VICTORIAN PLANNING CRITERIA CHANGE

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AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Important Notice

Purpose

AEMO has prepared this document to provide information about a change in AEMO's planning criteria, as at the date of publication.

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What is changing?

AEMO is changing its Victorian electricity planning criteria in response to the changes in demand growth, and the recent decrease in the Value of Customer Reliability (VCR)[1]. This change allows use of five minute short-term ratings as a long term solution to manage thermal overloads on critical transmission lines in Victoria. This ensures that the network will, over the long term, minimise the total delivered cost of electricity to customers.

Overview of short term ratings

Power is delivered to customers through an interconnected transmission network. If a single section of the network fails, power will automatically be diverted to other parts of the network. This sudden increase in power to the other parts of the network can cause transmission lines to overheat. AEMO has a responsibility to operate the transmission network securely, meaning that the failure of any network section cannot cause the remaining parts of the network to become overheated. Power flows may have to be decreased through curtailing customer load even before any failure occurs, to avoid the network overheating after a failure.

Transmission lines can withstand high power flows for short periods of time before overheating; the higher the power flow prior to failure, the faster the line overheats. More power can be allowed through lines if there is a fast and reliable way of bringing line temperatures back down to secure operating levels immediately following a failure.

Automatic control schemes can reduce line temperature within five minutes of a failure occurring by automatically disconnecting customer load. This allows AEMO to increase the allowable power flow on the line during high demand periods by about 10%, reducing the need to curtail customer load before any failure occurs. This higher allowable power flow limit is called the five minute short-term rating, as at that limit, the line would overheat within five minutes following a failure.

Why is this happening now?

This change of planning criteria has been brought about by AEMO's assessment that in the current environment of slower demand growth, opportunities exist for AEMO to use the five minute short-term ratings to defer investments and keep costs low for customers.

The capability provided by the five minute short-term rating has not routinely been considered in long-term planning (over the ten year horizon). Five minute ratings have historically been reserved for use under extreme operating conditions, or to cover the risk that demand growth was higher than expected. During periods of unexpectedly strong demand growth, five minute short-term ratings could be used to increase line flow limits at peak demand times, as an interim measure until network enhancements were completed. With slower demand growth, the need to reserve five minute short-term ratings for this purpose has diminished. There is more time to plan and respond to variations in demand forecasts without putting customer load at risk.

In addition, AEMO's 2014 VCR review[1] identified that, in dollar terms, the willingness of customers to pay for reliable supply of electricity has reduced. Compared to previous VCR assessments, the current value has decreased by approximately 40%. This has reduced the economic justification for network or non-network investments such as line upgrades or new transmission lines.

Who will be impacted?

To date, five minute short-term ratings have been implemented for customers around Bendigo, Deer Park, Kerang, Malvern and Red Cliffs – where demand growth is forecast to exceed the transmission lines' existing ratings. Any new automatic control schemes, enabling use of five minute short-term ratings to manage periods of extremely high demand, will be implemented on a case-by-case basis.

[1] For more information on the Value of Customer Reliability, refer to http://www.aemo.com.au/Electricity/Planning/Value-of-Customer-Reliability-review

What other factors will AEMO consider?

This planning approach provides AEMO with more options to cost-effectively manage emerging limitations on the Victorian network, as long as demand growth remains moderate and peak demand periods remain short in duration, as projected in AEMO's Connection Point Forecasts for Victoria.

Where five minute short-term ratings have been implemented for customers, unexpectedly high demand growth or unexpected changes to the network could result in short periods of supply interruptions. AEMO will manage this risk by closely monitoring line flows in these areas and proposing network or non-network investment if required.

AEMO may review this planning criteria if the network environment changes or if further changes to the VCR are identified.