

1 August 2017

Ms Michelle Groves
 Chief Executive Officer
 Australian Energy Regulator
 GPO Box 520
 Melbourne VIC 3001

Email: michelle.groves@aer.gov.au

Dear Ms Groves

HIGH-VOLTAGE CUSTOMER ISOLATION FOR REFCL NETWORKS

Following the Black Saturday bushfires in 2009, the Victorian Government established the Victorian Bushfire Royal Commission (VBRC) to consider how bushfires can be better prevented and managed in the future. On 1 May 2016, in response to the recommendations of the VBRC, the Victorian Government passed legislation that requires Powercor to install Rapid Earth Fault Current Limiters (REFCLs) at specific locations in our network.

We have supported the Victorian Government's approach to reduce the risk of bushfires in Victoria, and continue to work with the Department of Environment, Land, Water and Planning (DELWP) and Energy Safe Victoria (ESV) to achieve these outcomes. Operating a REFCL, however, will result in voltage variations in excess of that permitted under the Electricity Distribution Code (the Code). An extract of the relevant table is provided below:

STANDARD NOMINAL VOLTAGE VARIATIONS					
Voltage Level in kV	Voltage Range for Time Periods			Impulse Voltage	DURATION
	Steady State	Less than 1 minute	Less than 10 seconds		
< 1.0	+10% -6%	+14% -10%	Phase to Earth +50%-100% Phase to Phase +20%-100%	6 kV peak	MAGNITUDE
1-6.6	± 6%	± 10%	Phase to Earth +80%-100% Phase to Phase +20%-100%	60 kV peak	
11	(± 10%)			95 kV peak	MAGNITUDE
22	Rural Areas)			150 kV peak	
66	± 10%	± 15%	Phase to Earth +50%-100% Phase to Phase +20%-100%	325 kV peak	

- *Magnitude.* The operation of a REFCL can increase phase-to-earth voltage to +90% of nominal voltage; and

REGISTERED OFFICE

40 Market Street, Melbourne VIC Australia Telephone: (03) 9683 4444 Facsimile: (03) 9683 4499
 Address all Correspondence to: Locked Bag 14090 Melbourne VIC 8001
 CitiPower Pty Ltd ABN 76 064 651 056 General Enquiries 1300 301 101 www.citipowercor.com.au
 Powercor Australia Ltd ABN 89 064 651 109 General Enquiries 13 22 06 www.powercor.com.au

- *Duration.* Stress testing undertaken during commissioning of REFCLs increases phase-to-earth voltages of greater than 10% per cent for longer than 10 seconds. During operation, fault confirmation algorithms will also result in voltage variations of +90% for longer than 10 seconds.

Without timely amendments to the Code, the installation of isolation substations remains the only compliant solution to maintain supply to a HV customer and prevent them from experiencing over-voltages as a result of a REFCL. Customer hardening works would not resolve or abdicate our compliance obligations under the Code.

Review of the Electricity Distribution Code

On 28 June 2017, the Essential Services Commission of Victoria (**ESCV**) provided a letter to the AER outlining the process for its forthcoming review of the Code. This letter is consistent with the timeline set out by the ESCV at its recent distributor forum, whereby the ESCV indicated it will publish a consultation paper for its Code review in the second quarter of 2018.

ESCV have not indicated when it expects to conclude its review, and it is clear from the ESCV's letter to the AER that there is no commitment to a particular outcome from its review. Instead, the ESCV has flagged its intention to consult with all relevant stakeholders prior to making any changes to the Code. That is, there is no certainty the ESCV's review will result in material amendments to the permitted voltage variations set out in the Code.

The Marxsen Report on high-voltage customers

On 23 June 2017, ESV published a report undertaken by Dr Tony Marxsen regarding HV customers on REFCL protected networks (**Marxsen Report**). In regard to the installation of isolation substations, the Marxsen Report explicitly stated that it did not consider, amongst other things, liability and regulatory considerations, alignment with REFCL rollout timelines and compliance with the Code. As noted in our response to ESV (and provided to the AER), the primary driver for selecting isolation substations is to ensure compliance with the Code.

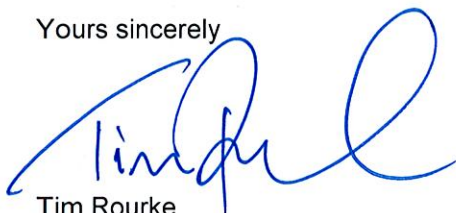
Timeline extensions

We recognise the civil penalties framework introduced by the Government includes an exemption process where there is evidence of circumstances outside of our control that would delay the installation of REFCLs. The Minister's letter, however, does not provide any certainty that such an exemption would be granted. In any event, as the driver of our isolation substations is the existing Code requirements, an extension to our installation timeframe presupposes the outcome of the ESCV's review.

Any such delays may also result in our tranche one REFCLs not being in service during the 2019–2020 summer period, with the associated bushfire risk to the community.

Should you have any queries regarding this letter, please do not hesitate to contact Renate Vogt on 03 9683 4602, or rvogt@powercor.com.au.

Yours sincerely



Tim Rourke
Chief Executive Officer