

Response to Submissions

Draft Report: The Condition of Power Poles in South West Victoria

Background

Energy Safe Victoria (ESV) undertook an investigation into the state of wooden power poles in the South West region of Victoria in early 2019. The findings of this study were released in a 'Draft Report: The Condition of Power Poles in South West Victoria' on 31 May 2019 with a call for comment from the community and other stakeholders.

The issue of power pole safety and that of network distribution assets more generally is one of much sensitivity in this region which, in March 2018, suffered a bushfire caused by failure of a power pole.

Losses to farm infrastructure, livestock and farm livelihoods were considerable. As well, the fire caused, and continues to cause, significant emotional trauma to those affected.

Accepting public feedback on our investigation is one important step towards restoring community confidence in the safety of the distribution network. Three submissions were received; this document specifically addresses the concerns raised by those contributors.

A list of submissions can be found in Appendix A. ESV would like to thank those members of the community who took the time to assess the Draft Report and submit their comments.

ESV is working to improve its community engagement as it progresses its further investigation into Powercor's management of power poles and will move to ensure community engagement is permanently embedded in its practice in future.

Amendments to the Draft Report

ESV has made changes to the Draft Report to better define the term 'unassisted pole failures' and clarify the number of poles tested at Grafton as part of the investigation.

Response to other matters raised in the submissions

ESV has grouped these responses and categorised them as:

1. Matters for clarification and regulatory process
2. Concerns relating to the regulatory regime
3. ESV conclusions and logic
4. Next phase of investigation.

ESV's response to each of these groupings follows here. It is important to note that, in responding, ESV is providing clarification regarding the matters raised.

Matters for clarification and regulatory process

Comment was made on ESV's motivation for publishing the further draft report; the reason for seeking input from the community; and, the speed with which ESV acted after the Garvoc Fire.

Other observations included:

- non-routine inspection of the 19,000 poles was conducted using Powercor's current practice of the hammer test and WoodScan
- the practice of double staking and its implications for the strategic maintenance and replacement of poles
- benchmarking of pole failures.

One submission also commented that 15 poles were removed from Sparrows and Craven spur lines for destructive testing according to Powercor and the media, but that ESV's report stated that 13 poles were removed.

ESV's response to matters for clarification and regulatory process

ESV's investigation reports and subsequent consultations

ESV commonly publishes reports of its investigations on its website. Sometimes these investigations have been undertaken because ESV is concerned that there are serious safety matters or contravention of legislative requirements, or because the community requires further assurance.

When a report invites submissions, ESV publishes them in accordance with its regulatory policies and guidelines.

This approach is consistent with the public consultation processes used by other regulators, where input and feedback is sought from a wide range of stakeholders.

ESV's response to the Garvoc Fire

ESV attended the incident site the day after the incident and immediately commenced its investigation. This investigation continued in the months after the fires and included forensic testing, inspections and engineering analysis.

The Garvoc Fire Report of July 2018 stated that: "*As a result of the Garvoc Fire (The Sisters) investigation, ESV will now as well as confirming the current condition of **other poles in the Terang area by auditing poles on the same feeder or in the same area as Pole 4.***"

As a result, in September 2018, ESV first inspected 202 poles as part of a targeted sample audit (of particular classes of wooden staked and non-staked poles) across the Terang area, which included inspection of Sparrow 16 and many poles in the immediate area including along Sisters – Garvoc Rd, Occupation Lane and Ellerslie – Sisters Rd.

ESV confirms that the Powercor inspection practice for the non-routine inspection of 19,000 poles involved:

- visual inspection and hammer test, and
- where the hammer test detected a 'hollow', the pole would be drilled and measured using traditional techniques.

WoodScan was used where the above inspection deemed a pole unserviceable.

ESV confirms that pole failure at the top of a stake is extremely rare as noted in the ESV Garvoc report.

ESV agrees that the next stage of its investigation will need to take into account the staking of poles and its impact on the timing of replacement.

However, ESV does not agree with the statement that double staking of poles is an out-dated practice. While double staking of poles is now an uncommon practice, it is still in use across the industry in particular circumstances.

ESV can confirm that Powercor has predicted 2,500 pole replacements per annum following condition assessment, due to the changes in its inspection regime. This projection does not include replacement of the 5,271 double staked poles on the Powercor network.

Measures of performance

One submission drew conclusions and comparisons on the benchmarks for pole failure (*'poles inspected and identified for replacement before they become unsafe are not the same as poles that fail and fall to ground'*) with which ESV does not agree.

The industry does measure and report performance comparatively by the number of failures per 10,000 poles. However, while one failure in 10,000 poles is referred to as a target by some Australian distribution businesses, it is not an industry benchmark.

Grafton destructive testing

ESV confirms that a total of 15 poles were removed from service from the Sparrows and Craven spur lines in the South West region.

ESV engineers observed the destructive testing of 14 of these 15 poles at Grafton and assessed the results. Thirteen (13) poles passed testing, one (1) pole test was excluded due to damage sustained in transit, and one (1) pole failed the testing.

Concerns relating to the regulatory regime

Submissions reiterated observations from the Victorian Bushfire Royal Commission that ESV must have more technical analytical capacity to allow greater oversight of electricity distribution businesses.

Comment was also made that ESV, as an independent regulator, should not allow Powercor to change its inspection practice without ESV approval.

Other comments included references to the desire for "repercussions" and to directing Powercor to comply with its statutory general duty or to make things safer.

Observations were made in relation to the quarantining of poles removed from Craven and Sparrows spur lines for destructive testing and about the ownership of the report into destructive testing at Grafton.

Observations were made around the veracity and reliability of inspection methods including:

- Dig and drill method
- Hammer test
- Non-Destructive Testing (NDT)
- Lean of poles.

Comment was made in relation to Bushfire Risk Mapping and that the low bushfire risk area (LBRA) inspection intervals are less frequent than hazardous bushfire risk area (HBRA).

Comment was made on compliance with Australian Standards and a view that distribution businesses should have to make all assets conform to current standards.

It was also noted in submissions that there is a lack of transparency of distribution business standards and procedures.

ESV's response to concerns relating to the regulatory regime

The Regulator's capacity and resources

Since 2009 ESV's resources directed to electricity infrastructure, data and analytics has grown sevenfold (from four to 28 staff), with a budgetary increase of \$5.07M annually.

ESV continues to expand its capability, particularly with regard to the asset management practices of electricity networks. The Minister has recently approved a further increase in electricity industry levies of 13% compounded over each of the next two financial years to 2021, which will take the staff total to 30 – an increase of 750% since 2009.

The safety regime

It is important to recognise that the Safety Acts that ESV administers are not predominantly prescriptive (which would lend themselves to strict compliance and possibly strict liability offences¹). The ESV draft report notes that the electricity infrastructure safety regime is a process-based regulatory regime that utilises a mix of principle, performance and outcome based regulatory approaches.

The nature of this regime reflects the fact that safety risks are complex, geographically diverse, have significant consequences (regardless of frequency), and often require tailored solutions for an energy and pipeline industry that is approximately \$50B in size.

Deciding the balance of prescription and outcome in legislation is a matter of policy and is determined by Government. Policy settings ultimately reflect the balance adopted between economic and safety considerations, incentives and the allocation of risks between the state and industry.

Under the existing regulatory regime ESV requires a safety proposition from a distribution business first and, once accepted, ESV holds the distribution business to account as seen recently with the recent prosecution of Powercor for Electric Line Clearance and Bushfire Mitigation Plan breaches.

Following acceptance of the relevant distribution business' plans, ESV monitors key measures, and undertakes audits and inspections, both of their systems and in the field. It is most unlikely that a process-based regulatory regime will ever be able to prescribe in sufficient detail all distribution business activities conducted as part of its general duties.

ESV's report also notes that under a process-based regulatory regime the distribution business's safety proposition contained in its Electricity Safety Management Scheme (ESMS) and Bushfire Mitigation Plan (BMP) provides the key commitments and obligations to meet its duty under the Electricity Safety Act 1998 (the Act) to minimise risk "as far as practicable", but they do not and cannot eliminate risk entirely.

Under this regime not all changes to every distribution business process or procedure require the ESMS or BMP to be amended and submitted to ESV for approval. However, distribution businesses do send many changes to ESV for review irrespective of any legal requirement as this is good regulatory practice.

The regulatory regime does not require the regulator to approve every change to an inspection regime. The minimum inspection frequency is defined in the regulations.

Other changes made by distribution businesses reflect their statutory responsibility to design, maintain and operate their systems, as far as practicable, safely. Thus, there is a statutory obligation on a distribution business to continually assess the efficacy of its policies and procedures and not wait for the regulator to direct them.

Where ESV's powers to direct are used, this is generally in response to emergency situations or an imminently dangerous or a foreseeable safety incident occurring.

¹ An example of this is the prescribed clearance distances in the Electricity Safety (Electric Line Clearance) Regulations.

ESV's powers to direct Powercor to take a specific corrective action must therefore rely on evidence that a systemic issue exists and it has not been dealt with.

In this situation, ESV will invite or require a distribution business to submit its own plan to deal with an issue and then assess the plan's merits and veracity before requiring it to be incorporated in a BMP or ESMS. This is the purpose of ESV's ongoing investigation into how Powercor manages its poles.

As a matter of law, a failure to meet a general duty is something courts will make judgement on after an event and if legal proceedings are commenced. It is not possible to direct conformance with a general duty.

Where there are other statutory breaches being considered ESV is not able to provide a running commentary on these matters until a decision is made to either issue, and lay charges or take other enforcement action.

Inspection methods and approaches

The 'dig and drill' inspection method has been used around the world for approximately 40 years and, with appropriate safety factors applied, has resulted in very low failure rates of poles in Australia.

ESV inspected more than 1,200 poles and, using the hammer test, selected over 100 poles (20 of which were selected for not containing a hollow using the hammer test) for further testing with Sonic Topography scanning technology. All 20 poles identified as not containing a 'hollow' using the hammer test were tested using scanning technology and were verified as not containing hollows.

The scanning technology tests on the other 80+ poles that had previously indicated the presence of hollows using the hammer test, found some poles did not contain hollows. These results show that the hammer test, when undertaken correctly, delivered conservative results (i.e. some poles will fail the test even though there is no hollow).

ESV can confirm that phase one of Powercor's research into pole scanning technologies was completed by 31 May 2019 and the research project is moving into phase two.

Technology is evolving rapidly and there are many alternative techniques in development for pole inspection around the world; many of these have been trialled in Victoria. Woodscan remains in use to complement the traditional testing methods.

However, ESV is unaware of any single technology that is a viable alternative to directly replace the dig and drill method, but we will continue to monitor and investigate technology innovation in pole inspection techniques.

ESV agrees that poles with a substantial lean can lead to, and be a factor in, incidents in certain situations. The current standards allow for a maximum pole lean of ten degrees; ESV's investigations found no poles with leans exceeding, or near, ten degrees.

Bushfire Mapping

The last review of hazardous and low bushfire risk areas (HBRA / LBRA) concluded in 2013 (with the review cycle concluding and releasing the map layers according to the four year cycle in 2014). The next review cycle did not commence due to the cessation of the funding.

For clarity, generally LBRA applies to urban areas and HBRA to rural areas. The vast majority of changes involve the re-categorisation of HBRA as LBRA due to urban growth.

Therefore the delay in reviewing the areas has generally resulted in more areas remaining as HBRA and thus subject to more frequent inspection and higher maintenance standards than had the review occurred according to the previous cycle and released the updated map layers in 2018.

The inspection of vegetation along the River Murray area that resulted in the prosecution of Powercor was specifically undertaken because ESV was aware changed farming practices and was irrespective of the HBRA/LBRA boundary review.

The regulatory regime requires that distribution businesses comply with relevant standards for new assets and equipment, or where they vary from a relevant standard, they must demonstrate that it achieves an equivalent or better safety outcome.

However, no standards are retrospectively applied. No jurisdiction or industry expects assets installed historically – to a previous standard – to be upgraded to meet an amended standard when that standard is updated unless a time-critical systemic safety issue is identified. For example, the retro fitting of airbags is not mandated for older vehicles, despite being a requirement for new ones.

Distribution businesses are required to publish their Bushfire Mitigation Plans; however the regulatory regime does not require businesses to publish their processes and procedures that may be referenced in their plans.

As the industry regulator, ESV assesses and audits their processes and procedures in order to approve their plan. ESV does not have the power to mandate a requirement for businesses to publish all their processes and procedures.

ESV's conclusions and logic

Comment was made that ESV found Powercor's power pole inspection and maintenance process to be fit for purpose but that the investigation was not due to be completed until December 2019.

ESV response

The ESV draft report summarises the findings of ESV's investigation into the current state of poles in the South West and whether the inspection and maintenance process is fit for purpose in assessing the current condition of poles now.

It is ESV's subsequent report that will assess whether Powercor's asset management practice is sustainable and whether enough poles are being planned to be replaced to deliver safety in the longer term. The next report will address the question of sufficient resource and capacity being available to service any future replacement programme.

ESV confirms that all poles identified for replacement (irrespective of classification code, e.g. P2) arising from the Powercor 19,000 pole non-routine inspection are to be replaced by 30 November 2019 as reported to ESV.

ESV agrees that the changes made by Powercor may have been decided before the non-routine inspections were complete. However, these changes only strengthened the regime and would thus improve safety outcomes, therefore ESV had no cause to object.

The changes are the result of a risk-based business decision made by Powercor, informed by its analysis of preliminary inspection data.

Where proposed changes may adversely affect safety outcomes, ESV requires justification from the business concerned. In this instance ESV investigations concluded that the Powercor inspection changes are warranted to better identify deteriorating poles before they fail.

Next phase of investigation

A number of the observations and concerns expressed in the submissions will be addressed in the next phase of ESV's investigation. These include that pole replacement rates for the next year are too low and that, going forward, replacement rates should be made public.

A submission also commented on the pole (# 11) that failed destructive testing.

ESV's response

ESV has undertaken a number of actions to date, and will continue according to the plan outlined in the review report.

The ESV report states that of the 19,000 non-routine pole inspections, 1.3% of poles will require replacement within the next year.

It is not appropriate to assume 1.3% of the entire wooden pole population will require replacement within a year as pole conditions varies significantly by region based on the species volumes and on local environmental conditions.

The electricity safety regime does not require inspection of the entire Powercor network (339,147 poles²) annually. Poles are inspected every 30 months (2.5 years) in Hazardous Bushfire Risk Areas (HBRA), and every 60 months (five years) in Low Bushfire Risk Areas (LBRA) as required by bushfire mitigation regulations.

It is in the next phase of the investigation and review that ESV will assess whether Powercor's asset management practice will lead to enough poles being replaced to deliver sustainable safety in the long term.

ESV's strategy, as documented in its forthcoming Corporate Plan (expected to be published in August 2019), notes that sustainable asset management practices to deliver safety outcomes is a key area of focus for ESV over the next three years.

ESV will assess whether Powercor's asset management practice will replace enough poles to deliver sustainable safety outcomes in the long term and report this to the public.

ESV has already concluded from its investigation to date that some classes of wooden poles are deteriorating more quickly than expected. However, further work is planned as part of ESV's forward investigation into degradation rates and ESV will make its findings publicly available.

It is important to note that the pole (#11) that failed the destructive test, failed at a different location to where it was inspected when in service.

ESV will assess the effectiveness of the inspection practice to reliably identify the location of greatest deterioration inside poles in the next phase of the investigation and make this report available to the public.

In conclusion

There is no doubt that local knowledge is of importance in optimising community safety in the business of electricity distribution.

The submissions to ESV's Draft Report on The Condition of Power Poles in South West Victoria have led ESV to amend the report and, hopefully, provide a greater understanding of what is a quite technical area.

Our role in ensuring safety is only enhanced by engagement with all our stakeholders, community especially.

ESV genuinely appreciates the time and consideration given by those community members who made contributions to the Draft Report.

² Australian Energy Regulator (AER) / Powercor - 2018 – Category Analysis RIN

Appendix A: List of submissions received

- [Response to ESV Draft Report – J Porter](#)
- [Response to ESV Draft Report – J Kenna](#)
- [Response to ESV Draft Report – Powercor](#)