

Investigation of alleged breaches of the Electricity Industry Participation Code 2010 by Transpower New Zealand Limited as the grid owner

On 12 April 2018, Transpower New Zealand Limited as the grid owner self-reported to the Authority that it believed on reasonable grounds that it had breached clause 2(1)(b) of Technical Code A of Schedule 8.3 of the Electricity Industry Participation Code 2010.

Under regulation 12 of the Electricity Industry (Enforcement) Regulations 2010, on 28 June 2018, the Authority appointed Peter Wakefield as the investigator to investigate the alleged breaches.

Under regulation 16, the investigator must promptly notify the industry participant alleged to have breached the Code of the allegations that it is being investigated. On 2 July 2018, the investigator gave the grid owner such notice.

Under regulation 17, at the same time as the investigator sends any notice under regulation 16, the investigator must publicise the matter under investigation, including the content of the notice given under that regulation. The investigator is hereby publicising the matter under investigation, and a copy of the notice given under regulation 16 is attached.

Any participant who considers that it is affected by the matter being investigated, and who wishes to become a party to this investigation, should notify the investigator within 10 working days after publication of this notice.

The investigator's contact details are:

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NOTICE UNDER REGULATION 16 OF THE ELECTRICITY INDUSTRY (ENFORCEMENT) REGULATIONS 2010

Date:	2 July 2018
Addressee:	Transpower New Zealand Limited as the grid owner
Subject:	The grid owner failed to ensure that it operated the HVDC within the limits of the asset capability statement (ACS) that it had provided to the system operator.
Investigator:	Peter Wakefield , Senior Investigator, peter.wakefield@ea.govt.nz (appointed investigator under regulation 12 of the Electricity Industry (Enforcement) Regulations 2010).
Notifying industry participant:	Transpower New Zealand Limited as the grid owner
Clause allegedly breached:	<p>Clause 2(1)(b) of Technical Code A of Schedule 8.3. This clause requires asset owners to ensure their assets, in the manner in which they are designed and operated, are capable of being operated within the limits stated in the ACSs provided to the system operator.</p> <p>The grid owner is alleged to have breached clause 2(1)(b) of Technical Code A of Schedule 8.3 when it failed to ensure that the HVDC operated within the limits of the ACS it had provided the system operator.</p>
Circumstances of alleged breach	<p>In November 2016, the grid owner implemented a change in the HVDC control system to increase the short time overload capability of Pole 2 to 700 MW. This change required Pole 2 to be limited to 1,200 A¹ pre-event to enable a 15 minute post event overload limit of 2,000 A if Pole 3 tripped.</p> <p>The HVDC link can be switched to a reduced voltage mode² of operation to assist the system operator manage high voltages in the AC network. When reduced voltage mode is selected on either Pole 2 or Pole 3, the single cable current limit is automatically set to 4,000 A. Once reduced voltage mode operation is no longer required, normal voltage mode is selected. The grid owner then manually resets the single cable current limit to its normal value of 1,200 A.</p> <p>In the HVDC SCADA system, the grid owner can set the current as either:</p> <ul style="list-style-type: none">a) a single cable current limit introduced in November 2016 (normal dispatchable maximum transfer); or

¹ 1,200 A pre-event allows for a maximum transfer of 420 MW. 2,000 A is the short time overload capability and allows for a transfer of 700 MW.

² Normal voltage mode is 350 kV and reduced voltage mode is 250 kV.

- b) an absolute current limit for each pole used for limiting transfer in all circumstances.

On 12 August 2017, the grid owner switched the HVDC from reduced voltage to normal voltage. Inadvertently, the grid owner applied 1,200 amps to the Pole 2 absolute current limit setting instead of the single cable current limit setting.

On 3 April 2018, the grid owner discovered the error and immediately applied the correct single cable setting.

The impact of the breach was the system operator relied on the overload limits in the ACS. As a result, at times when the HVDC was transferring north, the system operator did not procure sufficient reserves to cover the actual risk of Pole 3. For approximately 1,400 trading periods between August 2017 and April 2018, the power system was placed at risk as a result of the system operator purchasing insufficient reserves. If Pole 3 had tripped, Pole 2 would not have been able to deliver the expected 15 minute overload capability of 700 MW.

Date and time of alleged breach:

From 12 August 2017 to 3 April 2018

Please note, under regulation 16 of the Regulations, you are obliged to respond to this allegation, in writing, to the investigator within 10 working days of receipt of this notice (unless the investigator allows, in writing, a longer period).

Please provide your response by return email to the investigator.

Your response should include:

Whether you believe you have breached the Code;

Whether there is another provision you consider more accurately describes the nature of the event;

A full explanation of the circumstances surrounding the alleged breach;

Identification of any information provided in your response that you consider confidential and should not be included in the investigator's report under regulation 19 (regulation 15(2)).