy contractors work on privately owned power poles when working on behalf of Evoenergy.

Work that will alter the tip loading of a pole must not begin until the pole has been examined and evaluated as safe to climb or to work on. The requirement for an examination shall apply regardless of:

- The type of pole i.e. wood, steel or concrete, fibreglass
- Whether a pole is owned by Evoenergy or not, and
- Whether the work is to be performed from the pole or from a mobile elevating work platform.

Accordingly, before working on any pole, workers must satisfy themselves that it is safe to work on and in no danger of collapsing during the course of work. Where work carried out on one or more poles that will change the loading on poles nearby during the course of the work, these other poles must also be inspected in accordance with this work instruction to make sure they are not in danger of collapse. Where conductors are removed from one or both sides of a pole, the pole or poles that will carry the conductor load during the course of the work must also be inspected.

## 2 Purpose

The purpose of this work instruction is to prescribe the method for carrying out a safe to climb test prior to climbing or working on a pole.

Any pole or adjacent poles that will have tip loading changed, due to activity on the pole being worked on, shall also be examined. Removal of a pole will also have effect on adjacent poles tip loading.

A Person Conducting a Business or Undertaking (PCBU) must ensure that workers are trained in work instructions that meet the requirements of this work instruction.

## 3 Actions and Responsibilities

A Person Conducting a Business or Undertaking (PCBU) or a person in control at a work site must ensure that any poles that will be worked on or where there will be a significant change in pole tip loads including adjacent poles are assessed in accordance with this work instruction. The assessment must include unsupported poles or poles that will become unsupported.

If the person carrying out the test (or members of the work team) is not satisfied that the pole is safe to climb after carrying out the instructions contained within this work instruction, the pole must not be climbed until further investigation is carried out or alternate methods are utilised. This may require a full pole inspection by an authorised Evoenergy Asset Inspector or work may be carried out via other means, e.g. Mobile Elevated Working Platform (MEWP).

If at any time the pole head loading is to be significantly altered through re-tensioning, untying or straightening for example, the person carrying out the work must ensure that the pole is assessed. this assessment shall be based on the work to be performed and the pole loading changes that may occur.

In all instances, safe working practices shall be adopted so that the person (or members of the work team) is not placed in a potentially dangerous situation. The assessment must include the status of adjacent poles if any loads will be transferred to them.

## 4 Identifying Where a Full Pole Inspection is Required

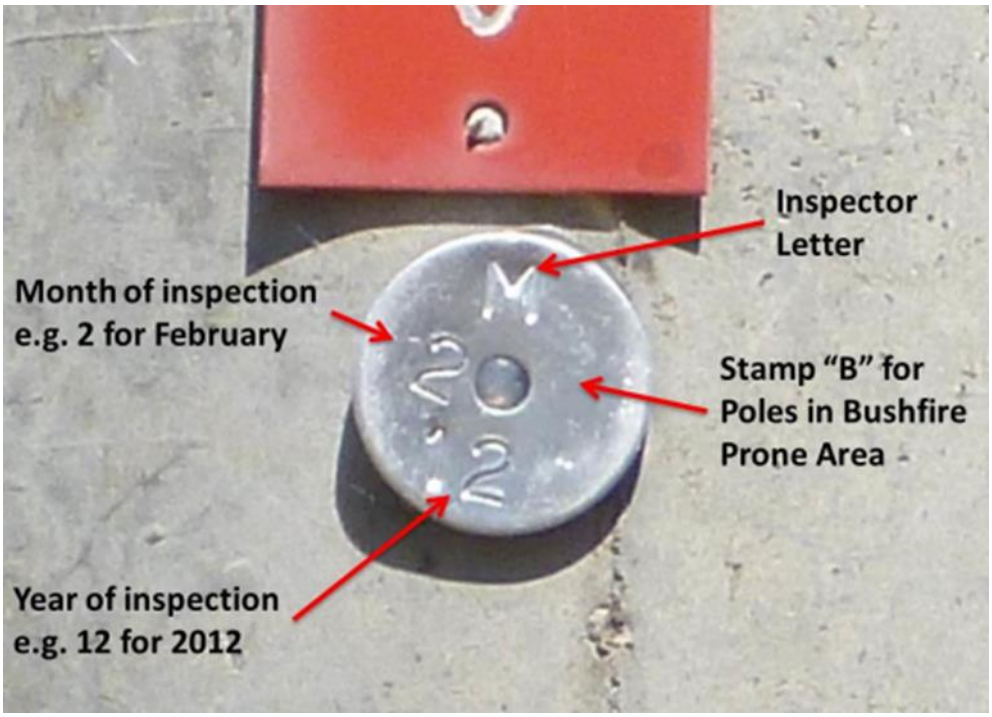
In order for workers to undertake this work instruction, there must be an understanding of when a full pole inspection is required. A full pole inspection should not be confused with a safe to climb test. A full pole inspection involves the below ground and internal inspection of a pole, the measurement of any internal defects, and calculation of residual strength and is conducted on a cyclical basis by an Evoenergy asset inspector. Full pole inspection cycles are 4 years for Bushfire Mitigation zones and 6 years in Urban areas.

Refer to Table 1 for guidance on where a full pole inspection is required prior to climbing a pole.

**Table 1. GUIDANCE ON WHERE A FULL POLE INSPECTION IS REQUIRED.**

| Pole Type | Is Full Pole Inspection Required |
|---|---|
| **Natural Round** | Only if the inspection tag is out of cycle |
| **Creosote** | Only if the inspection tag is out of cycle |
| **Tanalith** | Only if the inspection tag is out of cycle |
| **Concrete/Composite** | No |
| **Steel** | Only if the inspection tag is out of date and the pole is > 12 years old |

**Figure 1. INSPECTION TAG**




When an inspection tag is found to be out of cycle on any pole type with the exception of concrete or fibreglass, a full pole inspection must be conducted by an authorised Evoenergy Asset Inspector before the pole can be determined safe to climb.

## 5 Identifying Where a Pole has been Condemned

Condemned poles are easily identifiable through visual identifiers on the pole itself. The status of poles that are successfully reinforced are changed from “Condemned” to “Conditionally Serviceable” or “Condemned” to “Temporarily Nailed” and recorded in the Evoenergy ArcFM asset register.

| Condition | Identification | Limitation |
|---|---|---|
| **Pole Condemned** | Painted red cross at tag height with tag nailed in centre of cross | Pole not to be climbed |
| **Pole Nailed** | The pole nail | Pole not to be climbed |

## 6 Pole Loading Constraints on Reinforced Poles

All reinforced poles either inspected or reinforced will have an advice plate installed on the pole after inspected or reinforced. The advice plates are defined as:

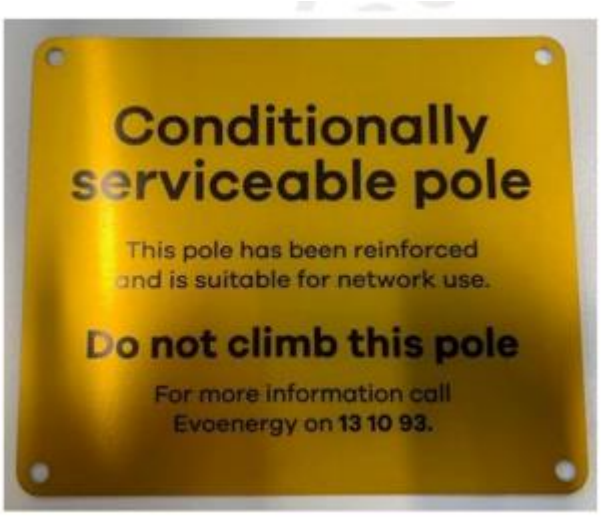
- Conditionally Serviceable Pole
- Temporarily Nailed Pole

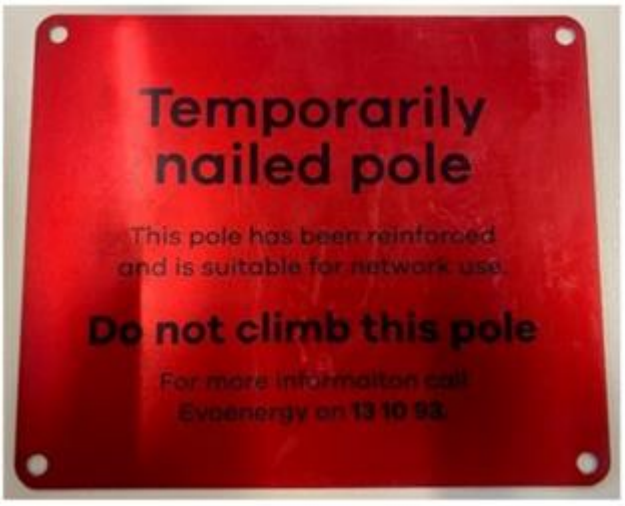
### 6.1 Conditionally Serviceable Pole

The mains loading can be altered on conditionally serviceable poles, however any extra loading such as adding take offs must only be done with a completed engineering assessment and safe work method statement completed by the person with management and control of the works.

### 6.2 Temporarily nailed poles

Temporarily nailed poles cannot have the mains loading altered although it is acceptable to change house services ONLY.



## 7 Carry Out An On Site Risk Assessment

Prior to conducting a safe to climb test, any hazards associated with prerequisite tasks at the worksite shall be identified and assessed with appropriate control measures implemented and documented in accordance with a site specific job risk assessment.

Caution: Any pole tip loading changes to adjacent poles may also cause changes in conductor clearances. Ensure that if any energised conductor clearances will change that it will not come within the flash over distance.

### 7.1 Initial Visual Inspection (Mandatory)

### 7.2 Conductors

- Low conductors
- Uneven sag or inappropriately designed attachments
- Lightning, burn or flash marks
- Integrity of insulators
- Visual signs of electrical leakage (e.g. broken insulators, conductor touching pole or crossarm, dead animals/birds on or near pole etc.)

### 7.3 Pole Structure Soundness

- Condemned & Conditionally Serviceable poles
- Termites
- Visual evidence of decay
- Differences in pole situation (e.g. leaning, bending, slack stays)
- Evidence of ground movement in the vicinity of the pole butt
- Depth, age of pole and last test date
- Structural damage caused by motor vehicle
- Rusting, spalling, discolouration (concrete, steel and fibreglass)
- Visual signs of electrical leakage
- Missing or loose hardware (e.g. broken insulator, conductor touching pole or crossarm)
- Pole foundation condition

### 7.4 Physical Terrain

- Existing traffic conditions
- Changes in traffic conditions
- Sloping or uneven ground
- Pedestrian & vehicular traffic
- Surrounding vegetation
- Obstructions (e.g. carports, garden sheds and fences)

## 8 Electrical Test (Mandatory)

All poles (including private poles) must be visually inspected to ensure that they are safe to approach.

Workers must not touch a pole or structure unless they have performed a Proximity test and a Pole leakage Detection test in accordance with the Low Voltage Cable and Apparatus Testing Manual.

## 9 Notation of Pre-Existing Condition of Pole (Mandatory)

A Person Conducting a Business or Undertaking (PCBU) or a person in control of the work must ensure that condition identification markers such as condemned markings, crosses, and inspection tags are checked.

Where identification markers are not visible or legible, workers must contact Evoenergy to arrange for a full pole inspection to be conducted by an authorised Evoenergy asset inspector.

Private poles may or may not be marked and should be treated with extreme care, as they may not have been subjected to a regular maintenance and inspection regime.

Where a private pole must be climbed in order to complete distribution tasks the poles must be inspected below ground. Workers must arrange for a full pole inspection of the privately owned pole by an authorised Evoenergy asset inspector.

## 10 Above Ground Inspection (Mandatory)

### 10.1 Timber Pole

- Splits
- Knots & checks
- Evidence of termites/Bees
- Degradation
- Vehicle impacts
- Fire damage
- Leaning or bending
- Look for evidence of ground movement in the vicinity of the pole butt

### 10.2 Concrete & Steel poles

- Extent of any rusting
- Extent of spalling
- Unexpected discolouration
- Extent of any damage due to vehicle impacts
- Fire damage
- Presence of bees
- Look for evidence of ground movement in the vicinity of the pole butt

### 10.3 Fibre composite poles

Fibre composite poles are visually inspected above ground line for vehicle or physical damage. Poles showing evidence of significant physical damage must be reported to the Evoenergy Faults and Emergency call centre on 131093.

*Note: Where any of the defects referred to in the above dot points are present, the work team shall arrange for a suitably trained Evoenergy asset inspector to conduct a full pole inspection to determine the condition of the pole through an internal evaluation.*

## 11 Sound Testing the Pole (Mandatory)

### 11.1 Timber Pole

Sound testing is a recognised industry method to assist in the determination of the pole condition. Sound testing is performed by:

- Striking the pole from several directions with a dumpy hammer
- Starting at the base of the pole, as close as possible to ground-line starting in the non-critical axis, sound around the circumference, at approximately 100mm intervals, then upwards around the circumference of the pole, as high as can be conveniently reached whilst listening for changes in the sound the hammer makes on contact with the pole

- A sharp ringing sound indicates the pole is solid
- A dull, soft or hollow sound indicates the presence of a pipe, internal decay or advanced termite attack

### 11.2 Steel poles

Steel poles must be inspected by visually looking for rust around the ground line and by striking it firmly with the flat face of a hammer so as not to damage the protective galvanised coating. The purpose of striking steel poles is to dislodge both internal and external flaking or blistered rust and expose any perforations (holes) in the steel pole. Where rust is found above ground line on steel poles that are to be climbed or worked from, a full pole inspection must be conducted by an Evoenergy asset inspector.

Note: Where sounding indicates the presence of a pipe, internal decay or advanced termite attack, the person in control of the work must notify Evoenergy of the suspect pole through the Faults and Emergency Call Centre. Evoenergy will then schedule an authorised asset inspector to assess the condition of the pole in accordance with the Pole and Line Inspection Manual.

*Note: Where sounding indicates the presence of a pipe, internal decay or advanced termite attack, the person in control of the work must notify Evoenergy of the suspect pole through the Faults and Emergency Call Centre. Evoenergy will then schedule an authorised asset inspector to assess the condition of the pole in accordance with the Pole and Line Inspection Manual.*

## 12 Ladder Bounce Test (Mandatory)

If sounding is okay, conduct a ladder bounce test. A ladder bounce test must be performed by employees prior to climbing a pole. A ladder bounce test is performed by:

- Extending a ladder to as close as possible to 45 degrees up the pole to climbing height, preferably in the critical axis. Proceed to climb the ladder no higher than the third rung and bounce the ladder against the pole to create stress. Listen for timber creaking or other adverse noises or ground movement.

  **Note:** Prior to performing a Ladder Bounce Test, assess whether adjacent spans, if very slack, will clash together during the test and if so, do not proceed with the test until steps are taken to rectify.

## 13 Rope Test (Optional)

Depending on the outcome of the Ladder Bounce & Sound Tests, a Rope Test may then be considered as a further check.

During this test, appropriate action should be taken to ensure co-workers and others are safe from falling objects and other work environment hazards.

The following items should be addressed when performing a rope test on a pole:

- Extend a ladder with rope attached to the top of each stile or head of the ladder as far up the pole as practical.
- Walk the rope around the pole so that the pressure is applied to the pole and not the ladder.
- Apply pressure as close as possible to the head of the pole on the side or in the direction least supported by stays or conductors.
- Two people, located on the opposite side of the pole from the ladder, should pull on the rope or ropes while standing as far as practical from the base of the pole.
- During the test, pressure must be applied progressively or gradually in a vee formation. Avoid aggressive or jerking actions.
- The rope must be long enough to ensure operators are safe if a pole should fail. Signs of failure include excessive movement, bending and splitting.
- Ensure members of the public and workers are kept out of the area during the test.

Pressure is applied as close as possible to the head of the pole by the attachment of a rope, which has been hoisted by an approved operating stick or a ladder to the top of the pole if the Ladder Bounce Test was successful prior to this test occurring. Pulling is to be done by hand only and is to be in the same direction as the critical axis.

*Note: Ensure the rope used is of a sufficient length that should the pole under test fail, it does not cause injury or damage*

## 14 Checks Whilst Climbing the Pole (Mandatory)

Regardless of the method of ascent, the climber must continue inspecting the pole by careful observation during the ascent and continually look for evidence of rot or termites. Any loose pole hardware should be investigated, as it may indicate internal fungal decay or termite damage. If a possible defect is detected, it must be further investigated by sounding with a ballpein hammer, and/or reporting the defect to the Faults and Emergency Call Centre on 131093.

## 15 Continual Monitoring Of The Pole (Mandatory)

Workers working on the pole should be aware that the load conditions at the pole top are constantly changing due to a number of factors e.g. wind, movement of climbers, etc. Therefore, the following points should be monitored by workers both up the pole and on the ground.

- Noise
- Excessive movement of pole or ladder
- Excessive vibration
- Pole footing movement
- Weather changes
- Changed traffic conditions

## 16 Reporting Of Suspect Poles (Mandatory)

Suspect poles must be reported immediately to Faults and Emergency call centre on 131093.

## 17 Definitions

**Authorised person** means a person who has been authorised by Evoenergy to work on or near their network.

**Competent** means having been assessed as having the skills, knowledge and attributes required to perform a specific task.

**Critical axis** means the direction through a pole where it has the maximum tension and compression.

forces when the pole is subject to its maximum design loadings

**Evoenergy Asset Inspector** means a worker who has completed the National Unit of Competency for Inspect and test poles at and below ground level and is current in the Evoenergy Electrical Safety Rules training.

**Full pole assessment** means a pole inspection that is conducted by an Evoenergy asset inspector and involves the cyclical below ground and internal inspection of the pole, the measurement of any internal defects, and calculation of residual strength. Pole inspection cycles are 4 years for Bushfire Mitigation zones and 6 years in Urban areas.

**Worker** means a person who carries out work in any capacity for a PCBU, and includes employees, contractors and sub-contractors.

**Non-critical axis** is the area of the pole where the net load is minimised.

**Person Conducting a Business or Undertaking (PCBU)** may be an individual person (e.g. sole trader), or an organisation that engages workers to undertake work for them.

**Pole** means the timber, concrete or steel structure which supports the electricity network excluding towers.

**Private pole** means a pole (generally timber) that is of a similar type and size to that used by the electricity network These poles should be treated in a different manner as they may not have been subjected to a specific routine inspection and maintenance regime.

**Third Party** means are businesses or undertakings that is not engaged by or contractually obligated to Evoenergy but is required to work on Evoenergy poles.

# 18 References

## 18.1 Internal References

- Evoenergy Accreditation and Authorisation work instruction
- Evoenergy Electrical Safety Rules
- Job Risk Assessment Work instruction
- Low Voltage Cable and Apparatus Testing manual
- Pole and Line Inspection Manual

## 18.2 External References

- AS/NZS 3000: Electrical Installations (Wiring Rules).
- AS/NZS 7000: Overhead Line Design
- Utilities Act 2000
- Joint Use of Poles HB 87

# 19 Version control

| Version | Details | Updated |
|---|---|---|
| 1.0 | Initial document | B. Spence. |
| 1.1 | Incorporated into the Lineworker's Manual | Electrical Work Practices. |
| 2.0 | Developed into standalone work instruction to provide instruction to internal workers and external third parties. Sounding of pole upgraded from optional to mandatory Based on risk Inclusion of inspection tag information and allowable loadings for conditionally serviceable and temporarily nailed poles for the information of the end user including third parties. | Electrical Work Practices. |

# 20 Document control

| Document owner | Document custodian | Published date | Review date |
|---|---|---|---|
| Group Manager Strategy and Operations | Electrical Works Practices and Learning Manager | 20/03/2025 | 20/03/2028 |