

Minimising the risk of bushfires with Fusesaver[®]

The world's fastest MV outdoor vacuum circuit breaker

High-risk bushfire days are primarily determined by the temperature, humidity, prevailing wind conditions and the amount of dry fuel on the ground. With just a spark from an electrical arc a bushfire can be ignited, affecting landscapes and lives for years. On extreme risk bushfire days, it is critical to eliminate any probability of faults on the electrical network igniting a fire.

Fact

Between 1967 and 2013, major Australian bushfires have resulted in over 8,000 injuries and 433 fatalities with a cost of approximately A\$4.7 billion².

Findings of a study¹ show that overhead distribution network operators can significantly reduce the risk of bushfires by implementing these actions:

1. Eliminate protective devices that expel molten material during operation

Traditional fuses should be removed from high risk bushfire zones as arc by-products can start fires. Fusesaver[®] provides a cost effective alternative with fully encapsulated vacuum interrupter switching fully eliminating this risk.

2. Utilise ultra-fast fault clearing circuit breakers to reduce electrical arc hazards

Arc duration is a significant variable in the probability of an electrical fault causing ignition of a fire. With clearing times in the range of 30–50ms traditional reclosers are too slow to prevent an arc causing fire ignition. The Fusesaver[®] is unique in having a clearing time in as little as 10ms (or one half-cycle) and with this speed the probability approaches zero.

3. Provide remote access to disable reclosing on high fire risk days

To enable remote monitoring and operating capabilities, the Fusesaver[®] can be conveniently accessed from the control room.

A Remote Control Unit (RCU) allows for easy SCADA integration and gives the ability to change protection settings and to disable reclosing without the need to be on-site.

4. Synchronise operation to ensure compatibility with resonant earthing schemes

Single phase protective devices, such as fuses, can cause instabilities on networks using resonant earthing schemes. Fusesaver[®] provides a synchronised three-phase switching operation for both protection and manual switching activities.

Save Money and reduce risk

With a lower capital cost than traditional reclosers, compact design, fast installation time and an unrivalled fault clearing time, the Fusesaver[®] represents a quantum leap in reclosing technology. Whilst minimising the risk of bushfires it supports utilities to:

- Keep down insurance premiums
- Avoid litigations
- Protect the distribution network
- Increase network reliability.

Key benefits



Minimising the risk of bushfires



Increased network reliability



Improved operator safety



Future proof asset



Fast ROI

To find out more, contact us via fusesaver.au@siemens.com

¹ Conducted for Energy Safe Victoria by HRL Technology Pty Ltd, "Probability of Bushfire Ignition from Electric Arc Faults" D. Coldham, A. Czerwinski and T Marxsen.

² 2013 Australian dollars, including deaths and injuries but excluding most indirect losses, Source: Ladds M, Keating A, Handmer J and Magee L (2017), "How much do disasters cost? A comparison of disaster cost estimates in Australia".