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# Trip of Armidale-Sapphire 8E 330 kV line at Armidale end only on 5 July 2021

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**October 2021**

Reviewable Operating Incident Report under the  
National Electricity Rules

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# Important notice

## PURPOSE

AEMO has prepared this report in accordance with clause 4.8.15(c) of the National Electricity Rules, using information available as at the date of publication, unless otherwise specified.

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## CONTACT

If you have any questions or comments in relation to this report, please contact AEMO at [system.incident@aemo.com.au](mailto:system.incident@aemo.com.au).

The NEM operates on Australian Eastern Standard Time (AEST). All times in this report are in AEST.

# Abbreviations

<b>Abbreviation</b>	<b>Term</b>
<b>AEMO</b>	Australian Energy Market Operator
<b>AEMC</b>	Australian Energy Market Commission
<b>AEST</b>	Australian Eastern Standard Time
<b>CB</b>	Circuit Breaker
<b>kV</b>	Kilovolt
<b>NEM</b>	National Electricity Market
<b>NER</b>	National Electricity Rules

# Incident review

This reviewable operating incident<sup>1</sup> report is prepared in accordance with clause 4.8.15(c) of the National Electricity Rules (NER). It has been prepared using information provided by TransGrid<sup>2</sup> and from AEMO systems.

**Table 1 Summary of event**

	Details
<b>Reviewable operating incident type</b>	Non-credible contingency event impacting critical transmission elements.
<b>Incident details</b>	This report relates to a reviewable operating incident that occurred on 5 July 2021 in New South Wales. The incident involved the opening of Armidale – Sapphire 8E 330 kilovolt (kV) line at Armidale end only.
<b>Incident classification</b>	Other causes – human error.
<b>Generation impact</b>	Nil
<b>Customer load impact</b>	Nil
<b>Pre-incident conditions</b>	Immediately prior to the event, the Sapphire wind farm was generating around 25 MW and Queensland – New South Wales interconnector was exporting around 1200 MW to New South Wales.
<b>Incident key events</b>	At 0847 hrs on 5 July 2021, the Armidale – Sapphire 8E 330 kV line opened at Armidale end only. The line opening at one end only is not as per design and is considered a non-credible event. The Armidale-Sapphire 8E 330 kV line returned to service at 0848 hrs on 5 July 2021.
<b>Incident cause</b>	TransGrid’s post-incident investigation confirmed the cause of opening of the Armidale – Sapphire WF 8E 330 kV line at the Armidale end as a procedural error.
<b>Power system response (facilities and services)</b>	At 0847 hrs on 5 July 2021, the Armidale – Sapphire WF 8E 330 kV line tripped at the Armidale end only while TransGrid protection technicians were working on site. The technicians had installed temporary protective measures that were inadequate. The site personnel had accidentally shorted out Circuit Breaker (CB) 8E2 Blue Phase trip link to earth. This resulted in the Blue phase pole opening, initiating a pole-discrepancy that opened all phases of the circuit breaker at the Armidale end. The Armidale – Sapphire 8E 330 kV line returned to service at 0848 hrs on 5 July 2021.
<b>Rectification</b>	TransGrid advised AEMO that the work on site was stopped immediately to investigate the incident. The CB 8E2 was closed and protective measures were reviewed and improved prior to the work resuming. TransGrid advised AEMO that they reviewed the procedures for working on in-service panels and found that procedures were correct. The cause of this incident was human error in implementing the procedure.
<b>Power system security</b>	The power system remained in a secure operating state throughout this incident.

<sup>1</sup> Reviewable operating incidents are defined by NER clause 4.8.15(a) and the Australian Energy Market Commission (AEMC) Reliability Panel Guidelines for Identifying Reviewable Operating Incidents.

<sup>2</sup> TransGrid is the transmission network service provider in New South Wales.

	Details
<b>Reclassification</b>	<p>AEMO assessed whether to reclassify this incident as a credible contingency event<sup>3</sup>.</p> <p>The cause of this non credible contingency was not known to AEMO at the time of the event. As such, AEMO considered the single end trip of the Armidale – Sapphire WF 8E 330 kV line was reasonably possible to reoccur and reclassified it as a credible contingency event.</p> <p>At 1054 hrs on 05 July 2021 TransGrid advised AEMO that a reoccurrence of the trip is not reasonably possible. AEMO then responded correctly and cancelled the reclassification of this event as a credible contingency.</p>
<b>Market information</b>	<p>For this incident, AEMO issued the following market notices (all market notices for this incident were issued in accordance with NER requirements):</p> <ul style="list-style-type: none"> <li>• At 0951 hrs on 5 July 2021, AEMO issued Market Notice 87893 to advise of the non-credible contingency event.</li> <li>• At 1048 hrs on 5 July 2021, AEMO issued Market Notice 87894 to advise that the single end trip of the Armidale – Sapphire WF 8E 330 kV line was reclassified as a credible contingency.</li> <li>• At 1054 hrs on 5 July 2021, AEMO issued Market Notice 87895 to advise on the cancellation of the reclassification of this event as a credible contingency.</li> </ul>
<b>Recommendations</b>	Nil

<sup>3</sup> AEMO is required to assess whether or not to reclassify a non-credible contingency event as a credible contingency event – NER clause 4.2.3A(c) – and to report how the reclassification criteria were applied – NER clause 4.8.15(ca).