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Ingenuity for life



Minimizing the risk of wildfires

With Fusesaver - the world's fastest medium-voltage circuit breaker

usa.siemens.com/fusesaver

An example from Australia

High-risk wildfire 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 wildfire can be ignited, affecting landscapes and lives for years.

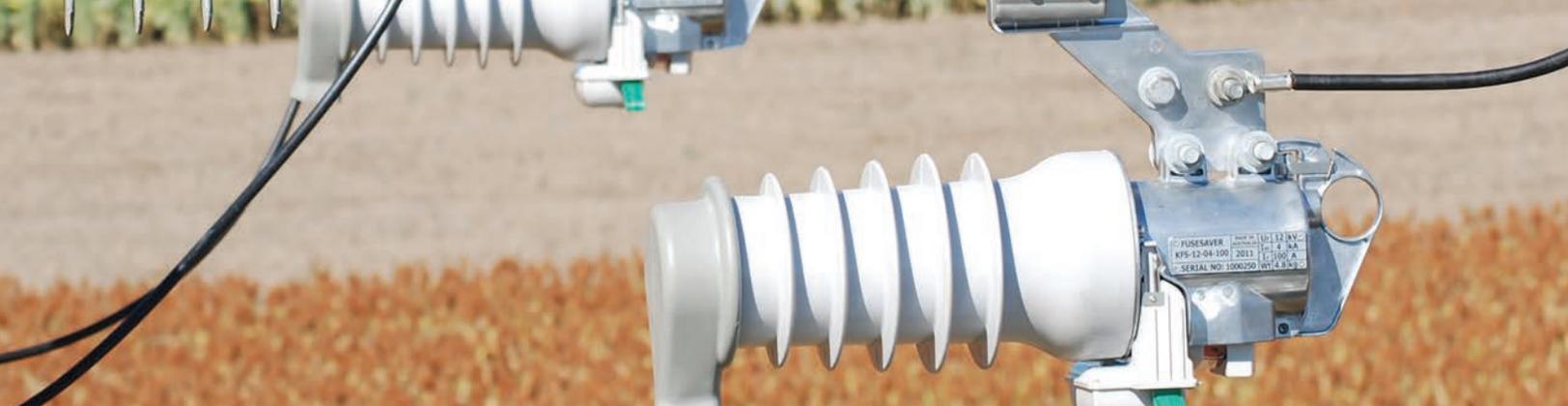
On extreme risk wildfire days, it is critical to eliminate any probability of faults on the electrical network igniting a fire.

Fact: Between 1967 and 2013, major Australian wildfires have resulted in over 8,000 injuries and 433 fatalities with a cost of approximately AUS \$4.7 billion² (USD \$3.4 billion).

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

- 1. Eliminate protective devices that expel molten material during operation.**

Traditional fuses should be removed from high-risk wildfire zones as arc by-products can start fires. Fusesaver provides a cost-effective alternative with encapsulated vacuum interrupter switching that mitigates this risk.



2. Utilize 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 30–50 ms, 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 10 ms (or one half-cycle).

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. Synchronize operation to ensure compatibility with resonant grounding schemes.

Single-phase protective devices, such as fuses, can cause instabilities on networks using resonant grounding schemes. Fusesaver provides a synchronized 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 leap in reclosing technology.

While minimising the risk of wildfires, it supports utilities to:

- Minimize insurance premiums
- Avoid litigation
- Protect the distribution network
- Increase network reliability.

Key benefits:



Minimizing the risk of wildfires



Increased network reliability



Improved operator safety



Future proof asset



Fast ROI

Footnotes:

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".

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Siemens Industry
99 Bolton Sullivan Drive
Heber Springs, Arkansas 72543

For more information, please contact our
Customer Support Center.
Phone: +1 (800) 333-7421

www.usa.siemens.com/fusesaver

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