

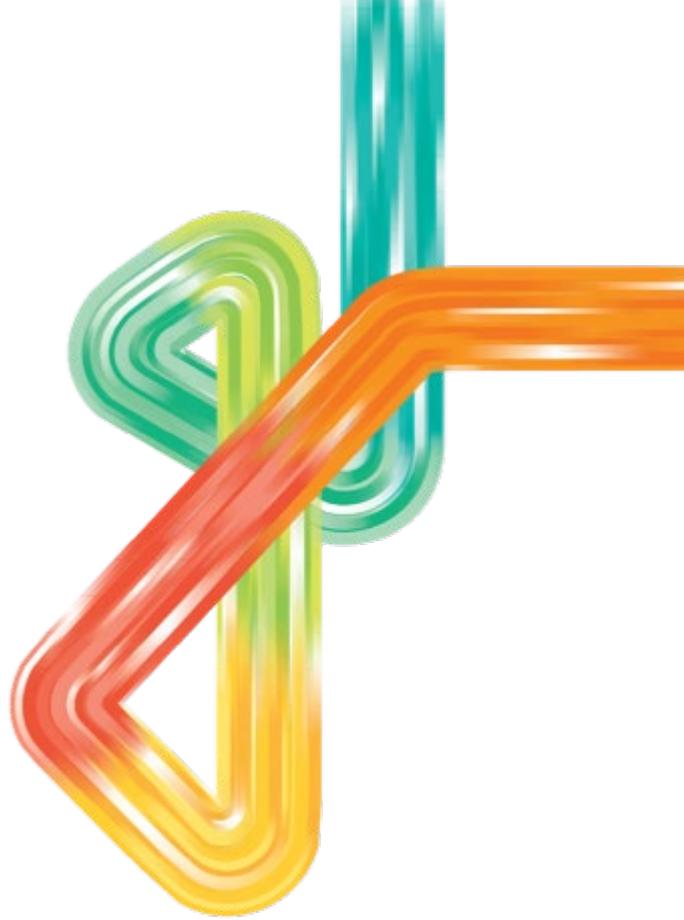


WALGA Central Country Zone - PTF presentation



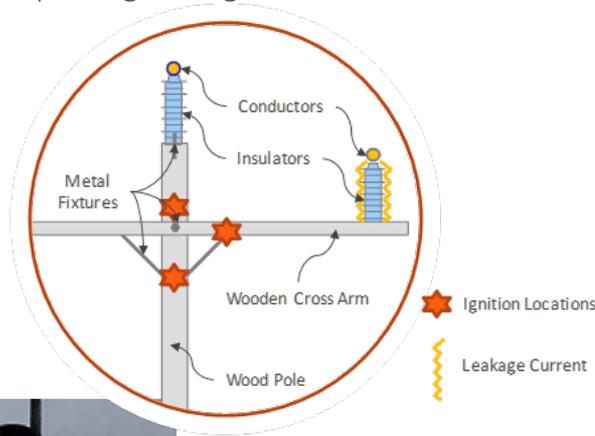
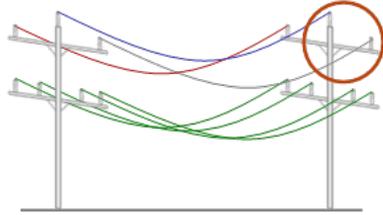
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What is a Pole Top Fire (PTF)?

Overview - PTFs are caused by leakage current passing through and/or over insulators to the wood pole structure (Crossarm and Wood Poles)



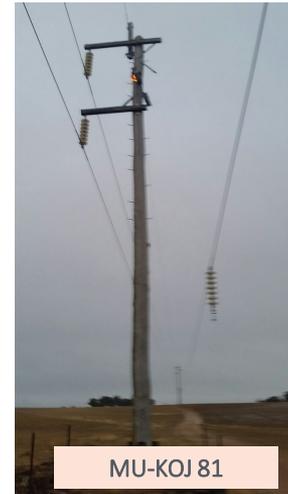
Light rain after dry spell



Metro



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PTF Influencing factors

Western Power's network has approximately >65,000 km of distribution (Dx) overhead (OH) network with >600,000 Dx wood poles including 87% of high voltage (HV) network presenting intrinsic PTF risk.

The factors that predominantly influence the likelihood of PTFs include:

- Pollution source – proximity to coast, industrial pollution, agricultural pollution
- Feeder voltage – 22 kV, 33 kV
- Insulator type – Glass, Porcelain, Cycloaliphatic and Ethyl Vinyl Acetate (EVA)
- Age group – >20 years
- Status & age of silicone application on insulator surface – Silicone treated / not treated, <5 years / 5-8 years / >8 years



PTF Performance History

Western Power have predominately installed Porcelain and Glass historically. Western Power currently installs EVA (introduced circa 2000s) and silicone rubber insulators (introduced circa 2018).

Table below provides a summary PTF performance over a 3 year period:

HV Insulator Type	PTF Rate (normalised)	19/20	20/21	21/22	Total
Porcelain/Glass - Silicone age <8 years	0.01%	29	12	20	61
Porcelain/Glass -silicone age >8 years or not treated with silicone	0.08%	307	180	208	695
EVA	0.04%	57	21	58	136
Cycloaliphatic	0.02%	77	29	48	154
Other	NA	19	4	40	63
Grand Total	NA	489	246	374	1,109

PTF Strategy

Silicone treatment strategy

- Proactively apply silicone treatment on all glass, porcelain and cycloaliphatic insulators prioritised by risk.
- After a 3 year pause of live line ground based silicone application due to a safety incident, WP has recently successfully trialled live line washing and siliconing utilising helicopters and intends to silicon around 10,000 structures per annum through this solution once fully implemented.

Replacement strategy

- Proactively replace targeted insulators at risk of PTFs where silicone treatment cannot be applied.
- Proactively replace targeted insulators that have reached end of life and replace insulators as part of replacing a pole or crossarm.



PTF Strategy

Customer engagement strategy

- Provide locally focussed communication to the customers to manage expectations by communicating potential PTFs and possible long response times, to enable customers to prepare themselves appropriately.

Alternative mitigation trials

Investigate alternative PTF technology mitigation solutions to augment existing toolkit. Examples of trials indented to commence within a year include :

- Trial of a solution to bond the HV insulators to the running earthwire.
- Trial of Live-line silicone treatment of insulators without washing.
- Trial of early fault detection devices to detect early signs of leakage currents.

Note that these solutions will only be implemented by WP if they are proven acceptable at the conclusion of the trial.

Questions



Asset Performance



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