

Trip of Newport Power Station D 220 kV No. 1 busbar on 16 November 2022

May 2023

Reviewable Operating Incident
Report under the National
Electricity Rules





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.

Disclaimer

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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.

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



Abbreviations

Abbreviation	Term
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
BLTS	Brooklyn Terminal Station
FBTS	Fishermans Bend Terminal Station
kV	kilovolt/s
NEM	National Electricity Market
NER	National Electricity Rules
NPSD	Newport Power Station D
TNSP	Transmission Network Service Provider

Incident review

This reviewable operating incident¹ 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 AusNet², EnergyAustralia Ecogen Pty Ltd (EAE)³ and from AEMO systems.

Table 1 Summary of event

	Details
Reviewable operating incident type	Non-credible contingency event impacting critical transmission elements.
Incident details	This report relates to a reviewable operating incident ⁴ that occurred on 16 November 2022 in Victoria. The incident involved trip of the Newport Power Station D (NPSD) 220 (kilovolt) kV No. 1 busbar, which offloaded the Brooklyn Terminal Station (BLTS) – NPSD 220 kV transmission line at the NPSD end only, and left the Fishermans Bend – NPSD 220 kV line radially supplying NPSD No. 2 busbar.
Incident classification	Other causes – human error.
Generation impact	No generation was lost as a result of this incident.
Customer load impact	No load was lost as a result of this incident.
Pre-incident conditions	Prior to the event, the Newport Power Station generator was isolated via the 220 kV circuit breakers (see Figure 1). Contractors representing EAE were on site testing the Newport Power Station auxiliary transformer No. 1 protection.
Incident key events	<ol style="list-style-type: none"> At 1049 hrs on 16 November 2022 the NPSD 220 kV No. 1 busbar tripped, which offloaded the BLTS – NPSD 220 kV transmission line at the NPSD end only (see Figure 2). At 1106 hrs AusNet advised AEMO that testing staff had inadvertently caused the trip while working on Newport auxiliary transformer No. 1 protection. At 1109 hrs the NPSD 220 kV No. 1 busbar and the BLTS – NPSD 220 kV transmission line were returned to service.
Incident cause	Post incident investigation has concluded that at 1049 hrs on 16 November 2022, a contractor representing EAE was concluding testing of the Newport auxiliary transformer No. 1 protection. The contractor failed to check that the relay had been reset prior to closing the trip links. This resulted in a trip command being unintentionally sent to the upstream 220 kV busbar protection, which subsequently tripped the Newport 220 kV No. 1 busbar.
Power system response (facilities and services)	There were no other material impacts on the broader power system, load, or generation.
Rectification	EAE has reminded its contractor of the need to check relays are in a suitable operating state before restoring isolations and returning relays to operational service. In addition, EAE is revising its procedures and work orders to further highlight the requirement to establish sufficient isolations for all planned work and that protection relays are reset prior to closing trip links. This update will ensure that the isolation of trip links is recognised as a key part of the sequence of steps followed by all staff working on EAE assets.
Power system security	The power system remained in a secure operating state throughout this incident and the Frequency Operating Standard ⁵ was met for this incident.

¹ Reviewable operating incidents are defined by NER clause 4.8.15(a) and the AEMC Reliability Panel Guidelines for Identifying Reviewable Operating Incidents.

² AusNet is the Declared Transmission System Operator for Victoria.

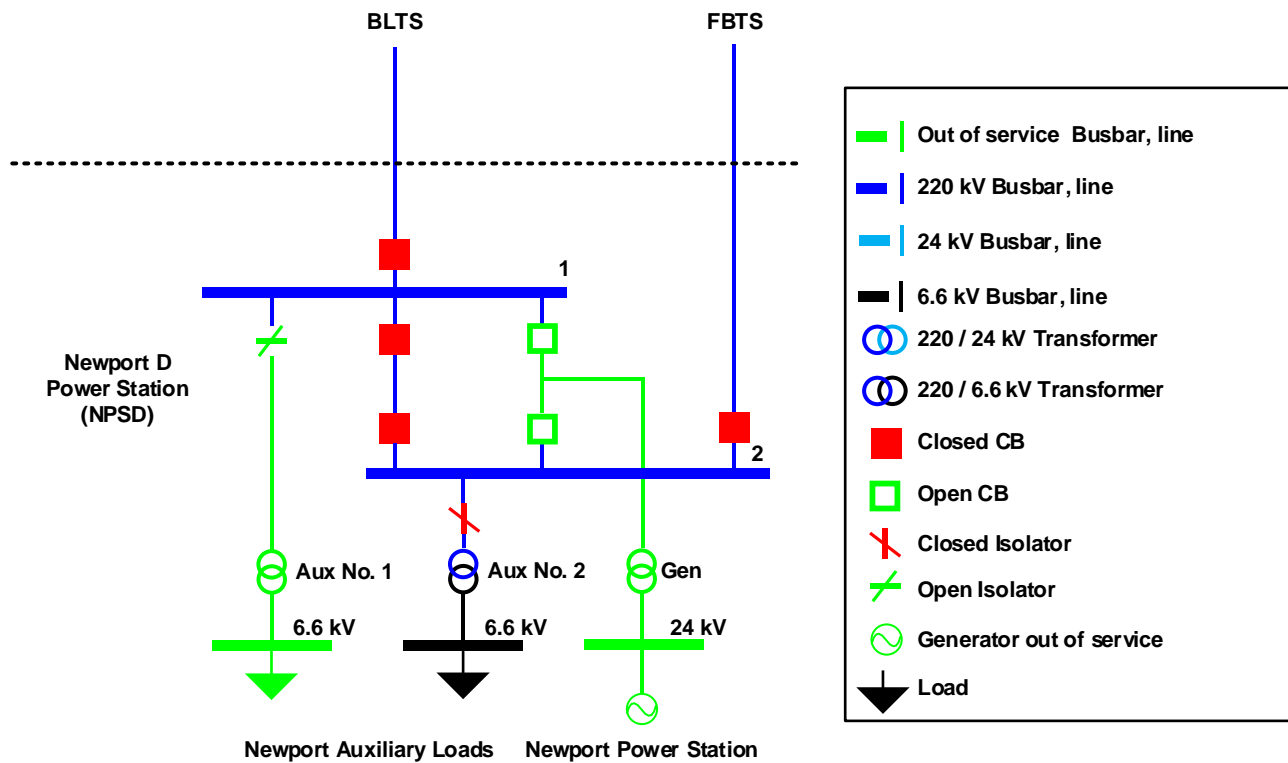
³ EnergyAustralia Ecogen Pty Ltd is the registered participant for Newport Power Station.

⁴ See NER clause 4.8.15(a)(1)(i), as the event relates to a non-credible contingency event; and the AEMC Reliability Panel Guidelines for Identifying Reviewable Operating Incidents.

⁵ Frequency Operating Standard, effective 1 January 2020, available at <https://www.aemc.gov.au/media/87484>.

Details	
Reclassification	AEMO assessed whether to reclassify this incident as a credible contingency event ⁶ . The cause of this incident was identified and rectified by AusNet and EAE prior to returning the equipment to service and AEMO was satisfied that another occurrence of this event was unlikely under the current circumstances. Therefore, AEMO correctly identified that reclassification was not required.
Market information	For this incident, AEMO issued the following market notice (issued in accordance with NER requirements): <ul style="list-style-type: none"> • AEMO issued Market Notice 103279 at 1145 hrs on 16 November 2022 (approximately 50 minutes after the event).
Recommendations	<ol style="list-style-type: none"> 1. AEMO plans to discuss the findings from this event (and other similar events involving human error) at the Power System Security Working Group by Q2 2023. 2. EAE to complete the revision of its procedures and work orders to further highlight the requirement establish sufficient isolations for all planned work and that protection relays are reset prior to closing trip links. This update will ensure that the isolation procedures are recognised as a key part of the sequence of steps followed by all staff working on EAE assets.

Figure 1 Pre-incident diagram – Newport Power Station D



⁶ 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).

Figure 2 Post-incident diagram – Newport Power Station D

