Review of Power System Reclassifications – 1 May 2023 to 31 October 2023

January 2024

A report for the National Electricity Market

Important notice

Purpose

AEMO has prepared this report on its power system reclassification decisions in the National Electricity Market for the period 1 May 2023 to 31 October 2023 in accordance with clause 4.2.3A(i) of the National Electricity Rules.

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Contents

Tables

Figures

1 Introduction

This report sets out AEMO's reasons for decisions to reclassify non-credible contingency events as credible contingency events under clause 4.2.3A(g) of the National Electricity Rules (NER).

AEMO is required by NER 4.2.3A(i) to report on reclassification decisions every six months. This report covers the period from 1 May 2023 to 31 October 2023 (reporting period). The report includes:

1. An explanation of how AEMO applied the reclassification criteria for each reclassification decision;
2. AEMO's appraisal of:
   (i) the appropriateness and effectiveness of the reclassification criteria and the measures implemented to maintain power system security as a result of reclassification decisions;
   (ii) any need to review and amend the reclassification criteria before the next review under NER 4.2.3B(b); and
3. AEMO's analysis of reclassification trends during the relevant period.

This document uses terms defined in the NER, with the same meanings.

References to times in this report, unless otherwise specified, are to Australian Eastern Standard Time (AEST).

2 Overview

There were a total of 178 reclassifications in this reporting period, compared to 217 during the previous winter reporting period (1 May 2022 to 31 October 2022).

The total number of reclassifications was also lower than the historical average (of 258 since 2018) for the winter period.

AEMO considers that all reclassifications in this reporting period were appropriately determined in accordance with the reclassification criteria in AEMO's Power System Security Guidelines SO_OP_3715[1], for the relevant abnormal conditions.

During the reporting period, there was one day where conditions for a protected event were met in South Australia (7 June 2023).

AEMO notified Market Participants, via Market Notices (MNs)[2], of the reasons for reclassifying each of these non-credible contingency events.

[1] AEMO, Power System Security Guidelines. Power system operating procedures are available at https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/system-operations/power-system-operation/power-system-operating-procedures.

[2] Market Notices are issued through the Market Management System. They are updated in real time by AEMO to notify market participants of events that have an impact on the market. Market Notices are also published on AEMO's website at https://www.aemo.com.au/Electricity/National–Electricity–Market–NEM/Market–notices–and–events.

3 AEMO's role

In general terms, the power system is operated such that it will remain in a satisfactory operating state[3] following the loss of a single major transmission or generation element. These events are defined as credible contingency events[4], being[5]:

- *the failure or removal from operational service of plant; or*
- *a sudden and unplanned change to the level of output, consumption or power flow of plant*,

the *occurrence of which AEMO considers to be reasonably possible in the surrounding circumstances, including the technical envelope* of the power system.

A non-credible contingency event is a contingency event other than a credible contingency event. Examples (in normal system conditions) include:

- Three phase electrical faults.
- The trip of any busbar in the transmission network.
- The trip of more than one transmission element.
- The trip of transmission plant in a manner not considered likely (for example, a transmission line that trips at one end only).
- The trip of multiple generating units.

AEMO is not required to operate the power system with the capability to remain in a satisfactory operating state following non-credible contingency events (other than any protected events), as the likelihood of their occurrence is low.

AEMO must reclassify a non-credible contingency event as a credible contingency event if the likelihood of the event impacting the power system has become reasonably possible due to abnormal conditions. Abnormal conditions are defined in the NER as *conditions posing added risk to the power system including, without limitation, severe weather conditions, lightning, storms and bush fires*[6].

[3] Refer to NER 4.2.2.

[4] Refer to NER 4.2.3.

[5] The definition of *contingency event* in the NER was amended with effect from 9 March 2023.

[6] Refer to NER 4.2.3A(a).

4 Reclassification criteria

AEMO has developed criteria for determining whether a non-credible contingency event should be reclassified as a credible contingency event (reclassification criteria). The reclassification criteria are set out in AEMO's Power System Security Guidelines SO_OP_3715[7] by reference to identified abnormal conditions that may affect the power system:

- Bushfires.
- Lightning.
- Specific risks relating to plant operation.
- Severe wind (including tropical cyclones).
- Geomagnetic disturbances.
- Floods.
- Widespread pollutants.
- Landslides.
- Sudden or unexpected changes to solar generation.
- Earthquakes and tsunamis.
- Large scale social unrest.
- Cyber attack.

The following section analyses how AEMO reclassified non-credible contingency events using the reclassification criteria for the reporting period.

[7] AEMO published a new version of Power System Security Guidelines SO_OP_3715, effective 9 March 2023, which introduced more reclassification criteria categories.

5 Reclassification decisions, 1 May 2023 to 31 October 2023

The comparison to previous reporting periods will focus on the standing categories that continue to dominate the reclassification events, for example lightning events. Future reports will examine any emerging trends in the recently added categories.

AEMO reclassified 178 events during the reporting period, a decrease of 39 events from the same period in 2022. Table 1 summarises these events. Refer to Appendix A1 for a complete list of events.

Table 1 Reclassification decisions for period 1 May 2023 to 31 October 2023

Criteria	Number of reclassifications	Incidence of contingency occurring during reclassification
Bushfires	3	0
Lightning	146	0
Specific risks relating to plant operation[A]	10	0
Severe wind	19	0
Geomagnetic disturbances	0	0
Floods	0	0
Widespread pollutants	0	0
Landslides	0	0
Sudden or unexpected changes to solar generation	0	0
Earthquakes and tsunamis	0	0
Large scale social unrest	0	0
Cyber attack	0	0
Total for period	178	0

A. Includes reclassifications due to occurrence of non-credible contingency events or other reasons.

Each reclassification decision was made after considering the reclassification criteria for the relevant abnormal conditions, as specified in SO_OP_3715 at the time of the reclassification decision and determining that the criteria had been met.

The majority of these events were reclassified due to:

- Lightning,
- Severe wind,
- Specific risk relating to plant operation, and
- Bushfires.

There were no incidents of the reclassified contingency event occurring during the period of reclassification.

Figure 1 shows the number of reclassifications per region for the reporting period.

Figure 1 Reclassifications per region, 1 May 2023 to 31 October 2023

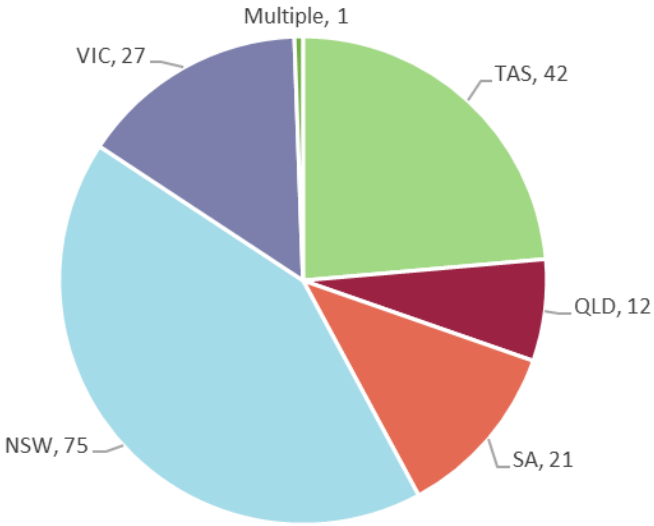
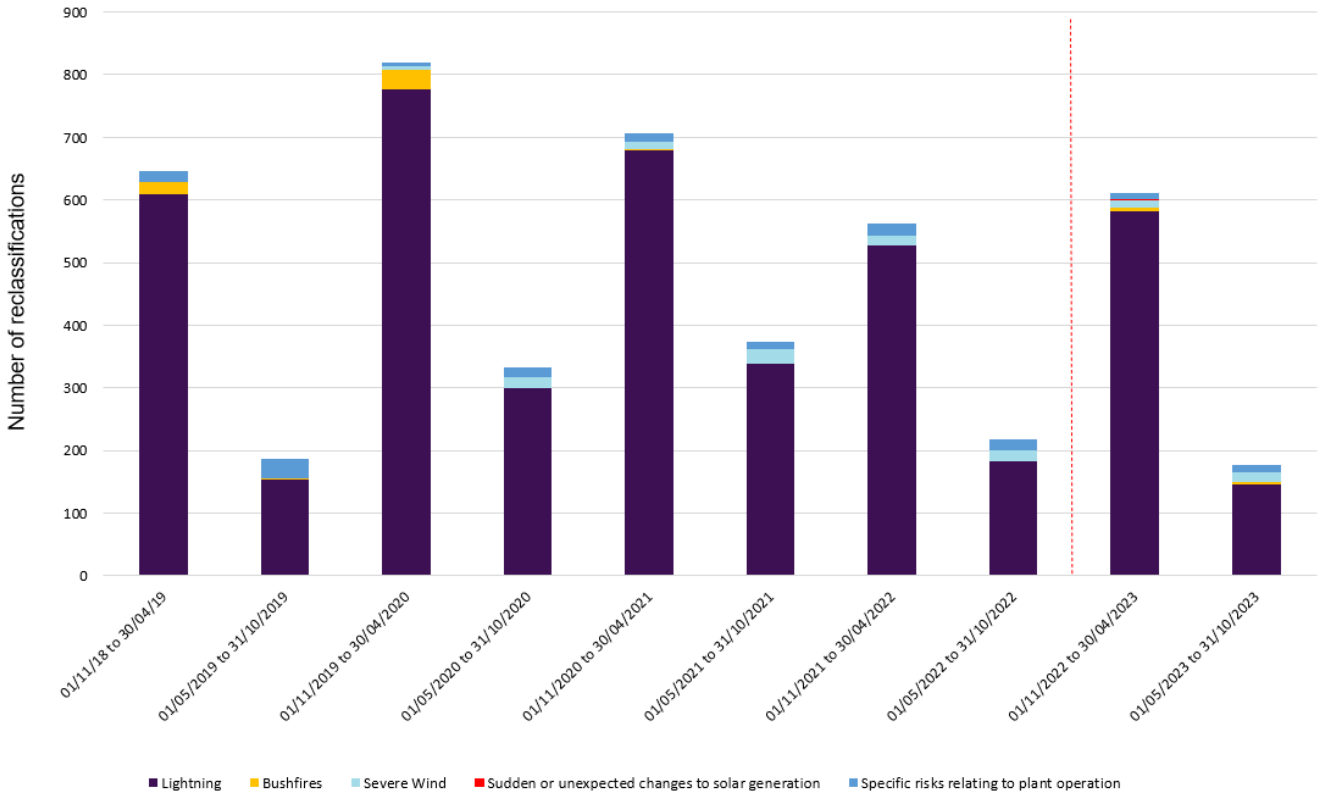


Figure 2 shows the historical trend of reclassifications by reclassification criteria category since 2018. The dotted red line designates the time that reporting commenced under the revised reclassification criteria (effective 9 March 2023).[8]

Figure 2 Historical reclassifications, 2018 to 2023



Note: "Severe weather" category has been renamed to "Severe wind" since reclassification criteria considers added risk to the power system posed by high intensity wind activity during the observed/forecast Severe Weather Conditions. The new category "Specific risks relating to plant operation" includes reclassifications that used to be under the "Other" category in previous reports. Dotted red line marks the commencement of the review of reclassification events under the revised contingency event reclassification criteria (indistinct events rule change).

[8] See https://www.aemc.gov.au/rule-changes/enhancing-operational-resilience-relation-indistinct-events

The total number of reclassifications in this reporting period was lower than the historical average for the winter period (258 since 2018). The number of reclassifications decreased by 18%, from 217 to 178 when compared to the previous winter. On a region basis:

- **Queensland** recorded a significant reduction in lightning reclassifications (76 to six). There were three bushfire reclassification events, all located in Queensland.
- **New South Wales** experienced the largest increase in reclassifications (60 to 75). Mt Piper – Bannaby 5A6 and 5A7 500 kilovolts (kV) lines were reclassified 26 times due to lightning.
- **Victoria** recorded no change to the number of reclassifications. All 27 events, except one, were due to lightning affecting Eildon – Mt Beauty No.1 and No.2 220 kV lines.
- **South Australia** had a similar number of reclassifications. During this reporting period, almost all reclassifications in this region occurred due to severe wind, for the Brinkworth – Davenport, Brinkworth – Templers West and Para – Templers West 275 kV lines and Para – Templers West and Magill – Torrens Island A 275 kV lines.
- In **Tasmania**, most reclassification events were due to lightning, an overall increase of nine events (33 to 42).

Reclassifications due to specific risks relating to plant operation (previously classified as ‘other’ abnormal conditions) decreased by six (from 16 to 10) compared to the previous winter.

Appendix A2 lists all the reclassified elements and the number of times they were reclassified during the reporting period. There were 29 unique reclassified transmission elements, similar to the previous winter (28), but down from 32 recorded in the previous summer (1 November 2022 to 30 April 2023).

6 Non-credible contingency events, 1 May 2023 to 31 October 2023

During the reporting period, 21 non-credible contingency events occurred. By the end of this reporting period, AEMO had reclassified nine of these events as credible contingency events, after assessing there was a risk of the event reoccurring.

Appendix A1 lists all reclassifications during the reporting period. Note that the following reclassifications cancelled within this reporting period were initially reclassified before the period and are therefore not listed in Appendix A1:

- Trip of Kiamal Solar Farm – Red Cliffs 220 kV line and Buronga No. 2 and No. 3 synchronous condensers on 1 March 2022.
- Trip of Condabri North – Condabri Central 7400 132 kV line and Condabri North – Condabri Central 7401 132 kV line on 21 October 2022.
- Trip of Tarong – Chinchilla 7183 and 7168 132 kV lines on 31 October 2022.
- Trip of Bungama – Snowtown – Hummocks and Bungama – Redhill – Brinkworth 132 kV Lines on 12 November 2022.
- Trip of Kerang – Wemen – Red Cliffs 220 kV line and Kiamal solar farm transformer on 15 December 2022.
- Trip of Braemar 2 Power Station units 5, 6 and 7 on 3 April 2023.

Appendix A3 lists all non-credible contingency events that occurred during the reporting period and AEMO's assessment of whether to reclassify each event as credible. The rows highlighted in teal in Appendix A3 explain the contingency events corresponding to the reclassifications highlighted in teal in Appendix A1.

Reclassifications of non-credible contingency events that occurred in this reporting period and remain reclassified at the time of publishing this report are:

- Blyth West – Munno Para 220 kV Line tripping at Blyth West end only on 15 August 2023.
- Trip of South East No. 1 and No. 2 static VAR compensators (SVCs) on 13 October 2023.

The transmission elements that were reclassified prior to the reporting period and remained reclassified at the end of this reporting period are not included in the report.

The following non-credible contingency events were considered as reviewable operating incidents; for further details refer to the relevant published incident reports[9]:

- Trip of Belmont No. 2 275 kV bus on 16 May 2023.
- Trip of Moorabool No. 1 220 kV bus on 29 May 2023.
- Trip of Liddell – Tomago 82 line and Liddell 1A transformer on 8 June 2023.

[9] At https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-events-and-reports/power-system-operating-incident-reports.

7 Reclassification constraints

When AEMO reclassifies an event, it seeks to operate the power system so it will remain in a satisfactory operating state should the (now) credible contingency event occur. AEMO typically invokes constraint equations to manage the power system accordingly while an event is reclassified.

Appendix A4 lists the binding constraint equations during reclassifications over the reporting period. It includes the binding duration (dispatch intervals/hours) and total marginal values (binding impact).

There were 13 reclassifications that resulted in binding constraint equations. This means that in the 165 other instances, the constraints associated with reclassifications did not affect dispatch outcomes.

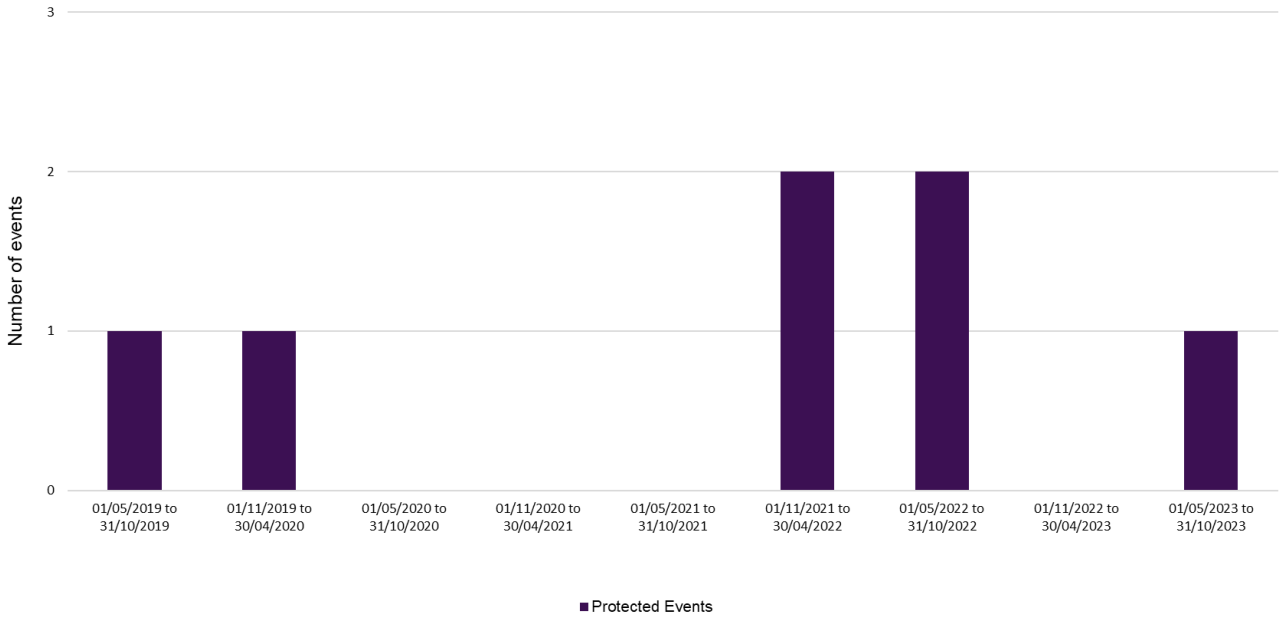
8 Protected events

This section includes analysis of a protected event in South Australia region where AEMO took action to maintain power system security.

Figure 3 shows the historical trend of days when conditions for a protected event were met in South Australia, since June 2019 when the protected event was declared[10].

In this reporting period, there was one day where conditions of protected event were met, on 7 June 2023 (see MNs 108385 and 108401). There were no binding constraints associated with this protected event.

Figure 3 Protected events in South Australia where AEMO took action, six-monthly trend, 2019 to 2023



[10] See https://www.aemc.gov.au/sites/default/files/2019-06/Information%20Sheet%20-%20final%20determination%20-%20REL0069.pdf.

9 Appropriateness and effectiveness of the reclassification criteria

AEMO concludes that, during the reporting period 1 May 2023 to 31 October 2023:

1. AEMO's reclassification decisions were appropriate and consistent with the reclassification criteria, except for on one occasion where reclassification was not required. On 11 August 2023, during changeover of diesel fuel tank supplies, five gas turbines at Snapper Point tripped simultaneously. AEMO reclassified this event since it was identified that a trip of these generating units together is reasonably possible. However, this reclassification was cancelled since analysis determined that all generators were connected by a single line to Pelican Point which meant this was already a credible contingency. No constraint sets were invoked and there was no impact to the market due to this event. AEMO is currently updating the Power System Security Guidelines (SO_OP_3715) to include a clarification of the definition of non-credible generation event relating to multiple generating units (Section 7.2 of the Power System Security Guidelines).
2. AEMO notified Market Participants of the reasons for reclassifying non-credible contingency events through the issue of MNs following each decision.
3. AEMO effectively invoked the reclassification constraints on power system elements under potential risk, or to reflect widespread risks, to maintain system security during the reclassification period.

Having reviewed the reclassification criteria in 2022-23, AEMO has not identified a need for further review at this stage.

A1. Reclassifications, 1 May 2023 to 31 October 2023

- **INDJI** – Indji Watch (INDJI) is a system that monitors live information feeds on hazards such as bushfires and displays their positions relative to the locations of transmission assets and is used to provide detection and location of cloud to ground lightning strikes across the National Electricity Market (NEM) transmission system.
- **BOM** – AEMO receives advice from the Bureau of Meteorology (BOM) when severe weather is forecast in regions that may impact the NEM transmission system.

The reclassifications highlighted in teal in Table 2 below were determined after a non-credible contingency event occurred. Further details on the reclassifications highlighted in teal can be found in Appendix A3.

Table 2 Reclassifications 1 May 2023 to 31 October 2023

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
107688	02/05/2023 1625 hrs	02/05/2023 1725 hrs	107689	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
107819	11/05/2023 0115 hrs	11/05/2023 0215 hrs	107820	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
107871	13/05/2023 1410 hrs	13/05/2023 1510 hrs	107876	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
107872	13/05/2023 1420 hrs	13/05/2023 1550 hrs	107879	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
107880	13/05/2023 1615 hrs	13/05/2023 1840 hrs	107882	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
107883	13/05/2023 2110 hrs	13/05/2023 2210 hrs	107884	Ross – Chalumbin 857 and 858 275 kV lines	QLD	Lightning	INDJI
107885	14/05/2023 0450 hrs	14/05/2023 0550 hrs	107886	Ross – Chalumbin 857 and 858 275 kV lines	QLD	Lightning	INDJI
107909	15/05/2023 1435 hrs	15/05/2023 1635 hrs	107914	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
107910	15/05/2023 1450 hrs	15/05/2023 1720 hrs	107916	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
107917	15/05/2023 2010 hrs	15/05/2023 2140 hrs	107918	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
108027	24/05/2023 0210 hrs	02/06/2023 1215 hrs	108328	Kamerunga – Woree 7141 132 kV line, Kamerunga – Barron Gorge 7143 and 7184 132 kV lines and Barron Gorge Power Station units 1 and 2	QLD	Other	TNSP
108110	25/05/2023 1330 hrs	25/05/2023 1530 hrs	108118	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108113	25/05/2023 1420 hrs	25/05/2023 1520 hrs	108117	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108318	01/06/2023 0325 hrs	01/06/2023 0435 hrs	108320	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108317	01/06/2023 0325 hrs	01/06/2023 0425 hrs	108319	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108386	07/06/2023 1305 hrs	07/06/2023 2340 hrs	108408	Widespread conditions affecting multiple equipment in multiple regions	Multiple	Other	BOM
108399	07/06/2023 1710 hrs	07/06/2023 2105 hrs	108402	Brinkworth – Davenport, Brinkworth – Templers West and Para – Templers West 275 kV lines	SA	Severe Wind	BOM
108400	07/06/2023 1715 hrs	07/06/2023 2105 hrs	108403	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
108404	07/06/2023 2105 hrs	07/06/2023 2205 hrs	108407	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108409	08/06/2023 0725 hrs	08/06/2023 0905 hrs	108412	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108410	08/06/2023 0725 hrs	08/06/2023 0905 hrs	108412	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108411	08/06/2023 0805 hrs	08/06/2023 0905 hrs	108412	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108413	08/06/2023 1220 hrs	09/06/2023 0055 hrs	108445	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
108484	12/06/2023 1920 hrs	12/06/2023 2020 hrs	108485	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
108486	12/06/2023 2355 hrs	13/06/2023 0055 hrs	108487	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
108489	13/06/2023 1120 hrs	13/06/2023 1320 hrs	108494	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108501	13/06/2023 1555 hrs	13/06/2023 1855 hrs	108506	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
108502	13/06/2023 1610 hrs	13/06/2023 1810 hrs	108505	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
108503	13/06/2023 1645 hrs	13/06/2023 1945 hrs	108507	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108504	13/06/2023 1710 hrs	13/06/2023 2015 hrs	108509	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
108508	13/06/2023 1950 hrs	13/06/2023 2050 hrs	108510	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
108565	17/06/2023 1650 hrs	17/06/2023 1750 hrs	108568	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108574	18/06/2023 1315 hrs	18/06/2023 1415 hrs	108575	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108578	18/06/2023 1510 hrs	18/06/2023 1910 hrs	108598	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108586	18/06/2023 1720 hrs	18/06/2023 1920 hrs	108599	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108596	18/06/2023 1820 hrs	18/06/2023 1925 hrs	108600	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108606	19/06/2023 0705 hrs	19/06/2023 0805 hrs	108617	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108619	19/06/2023 0925 hrs	19/06/2023 1130 hrs	108623	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108621	19/06/2023 1030 hrs	19/06/2023 1135 hrs	108624	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108673	23/06/2023 0115 hrs	23/06/2023 0215 hrs	108675	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
108674	23/06/2023 0115 hrs	23/06/2023 0215 hrs	108676	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
108677	23/06/2023 0245 hrs	23/06/2023 0345 hrs	108678	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
108679	23/06/2023 0415 hrs	23/06/2023 0615 hrs	108685	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
108680	23/06/2023 0420 hrs	23/06/2023 0720 hrs	108691	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
108711	24/06/2023 1200 hrs	25/06/2023 2255 hrs	108742	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
108722	24/06/2023 1850 hrs	24/06/2023 1955 hrs	108723	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108724	24/06/2023 2055 hrs	24/06/2023 2155 hrs	108726	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
108780	27/06/2023 1420 hrs	27/06/2023 1805 hrs	108783	Columboola – Wandoan South 8891 and 8892 275 kV lines	QLD	Bushfires	INDJI
108788	29/06/2023 2045 hrs	03/10/2023 1205 hrs	110111	Altona – Keilor 220 kV line and Salt Creek Wind Farm	VIC	Other	TNSP
108801	03/07/2023 1700 hrs	03/07/2023 1900 hrs	108802	Collinsville – Stoney Creek 7306 132 kV line and Collinsville – Newlands 7121 132 kV line	QLD	Lightning	INDJI
108804	03/07/2023 2130 hrs	03/07/2023 2330 hrs	108805	Ross – Chalumbin 857 and 858 275 kV lines	QLD	Lightning	INDJI
108826	07/07/2023 1755 hrs	08/07/2023 1725 hrs	108840	Brinkworth – Davenport, Brinkworth – Templers West and Para – Templers West 275 kV lines	SA	Severe Wind	BOM
108827	07/07/2023 1755 hrs	08/07/2023 1725 hrs	108841	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
108830	07/07/2023 2230 hrs	08/07/2023 0530 hrs	108832	Widespread conditions affecting multiple equipment in SA region	SA	Severe Wind	BOM
108833	08/07/2023 1240 hrs	08/07/2023 1340 hrs	108834	Farrell Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108835	08/07/2023 1355 hrs	08/07/2023 1500 hrs	108836	Farrell Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108843	08/07/2023 1750 hrs	08/07/2023 1955 hrs	108845	Farrell Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108842	08/07/2023 1750 hrs	08/07/2023 1950 hrs	108844	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
108861	10/07/2023 2110 hrs	11/07/2023 0010 hrs	108864	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
108862	10/07/2023 2305 hrs	11/07/2023 0005 hrs	108863	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
108893	13/07/2023 0725 hrs	21/08/2023 1600 hrs	109402	Glen Innes – Tenterfield 132 kV line at Glen Innes end only	NSW	Other	TNSP
108912	15/07/2023 1030 hrs	15/07/2023 1230 hrs	108913	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109076	28/07/2023 0455 hrs	28/07/2023 0800 hrs	109081	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109077	28/07/2023 0520 hrs	28/07/2023 0620 hrs	109078	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
109079	28/07/2023 0630 hrs	28/07/2023 0730 hrs	109080	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
109128	30/07/2023 2055 hrs	30/07/2023 2155 hrs	109129	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109130	30/07/2023 2355 hrs	01/08/2023 1140 hrs	109156	Widespread conditions affecting multiple equipment in Tasmania region	TAS	Severe Wind	BOM
109131	31/07/2023 0055 hrs	31/07/2023 0455 hrs	109134	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
109132	31/07/2023 0200 hrs	31/07/2023 0405 hrs	109133	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109150	31/07/2023 2025 hrs	31/07/2023 2125 hrs	109151	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109285	11/08/2023 2115 hrs	12/08/2023 0940 hrs	109292	Snapper Point GT1, GT2, GT3, GT4, GT5	SA	Other	Generator
109296	13/08/2023 0625 hrs	13/08/2023 0810 hrs	109297	Dumaresq – Bulli Creek 8M 330 kV Line and Bulli Creek – Braemar 9902 330 kV Line	QLD	Other	TNSP
109323	15/08/2023 1405 hrs	N/A	N/A	Blyth West – Munno Para 220 kV line tripping at Blyth West end only	SA	Other	TNSP
109358	17/08/2023 1435 hrs	17/08/2023 1535 hrs	109360	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
109364	18/08/2023 0445 hrs	18/08/2023 0750 hrs	109368	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109363	18/08/2023 0445 hrs	18/08/2023 0745 hrs	109367	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109365	18/08/2023 0635 hrs	18/08/2023 0735 hrs	109366	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109403	22/08/2023 0055 hrs	22/08/2023 0300 hrs	109404	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109405	22/08/2023 1140 hrs	22/08/2023 1245 hrs	109406	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109408	22/08/2023 1315 hrs	22/08/2023 1715 hrs	109412	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109413	22/08/2023 1720 hrs	22/08/2023 2120 hrs	109417	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109416	22/08/2023 2045 hrs	22/08/2023 2145 hrs	109418	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109419	22/08/2023 2310 hrs	23/08/2023 0010 hrs	109420	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109422	23/08/2023 1405 hrs	10/04/2023 1125 hrs	110129	Liddell – Tomago 82 330 kV line and Tamworth SVC	NSW	Other	TNSP
109424	24/08/2023 0335 hrs	24/08/2023 0435 hrs	109425	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109457	28/08/2023 0345 hrs	28/08/2023 0445 hrs	109458	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109462	28/08/2023 1220 hrs	28/08/2023 1720 hrs	109474	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109463	28/08/2023 1305 hrs	28/08/2023 1505 hrs	109468	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109467	28/08/2023 1450 hrs	28/08/2023 1650 hrs	109472	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109476	28/08/2023 2035 hrs	28/08/2023 2135 hrs	109477	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109492	30/08/2023 0325 hrs	30/08/2023 0425 hrs	109493	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
109494	30/08/2023 0500 hrs	30/08/2023 0605 hrs	109495	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109507	30/08/2023 1145 hrs	30/08/2023 1345 hrs	109509	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109508	30/08/2023 1200 hrs	30/08/2023 1800 hrs	109514	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109510	30/08/2023 1445 hrs	30/08/2023 1845 hrs	109515	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109511	30/08/2023 1450 hrs	30/08/2023 1950 hrs	109516	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109513	30/08/2023 1515 hrs	31/08/2023 0415 hrs	109519	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109517	30/08/2023 2040 hrs	30/08/2023 2140 hrs	109518	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109534	02/09/2023 1410 hrs	02/09/2023 1510 hrs	109540	Collinsville – Stoney Creek 7306 132 kV line and Collinsville – Newlands 7121 132 kV line	QLD	Lightning	INDJI
109541	02/09/2023 1520 hrs	02/09/2023 1620 hrs	109545	Collinsville – Mackay Tee Proserpine 7125 and 7126 132 kV lines	QLD	Lightning	INDJI
109557	04/09/2023 0305 hrs	04/09/2023 0905 hrs	109558	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109567	04/09/2023 1500 hrs	04/09/2023 1700 hrs	109572	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109570	04/09/2023 1605 hrs	04/09/2023 1710 hrs	109574	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109601	04/09/2023 1840 hrs	04/09/2023 2145 hrs	109604	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109607	04/09/2023 2300 hrs	05/09/2023 0305 hrs	109610	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109609	05/09/2023 0300 hrs	05/09/2023 0500 hrs	109612	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109611	05/09/2023 0345 hrs	05/09/2023 0550 hrs	109613	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
109670	07/09/2023 0550 hrs	07/09/2023 0655 hrs	109671	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109672	07/09/2023 0700 hrs	07/09/2023 1005 hrs	109675	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109674	07/09/2023 1105 hrs	08/09/2023 0555 hrs	109686	South East – Tailem Bend No. 1 and No. 2 275 kV lines	SA	Severe Wind	BOM
109677	07/09/2023 1240 hrs	07/09/2023 1340 hrs	109683	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109685	07/09/2023 1500 hrs	07/09/2023 1600 hrs	109687	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109692	07/09/2023 1735 hrs	08/09/2023 0555 hrs	109706	Brinkworth – Davenport, Brinkworth – Templers West and Para – Templers West 275 kV lines	SA	Severe Wind	BOM
109694	07/09/2023 1735 hrs	08/09/2023 0555 hrs	109693	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
109695	07/09/2023 1930 hrs	07/09/2023 2230 hrs	109700	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109696	07/09/2023 1940 hrs	07/09/2023 2340 hrs	109702	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109697	07/09/2023 2005 hrs	07/09/2023 2305 hrs	109701	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109698	07/09/2023 2050 hrs	07/09/2023 2150 hrs	109699	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
109703	08/09/2023 0355 hrs	08/09/2023 0700 hrs	109711	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109704	08/09/2023 0415 hrs	08/09/2023 0520 hrs	109709	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109705	08/09/2023 0430 hrs	08/09/2023 0835 hrs	109712	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109726	08/09/2023 1420 hrs	08/09/2023 1620 hrs	109742	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
109794	13/09/2023 1455 hrs	15/12/2023 1630 hrs	112391	Ross No. 1 275 kV SVC and Ross No. 4 275/132 kV transformer	QLD	Other	TNSP

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
109799	14/09/2023 1205 hrs	14/09/2023 1700 hrs	109808	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
109886	19/09/2023 2010 hrs	19/09/2023 2215 hrs	109887	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
109889	20/09/2023 0640 hrs	20/09/2023 0745 hrs	109890	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
109892	20/09/2023 0940 hrs	20/09/2023 1045 hrs	109893	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
109894	20/09/2023 1120 hrs	20/09/2023 1320 hrs	109896	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109904	20/09/2023 1800 hrs	20/09/2023 1930 hrs	109905	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
109964	26/09/2023 1500 hrs	27/09/2023 0005 hrs	109978	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109968	26/09/2023 1635 hrs	26/09/2023 1735 hrs	109972	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109974	26/09/2023 1805 hrs	26/09/2023 2110 hrs	109976	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
109989	27/09/2023 1810 hrs	27/09/2023 2210 hrs	109990	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
109999	28/09/2023 1335 hrs	28/09/2023 1435 hrs	110003	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110004	28/09/2023 1500 hrs	28/09/2023 1700 hrs	110010	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110045	01/10/2023 0640 hrs	01/10/2023 0840 hrs	110048	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
110049	01/10/2023 0935 hrs	01/10/2023 1035 hrs	110052	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
110066	02/10/2023 0310 hrs	02/10/2023 0515 hrs	110069	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
110065	02/10/2023 0310 hrs	02/10/2023 0510 hrs	110068	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
110084	02/10/2023 1420 hrs	02/10/2023 1920 hrs	110092	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110090	02/10/2023 1700 hrs	02/10/2023 2000 hrs	110093	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
110091	02/10/2023 1725 hrs	02/10/2023 2255 hrs	110101	Brinkworth – Davenport, Brinkworth – Templers West and Para – Templers West 275 kV lines	SA	Severe Wind	BOM
110095	02/10/2023 2105 hrs	02/10/2023 2255 hrs	110099	Widespread conditions affecting multiple equipment in SA region	SA	Other	BOM
110096	02/10/2023 2110 hrs	02/10/2023 2255 hrs	110100	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
110097	02/10/2023 2210 hrs	02/10/2023 2250 hrs	110098	South East – Tailem Bend No1 and No2 275 kV lines	SA	Severe Wind	BOM
110102	02/10/2023 2310 hrs	03/10/2023 0005 hrs	110103	South East – Tailem Bend No1 and No2 275 kV lines	SA	Severe Wind	BOM
110104	03/10/2023 0155 hrs	03/10/2023 0500 hrs	110107	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
110108	03/10/2023 1050 hrs	03/10/2023 1150 hrs	110110	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
110127	03/10/2023 1930 hrs	03/10/2023 2030 hrs	110128	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
110132	04/10/2023 1415 hrs	04/10/2023 1715 hrs	110142	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
110140	04/10/2023 1545 hrs	04/10/2023 1645 hrs	110141	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
110143	04/10/2023 1750 hrs	04/10/2023 1850 hrs	110145	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
110144	04/10/2023 1825 hrs	04/10/2023 2025 hrs	110146	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110147	04/10/2023 2040 hrs	04/10/2023 2340 hrs	110148	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110224	12/10/2023 0925 hrs	12/10/2023 1125 hrs	110225	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI
110226	12/10/2023 1245 hrs	12/10/2023 1445 hrs	110231	Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
110236	12/10/2023 1740 hrs	12/10/2023 1940 hrs	110239	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
110240	12/10/2023 1945 hrs	12/10/2023 2250 hrs	110243	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
110241	12/10/2023 2040 hrs	12/10/2023 2240 hrs	110242	Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	Lightning	INDJI
110252	13/10/2023 1620 hrs	N/A	N/A	South East No. 1 and No. 2 SVCs	SA	Other	TNSP
110254	13/10/2023 1425 hrs	25/10/2023 1600 hrs	110476	Para No. 2 275/66 kV transformer at one end only	SA	Other	TNSP
110275	16/10/2023 1315 hrs	16/10/2023 1415 hrs	110277	Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	Lightning	INDJI
110345	21/10/2023 1635 hrs	21/10/2023 1935 hrs	110347	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
110346	21/10/2023 1645 hrs	21/10/2023 1950 hrs	110348	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
110350	21/10/2023 2055 hrs	22/10/2023 0130 hrs	110357	Waddamana – Tungatinah No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
110351	21/10/2023 2225 hrs	22/10/2023 0125 hrs	110356	Lindisfarne – Mornington Tee – Rokeby No. 1 and No. 2 110 kV lines	TAS	Lightning	INDJI
110353	21/10/2023 2315 hrs	22/10/2023 0120 hrs	110355	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
110352	21/10/2023 2315 hrs	22/10/2023 0115 hrs	110354	Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
110421	23/10/2023 2145 hrs	24/10/2023 0620 hrs	110423	Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	Severe Wind	BOM
110422	23/10/2023 2300 hrs	24/10/2023 0905 hrs	110425	Bulli Creek – Millmerran 9903 and 9904 330 kV lines	QLD	Bushfires	INDJI
110459	25/10/2023 1435 hrs	26/10/2023 0955 hrs	110502	Ross – Chalumbin 857 and 858 275 kV lines	QLD	Bushfires	INDJI
110495	26/10/2023 0515 hrs	26/10/2023 0620 hrs	110496	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI

Start MN	Start of event	End of event	End MN	Equipment	Region	Reason	Source
110497	26/10/2023 0710 hrs	26/10/2023 1310 hrs	110507	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110520	26/10/2023 2145 hrs	27/10/2023 0345 hrs	110521	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	Lightning	INDJI
110577	28/10/2023 1740 hrs	28/10/2023 1940 hrs	110579	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
110578	28/10/2023 1805 hrs	28/10/2023 2005 hrs	110581	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI
110631	30/10/2023 2025 hrs	30/10/2023 2155 hrs	110633	Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	Lightning	INDJI
110632	30/10/2023 2030 hrs	30/10/2023 2200 hrs	110634	Farrell – John Butters 220 kV line & Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	Lightning	INDJI

A2. Number of reclassifications on each element, 1 May 2023 to 31 October 2023

Table 3 Number of times reclassification occurred on each element, 1 May 2023 to 31 October 2023

Element	Region	Number of times reclassified					
		Bushfires	Lightning	Severe wind	Sudden or unexpected changes to solar generation	Other	Total
Widespread conditions affecting multiple equipment in multiple regions	Multiple	0	0	1	0	0	1
Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	NSW	0	22	0	0	0	22
Bayswater – Mt Piper 5A3 and Bayswater – Wollar 5A4 500 kV lines	NSW	0	25	0	0	0	25
Liddell – Tomago 82 330 kV line and Tamworth SVC	NSW	0	0	0	0	1	1
Mt Piper – Bannaby 5A6 and 5A7 500 kV lines	NSW	0	26	0	0	0	26
Glen Innes – Tenterfield 132 kV line at the Glen Innes end only	NSW	0	0	0	0	1	1
Bulli Creek – Millerran 9903 and 9904 330 kV lines	QLD	1	0	0	0	0	1
Collinsville – Mackay Tee Proserpine 7125 and 7126 132 kV lines	QLD	0	1	0	0	0	1
Collinsville – Stoney Creek 7306 132 kV line and Collinsville – Newlands 7121 132 kV line	QLD	0	2	0	0	0	2
Columboola – Wandoan South 8891 and 8892 275 kV lines	QLD	1	0	0	0	0	1
Dumaresq – Bulli Creek 8M 330 kV Line and Bulli Creek – Braemar 9902 330 kV Line	QLD	0	0	0	0	1	1
Kamerunga – Woree 7141 132 kV line, Kamerunga – Barron Gorge 7143 and 7184 132 kV lines and Barron Gorge unit 1 and 2	QLD	0	0	0	0	1	1
Ross – Chalumbin 857 and 858 275 kV lines	QLD	1	3	0	0	0	4

Appendix A2. Number of reclassifications on each element, 1 May 2023 to 31 October 2023

Element	Region	Number of times reclassified					
		Bushfires	Lightning	Severe wind	Sudden or unexpected changes to solar generation	Other	Total
Ross No. 1 275 kV SVC and Ross No. 4 275/132 kV transformer	QLD	0	0	0	0	1	1
Blyth West – Munno Para 220 kV line	SA	0	0	0	0	1	1
Brinkworth – Davenport, Brinkworth – Templers West and Para – Templers West 275 kV lines	SA	0	0	4	0	0	4
Para No. 2 275/66 kV transformer at one end only	SA	0	0	0	0	1	1
Para – Templers West and Magill – Torrens Island A 275 kV lines	SA	0	0	8	0	0	8
Snapper Point GT1, GT2, GT3, GT4, GT5	SA	0	0	0	0	1	1
South East No. 1 and No. 2 SVCs	SA	0	0	0	0	1	1
South East – Tailem Bend No. 1 and No. 2 275 kV lines	SA	0	0	3	0	0	3
Widespread conditions affecting multiple equipment in SA region	SA	0	0	2	0	0	2
Farrell – John Butters 220 kV line and Farrell – Rosebery Tee Queenstown – Newton 110 kV line	TAS	0	20	0	0	0	20
Farrell – Reece No. 1 and No. 2 220 kV lines	TAS	0	19	0	0	0	19
Lindisfarne – Mornington Tee – Rokeby No. 1 and No. 2 110 kV lines	TAS	0	1	0	0	0	1
Waddamana – Tungatinah No. 1 and No. 2 220 kV lines	TAS	0	1	0	0	0	1
Widespread conditions affecting multiple equipment in Tasmania region	TAS	0	0	1	0	0	1
Altona – Keilor 220 kV line and Salt Creek Wind Farm	VIC	0	0	0	0	1	1
Eildon – Mt Beauty No. 1 and No. 2 220 kV lines	VIC	0	26	0	0	0	26

A3. Non-credible contingency events, 1 May 2023 to 31 October 2023

Table 4 lists all non-credible contingency events that occurred during the reporting period, and AEMO's assessment of whether to reclassify each event as credible. The rows highlighted in teal in Table 4 explain the non-credible contingency events corresponding to the reclassifications highlighted in teal in Appendix A1.

Table 4 Non-credible contingency events, 1 May 2023 to 31 October 2023

Date of contingency	Description	Region	Primary cause	Was the contingency then reclassified?	Comments
16/05/2023 1855 hrs	Trip of Belmont 2 275 kV bus	QLD	Protection and Control	No	Refer to published incident report at https://www.aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/power_system_incident_reports/2023/trip-of-belmont-275-kv-no-2-busbar.pdf?la=en.
23/05/2023 1130 hrs	Trip of Farrell – Reece – Pieman 220 kV No.2 line	TAS	Human Error	No	TasNetworks and Hydro Tasmania advised that the cause of this event was an earth switch at Reece Power Station being left in closed position following planned maintenance. The operator responsible was retrained and counselled in the relevant procedure. AEMO was satisfied that another occurrence of this event was unlikely under the circumstances. AEMO did not reclassify this event as a credible contingency event as the cause had been identified and rectified.
24/05/2023 0200 hrs	Kamerunga – Woree 7141 132 kV line, Kamerunga – Barron Gorge 7143 & 7184 132 kV Lines and Barron Gorge Power Station generating units 1 and 2	QLD	Protection and Control	Yes	Woree – Kamerunga 7141 132 kV line tripped and reclosed due to a phase to ground fault. Barron Gorge Power Station unit 1 tripped as expected based on the network configuration. However, unit 2 also tripped unexpectedly. Powerlink and CleanCo advised that Barron Gorge unit 2 was connected to the unit 1 auxiliary transformer due to issues with unit 2 auxiliary transformer. This resulted in both units concurrently tripping. AEMO was not satisfied that this non-credible event would not re-occur, so this event was reclassified as credible. The reclassification was cancelled once unit 2 was connected to its own auxiliary transformer.
29/05/2023 1100 hrs	Trip of Moorabool No. 1 220 kV bus	VIC	Human Error	No	Refer to published incident report at https://www.aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/power_system_incident_reports/2023/trip-of-mlts-220 kV-no-1-bus-trip-on-29-may-2023.pdf?la=en.

Date of contingency	Description	Region	Primary cause	Was the contingency then reclassified?	Comments
08/06/2023 1600 hrs	Trip of Liddell – Tomago 82 line and Liddell 1A transformer	NSW	Human Error	No	Refer to published incident report at https://www.aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/power_system_incident_reports/2023/trip-of-liddell-tomago-82-line-and-liddell-1a-transformer.pdf?la=en.
29/06/2023 1455 hrs	Trip of Keilor to Altona 220 kV line and Salt Creek Wind Farm	VIC	Unknown	Yes	The cause of this non-credible contingency event was initially unknown and AEMO reclassified the event as a credible contingency event until further notice. At 1454 hrs all SCADA at Keilor Terminal Station was declared suspect and a crew from AusNet was sent to investigate. They found that a trip and auto reclose of the Keilor to Altona 220 kV line occurred which caused the bad SCADA data. It was found that Salt Creek Wind Farm also tripped at the same time due to unknown reasons. AEMO was not satisfied that this non-credible event would not re-occur, so this event was reclassified as credible.
09/07/2023 0655 hrs	Trip of Mortlake Power Station – Blue Gum Station 500 kV line and Blue Gum Station A1 transformer	VIC	Protection and Control	No	At 0655 hrs, trip of the Mortlake Power Station to Blue Gum Station 500 kV line occurred which also tripped the A1 transformer at Mortlake. Plant tripped due to maloperation of a circuit breaker. The circuit breaker was replaced and all generating units were returned to service. AEMO did not reclassify this event as a credible contingency event because the cause had been identified and rectified.
13/07/2023 0258 hrs	Trip of Tenterfield – Glen Innes 132 kV line at Glen Innes end only	NSW	Protection and Control	Yes	The cause of this non-credible contingency event was initially unknown and AEMO reclassified the event as a credible contingency event until further notice. A relay failure caused a circuit breaker to trip at one end of the line. AEMO was not satisfied that this non-credible event would not re-occur, so this event was reclassified as credible. The reclassification was cancelled once the relay was replaced. Transgrid did not determine a trend of maloperation with this type of relay.
16/07/2023 1655 hrs	Trip of Murarrie No. 1 220 kV bus	QLD	Protection and Control	No	Powerlink advised that during restoration of a planned outage of the Murarrie 110 kV No. 1 bus, the failure of an earth switch led to the bus trip. The faulty earth link was replaced and the bus was restored to service. AEMO did not reclassify this event as a credible contingency event because the cause had been identified and rectified and this was regarded as a rare event.
11/08/2023 2035 hrs	Trip of Snapper Point Power Station generating units GT1, GT2, GT3, GT4 and GT5	SA	Other	Yes	During changeover of diesel fuel tank supplies, five gas turbines at Snapper Point tripped simultaneously. AEMO reclassified this event since it was identified that trip of these generating units together is reasonably possible. This reclassification was cancelled because analysis determined that all generators were connected by a single line to Pelican Point, which meant this was already a credible contingency.
15/08/2023 1147 hrs	Trip of Blyth West – Munno Para 220 kV line at Blyth West end only	SA	Unknown	Yes	The cause of this incident could not be identified and AEMO reclassified this event as a credible contingency event until further notice. The reclassification remains in place as the root cause has not yet been identified and is still being investigated by ElectraNet.

Date of contingency	Description	Region	Primary cause	Was the contingency then reclassified?	Comments
25/08/2023 1331 hrs	Trip of Gordon C 220 kV bus	TAS	Human Error	No	During routine protection testing at Gordon substation, a voltage signal was incorrectly injected into a relay which activated protection and tripped the 220 kV C bus at Gordon. The cause of this incident was identified and rectified by Hydro Tasmania and TasNetworks prior to returning equipment to service. AEMO did not reclassify this event as a credible contingency event because the cause had been identified and rectified.
30/08/2023 0903 hrs	Trip of Chalumbin No.1 transformer	QLD	Protection and Control	No	The Chalumbin to Ross 857 275 kV line was switched out of service due to a planned outage. During switching, an external flashover occurred and one of the arcs caused a phase to ground fault which triggered operation of the No.1 transformer protection. A faulty circuit breaker was found to be the cause of this event. The breaker was repaired prior to returning equipment back to service. AEMO did not reclassify this event as a credible contingency event because the cause had been identified and rectified.
04/09/2023 1252 hrs	Trip of Tungkillo 275 kV east bus	SA	Human Error	No	During planned work, an operator accidentally bypassed an established isolation point which caused the Tungkillo 275 kV east bus to trip when a test voltage was applied. The ElectraNet contractor has now modified their isolation procedure to include identification of circuits which must not be energised with isolating blocking pins. AEMO did not reclassify this event as a credible contingency event because the cause had been identified and rectified.
13/09/2023 1204 hrs	Trip of Ross No. 1 275 kV SVC and Ross No. 4 275/132 kV transformer	QLD	Other	Yes	The cause of this incident could not be identified and AEMO reclassified this event as credible contingency event until further notice. During switching for a planned outage of the Ross No. 4 transformer, the No.1 275 kV SVC tripped. The SVC auxiliary lost power during switching since the No. 3 transformer was already on a long-term outage. AEMO cancelled the reclassification once transformers were returned to service. Following the occurrence of this event, the site diesel generator supply to the SVC was pre-selected as the alternate supply in event of a planned outage of one of the two transformers.
12/10/2023 1524 hrs	Trip of South East No. 1 and No. 2 SVCs	SA	Protection and Control/Human Error	Yes	During planned protection testing, a simulated cooling system fail test caused the No. 1 and No. 2 SVC to trip simultaneously. The equipment was returned to service but investigation by ElectraNet could not determine the root cause of the simultaneous trip. AEMO reclassified this event based on advice from ElectraNet because it was identified that trip of these SVCs together is reasonably possible. Root cause of this trip is yet to be determined.
13/10/2023 1402 hrs	Trip of Para No. 2 275/66 kV transformer at one end only	SA	Protection and Control	Yes	The cause of this incident could not be identified and AEMO reclassified this event as credible contingency event until further notice. Para 6543 CB opened offloading the No.2 transformer. No protection operated and only one end of the transformer was opened. Investigation by ElectraNet found a loose aluminium cover inside the

Date of contingency	Description	Region	Primary cause	Was the contingency then reclassified?	Comments
					circuit breaker which caused the trip. AEMO cancelled the reclassification once the circuit breaker was repaired.
17/10/2023 0711 hrs	Trip of Penola West – Kincraig 132 kV line offloaded at one end only	SA	Protection and Control	No	During switching for planned outage of the Kincraig No. 1 transformer, circuit breaker (6142) opened for unknown reason. This led to the Penola West to Kincraig line being offloaded at the Kincraig end only. The cause was found to be incorrect wiring work done just prior to the event. AEMO did not reclassify this event because the cause of the non-credible contingency event was identified and AEMO was satisfied that another occurrence of this event was unlikely under the current circumstances.
19/10/2023 1437 hrs	Trip of the Moorabool No. 2 500 kV bus	VIC	Human Error	No	During planned circuit breaker maintenance, human error led to trip of the No. 2 500 kV bus. The issue was identified and rectified. AEMO did not reclassify this event as a credible contingency event because the cause had been identified and rectified.
21/10/2023 0133 hrs	Trip of the Ross No. 2 275 kV bus	QLD	Protection and Control	No	During restoration from a trip of the Ross No. 1 SVC, the Ross No. 2 275 kV bus tripped. The cause was found to be incorrect protection settings on the No. 2 bus. AEMO did not reclassify this event because the cause of the non-credible contingency event was identified and AEMO was satisfied that another occurrence of this event was unlikely under the current circumstances.
21/10/2023 2029 hrs	Trip of the Waddamana – Tungatinah No. 1 and No. 2 110 kV lines	TAS	Lightning	Yes	Lightning caused both Waddamana to Tungatinah 110 kV lines to trip and auto-reclose on all three phases. AEMO then declared Waddamana to Tungatinah No. 1 and No. 2 110 kV lines to be vulnerable to lightning, with a category of probable, and cancelled the reclassification as there was no longer any lightning activity in the vicinity of the lines.

A4. Binding reclassification constraints, 1 May 2023 to 31 October 2023

Table 5 Reclassification constraints binding impact, 1 May 2023 to 31 October 2023

Reclassification start time	Reclassification end time	Reclassified equipment	Constraint	Number of binding Dispatch Intervals / Hours	Total Marginal Values[11]
13/05/2023 21:10	14/05/2023 5:50	Ross – Chalumbin 857 and 858 275kV lines	Q_STR_KBWF_N-2	24 (2)	28,703
1/06/2023 3:30	19/06/2023 11:35	Farrell – Reece No.1 and No.2 220 kV lines	F_T+FARE_N-2_TG_R6_2	5 (0.42)	1,795
			F_T+FARE_N-2_TG_R6_1	3 (0.25)	152
			F_T++FARE_N-2_TG_R60	25 (2.08)	28
			F_T+FARE_N-2_RREG	22 (1.83)	28
			F_T+FARE_N-2_TG_R60	3 (0.25)	14
			F_T+FARE_N-2_TG_R5	13 (1.08)	8
			F_T++FARE_N-2_TG_R6	5 (0.42)	8
23/06/2023 5:35	23/06/2023 5:55	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	N::Q_8C8J_KC_N-2	2 (0.17)	25
8/07/2023 12:45	31/07/2023 4:55	Farrell – Reece No.1 and No.2 220 kV lines	F_T++FARE_N-2_TG_R6	50 (4.17)	361
			F_T++FARE_N-2_TG_R60	31 (2.58)	141
			F_T+FARE_N-2_RREG	44 (3.67)	87
			F_T+FARE_N-2_TG_R6_2	5 (0.42)	47
			F_T++FARE_N-2_TG_R5	34 (2.83)	22
			F_T+FARE_N-2_TG_R60	1 (0.08)	5

[11] Binding constraint equations affect electricity market pricing. The binding impact is used to distinguish the severity of different binding constraint equations. The marginal value is a mathematical term for the binding impact arising from relaxing the RHS of a binding constraint by one MW. As the market clears each DI, the binding impact is measured in $/MW/DI. See “Constraint Frequently Asked Questions” for further information: https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/system-operations/congestion-information-resource/constraint-faq#:~:text=What%20is%20the%20marginal%20value,cost%20to%20the%20objective%20function.

Reclassification start time	Reclassification end time	Reclassified equipment	Constraint	Number of binding Dispatch Intervals / Hours	Total Marginal Values[11]
			F_T+FARE_N-2_TG_R5	5 (0.42)	4
30/08/2023 11:50	30/08/2023 15:25	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	Q::N_8C8J_AR_2LG_N-2	6 (0.5)	66
7/09/2023 21:15	7/09/2023 21:15	Farrell – Reece No.1 and No.2 220 kV lines	F_T+FARE_N-2_RREG	1 (0.08)	1
8/09/2023 16:10	8/09/2023 16:10	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	N::Q_8C8J_KC_N-2	1 (0.08)	25
20/09/2023 6:50	20/09/2023 7:30	Farrell – Reece No.1 and No.2 220 kV lines	F_T++FARE_N-2_TG_R6	2 (0.17)	1
			F_T++FARE_N-2_TG_R5	1 (0.08)	0
4/10/2023 18:30	4/10/2023 22:50	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	N::Q_8C8J_KC_N-2	30 (2.5)	2,029
21/10/2023 16:40	22/10/2023 1:15	Farrell – Reece No.1 and No.2 220 kV lines	F_T++FARE_N-2_TG_R6	76 (6.33)	520
			F_T+FARE_N-2_RREG	2 (0.17)	0
			F_T++FARE_N-2_TG_R60	2 (0.17)	1
25/10/2023 14:35	26/10/2023 5:30	Ross – Chalumbin 857 and 858 275kV lines	Q_STR_KBWF_N-2	136 (11.33)	144,793
26/10/2023 7:55	26/10/2023 13:05	Armidale – Dumaresq 8C 330 kV line and Armidale – Sapphire Wind Farm 8E 330 kV line	Q::N_8C8J_AR_2LG_N-2	42 (3.5)	2,669
28/10/2023 17:45	28/10/2023 19:40	Farrell – Reece No.1 and No.2 220 kV lines	F_T+FARE_N-2_TG_R6	48 (4)	286
			F_T+FARE_N-2_TG_R60	48 (4)	34
			F_T+FARE_N-2_TG_R5	48 (4)	10