10 March 2021

PAL/CP Ref: SAC21_019

Mr. Ian Burgwin
General Manager
Electrical Safety and Technical Regulation
Energy Safe Victoria
PO Box 262
Collins St West VIC 8007

Dear Ian,

RE: RAPID EARTH FAULT CURRENT LIMITER FUNCTIONAL PERFORMANCE REVIEW RECOMMENDATIONS

Thank you for your letter of 12 February 2021 seeking Powercor's response to three of the recommendations (C, E and F) that concern distribution businesses from the *Rapid Earth Fault Current Limiter Functional Performance* report published on ESV's website.

The recommendations are:

C	It is recommended that distributors ensure that they hold sufficient strategic spares to ensure that REFCLs can be returned to service in the event of a component failure. In addition, distributors should ensure that the impact on REFCL performance as a result of a component failure is minimised. In this regard, the distributors should continue to explore ways to better integrate the REFCL and provide back-up protection which utilises the Arc Suppression Coil in the event that the REFCL controller fails.
E	It is recommended that the distributors explore methods to better predict damping values accurately, and remove the reliance on the bounded range currently adopted to mitigate the risk to the program and to maintaining compliance.
F	It is recommended that the distributors continue to collaborate with REFCL suppliers to develop fast voltage reduction and reduced energy released at the fault site with the objective of further reducing bushfire risk. The distributors are required to demonstrate their REFCL device can be operated at Required Capacity however if the REFCL can be configured and operated differently to deliver an improved risk reduction at the fault site then this should be explored.

In responding to the recommendations, Powercor has considered the intent of the recommendations, rather than the specifics of each recommendation.

Recommendation C – Support in principle
Powercor supports the intent of maximising REFCL availability to provide the best level of bushfire safety protection. Powercor has appropriate strategic plans and operational procedures in place as part of its overall asset management strategy which contributes to maximising REFCL availability. Powercor's Bushfire Mitigation Plan outlines its REFCL operating modes and how they are deployed, including performance caveats on *required capacity*. REFCL operating modes and the integration of REFCL into Powercor's backup protection functions, including utilising the arc suppression coil, continue to be refined.

Recommendation E – Do not support
Powercor has completed installing REFCLs at sixteen zone substations so far, with fourteen accepted as *complying substations* by ESV. Damping prediction has not impacted our ability to deliver the first two tranches of the program. Powercor agrees with ESV's assessment that:

- this recommendation relates to delivery and economic risks that are a matter for distribution businesses (DBs) to manage; and
- Once a REFCL is installed, network damping can be measured directly.

Powercor does not see any value at this stage of the program in developing a model for accurately determining network damping before a REFCL is installed.

Recommendation F – Support in principle
Powercor strongly supports the objective of reducing bushfire risk. Powercor outlines its REFCL operating modes in its Bushfire Mitigation Plan, which is submitted to ESV annually. Powercor remains an active participant in the Victorian Electricity Supply Industry's REFCL Technical Working Group, where issues such as compliance settings versus operational settings are discussed collaboratively. Significant changes to REFCL operation will necessitate the involvement of REFCL suppliers. As Powercor's experience with REFCL networks matures, Powercor will continue to target the maximum level of bushfire safety performance as far as practicable.

On a related note, Powercor continues to review *all* system protection schemes with an objective of finding the optimum protection regimes to reduce bushfire risk. The most recent example was the VESI working group outcomes from 2020, resulting in further enhancements to conventional protection scheme settings on SWER and 22kV networks on TFB days.

If you require further information please contact Andrew Bailey, Manager REFCL Program Delivery on

Yours sincerely,

Mark Clarke
General Manager Electricity Networks