



15 June 2018

Mr Chris Pattas
General Manager
Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001

Via email: AERInquiry@aer.gov.au

Dear Mr Pattas

Powercor contingent project application— REFCL program: tranche two

Thank you for the opportunity to provide a submission on our contingent project application in relation to the installation of our second tranche of Rapid Earth Fault Current Limiters (**REFCLs**).

As the Australian Energy Regulator (**AER**) is aware, we are required to install REFCLs on our network to comply with the amendments to the Electricity Safety (Bushfire Mitigation) Regulations 2013 (**Amended Bushfire Mitigation Regulations**) which were implemented on 1 May 2016.

Our application set out our approach to engaging with our high voltage (**HV**) customers who are directly connected to the impacted 22kV network to assist them in understanding the implications of the Amended Bushfire Mitigation Regulations on their electricity installation. Our application also included costs to provide a solution for each HV customer site to ensure it is compatible with the operation of a REFCL.

We submitted our application on 20 April 2018. At that point in time, we remained liable under the Distribution Code for adverse effects to HV customers as a consequence of the REFCL operation. We acknowledged in our application that the Essential Services Commission (**ESCV**) had commenced a review of the Distribution Code.

ESCV draft decision

On 22 May 2018, the ESCV published its draft decision in relation to its review of voltage standards to allow the operation of the REFCLs under the Distribution Code. In its draft decision, the ESCV proposes to:

- remove the phase-to-earth voltage variation limits from the Distribution Code when a REFCL operates
- place the onus and costs on HV customers to harden their assets to withstand the operation of a REFCL
- require distributors to compensate HV customers if the phase-to-phase voltage variation limits are exceeded during REFCL operation.

The ESCV proposes for the amended Distribution Code to take effect from one week after its final decision in August 2018.

Impact of the ESCV draft decision on our application

Should the ESCV draft decision be confirmed in its final decision, then we consider that the following amendments should be made to our contingent project application:

- removal of all HV customer isolating substation costs and Distribution Code variation payments
- addition of costs to install Automatic Circuit Reclosers (**ACRs**) at all HV customer sites

- addition of costs to install neutral displacement protection coordination equipment for generator HV customers
- addition of costs for Powercor to independently verify third party reports that HV customers are appropriately hardened or able to be isolated from our network during the operation of a REFCL.

First, our application included costs to install 24 isolation substations at 23 sites, as well as payments to two HV customers to harden their network in exchange for their agreement to a change in our obligations under the Distribution Code. These costs can be removed from our application.

Second, we will need to install ACRs at all HV customer connection points to ensure that we can isolate the customer and protect our network, particularly in the event of a cross-country fault. The ACRs will also ensure that we can maintain phase-to-phase voltages across our network.

Our proposed costs to install the ACRs are consistent with the ACR replacement costs contained within our contingent project application.

Third, we need to install neutral displacement protection coordination equipment for our HV customers that have generation facilities. This relates to three sites in tranche two.

When generators connect to our network, we require them to install neutral displacement protection equipment. This scheme is designed to protect the 22kV network from earth faults supplied by the generator in the event of an inadvertent islanding event. For example, if there is a fault on the line and Powercor's protection operates resulting in the circuit breaker tripping the feeder, their generators may continue to operate in an islanded mode with the earth fault continuing to exist. Neutral displacement protection detects this, however the protection will maloperate every time the REFCL operates, as experienced by HV customers connected to other distributor's REFCL zone substations. As we require the customer to install this protection, we will provide a signal to co-ordinate their protection with the REFCL operation.

The neutral displacement protection co-ordination will require a protection relay, batteries and communications equipment which can all be housed in a cubicle. Our costs for these are based on similar interconnection works at small generation sites.

Finally, we have included costs for consulting engineers to assess each HV customer's hardening works as well as stakeholder engagement costs for each HV customer to support them in understanding REFCL technology and the impact on them and their assets.

Please find attached the updated cost models which contain these revised costs.

Changes to inflation

On 25 May 2018, the AER revoked and substituted our distribution determination for the 2016–2020 regulatory control period. This follows the identification of a mathematical calculation error relating to the inflation rate. We have used the amended inflation rate in the updated cost models.

We welcome the opportunity to discuss this submission with the AER. Please contact Elizabeth Carlile on 03 9683 4886 or ecarlile@powercor.com.au if you have any questions.

Yours sincerely



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CitiPower, Powercor & United Energy