



REVIEW OF POWER SYSTEM RECLASSIFICATION EVENTS 1 MAY 2014 TO 31 OCTOBER 2014

FOR THE NATIONAL ELECTRICITY MARKET

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IMPORTANT NOTICE

Purpose

AEMO has prepared this document to review power system reclassification events in the National Electricity Market for the period 1 May 2014 to 31 October 2014.

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1. INTRODUCTION

The power system is operated such that it will remain in a satisfactory¹ operating state for the loss of single elements in the transmission network. Such events are defined as credible contingency² events and include:

- Unexpected loss of a single transmission line, transformer or reactive plant.
- Unexpected loss of a single generating unit.

AEMO considers the occurrence of these events to be reasonably possible and will ensure contingency plans are in place to minimise the impact on the power system following a credible contingency event.

A non-credible contingency event is a contingency event other than a credible contingency event. Examples of these events 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 (e.g. a transmission line that trips at one end only).
- The trip of multiple generating units.
- The trip of more than one load block where the combined load lost exceeds that at which would normally be considered a credible event in that region.

AEMO does not normally operate the power system such that it will remain in a satisfactory operating state following a non-credible contingency, as the likelihood of this occurrence is low.

AEMO may reclassify a non-credible contingency event as a credible contingency if the risk of this event impacting the power system is increased due to abnormal conditions. Abnormal conditions may include severe weather conditions, lightning and bushfires.

NER Clause 4.2.3A (i) requires AEMO to issue a report every six months setting out its reasons for all decisions to reclassify non-credible contingency events as credible contingency events. The report:

1. Must include an explanation of how AEMO applied the criteria established in clause 4.2.3B for each decision.
2. May also include AEMO's analysis of reclassification trends during the relevant period and its appraisal of the appropriateness and effectiveness of the relevant criteria that were applied in the case of each reclassification decision.

This report is published to comply with the above rule requirements.

¹ Refer to NER 4.2.2

² Refer to NER 4.2.3

2. RECLASSIFICATION CRITERIA

AEMO has developed criteria for determining if a non-credible contingency event should be reclassified as credible. This criteria is defined in AEMO's Power System Security Guidelines SO_OP3715³ as per NER Clause 4.2.3B. AEMO has developed criteria for reclassifying events due to:

- Bushfires.
- Lightning.
- Other (pollution, protection and control issues, advice from Participants).

The following section analyses how AEMO has reclassified non-credible contingency events based on this criteria for 1 May 2014 to 31 October 2014.

3. RECLASSIFICATION EVENTS 1 MAY 2014 TO 31 OCTOBER 2014

AEMO reclassified 145 events during the reporting period 1 May 2014 to 31 October 2014. Table 1 summarises these events. Refer to Appendix A for a complete list of events. Of these 145 reclassifications there were two events where the contingency actually occurred while it was reclassified.

Table 1 Reclassification events for period 1 May 2014 to 31 October 2014

Criteria	Number of Reclassification Events	Actual incidence of contingency occurring during reclassification
Bushfires	2	0
Lightning	133	1
Other	10	1
Total for Period	145	2

AEMO reclassified events due to bushfires using the established criteria specified in SO_OP3715. There were two reclassifications due to bushfires in this period compared to seven in the previous period. The contingency did not actually occur during either of these two reclassifications.

AEMO reclassified events due to lightning using the established criteria specified in SO_OP3715. The list of vulnerable transmission lines indicates events eligible to be reclassified due to the specified criteria. There were 133 reclassifications due to lightning in this reporting period compared to 297 reclassifications in the previous period. There were less lightning reclassifications in this reporting period as it is outside the traditional lightning seasons. During one of these reclassifications the contingency event actually occurred (see Table 2).

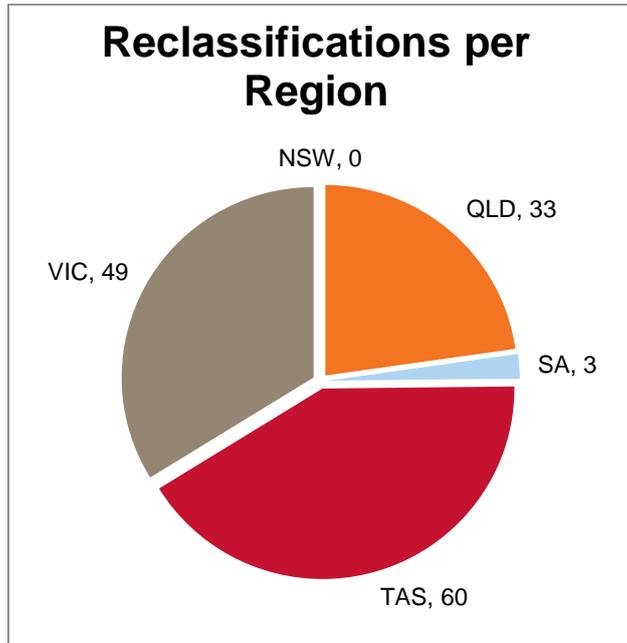
During the reporting period there were ten reclassifications for 'Other' reasons compared to thirteen in the previous period. These reclassifications resulted from contingencies that actually occurred and AEMO considered there was a risk of reoccurrence. Only once did the contingency event actually occur again after AEMO had reclassified it.

³ http://aemo.com.au/Electricity/Policies-and-Procedures/System-Operating-Procedures/Power-System-Security-Guidelines-SO_OP3715

3.1 Reclassification Trends

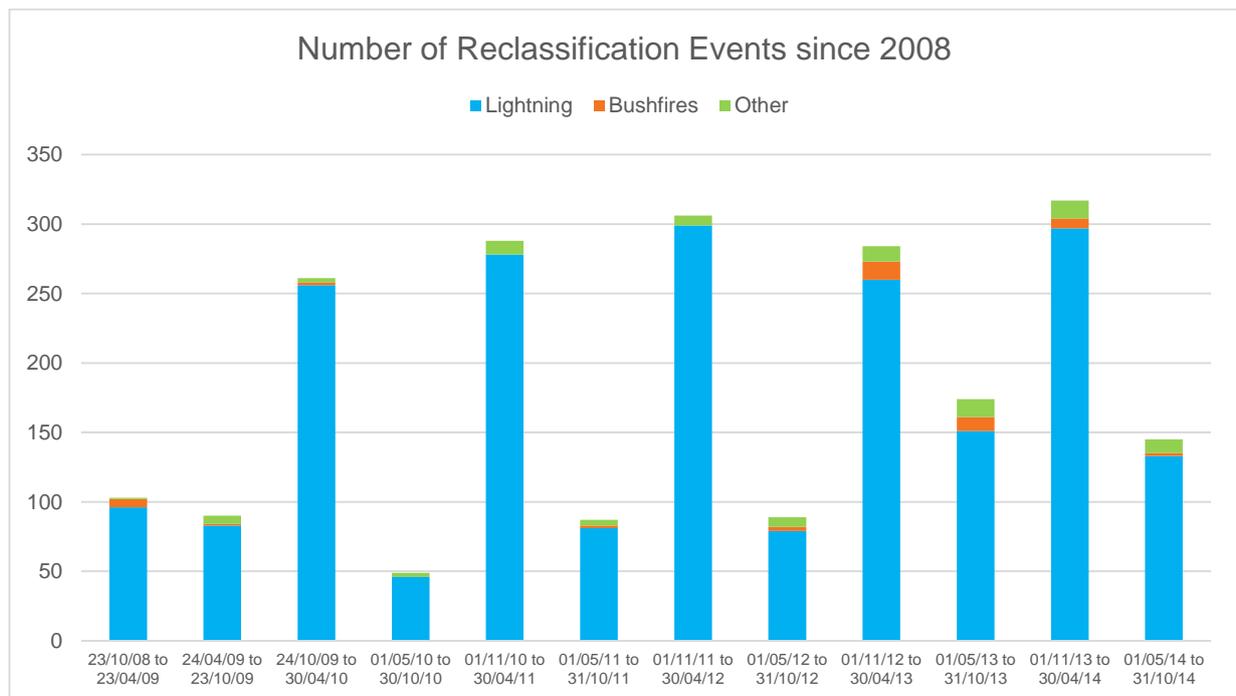
Figure 1 shows the number of reclassification events per region from 1 May 2014 to 31 October 2014. During this period there were no vulnerable transmission lines in New South Wales or South Australia, so there were no lightning reclassification events in these regions.

Figure 1 Reclassifications per region 1 May 2014 to 31 October 2014



The historical trend of reclassification events is shown in Figure 2. The number of reclassification events has been consistent over time with increased lightning reclassifications during summer.

Figure 2 Historical Reclassification events



4. NON-CREDIBLE CONTINGENCY EVENTS 1 MAY 2014 TO 31 OCTOBER 2014

There were 26 non-credible contingency events in the National Electricity Market during the reporting period 1 May 2014 to 31 October 2014. AEMO subsequently reclassified ten of these events as credible contingencies as there was a risk of the event reoccurring.

Appendix B lists all non-credible contingency events during the reporting period and AEMO's assessment in determining whether to reclassify the event as credible. The rows highlighted **red** in Appendix B correspond to reclassifications highlighted **red** in Appendix A.

Two contingency events occurred after reclassification by AEMO as shown in Table 2.

Table 2 Actual occurrence of an event while reclassified as credible

Start MN	Start Reclassification	Reclassified Equipment	Region	Reason	Date contingency actually occurred	Comments
45245	04/03/2014 09:20	TRTS-HYTS-APD No.1 500 kV line or APD-MOPS No.2 500 kV line and both APD potlines	VIC	Other	10/07/2014	APD unable to ride through low volts. Event likely to reoccur given similar circumstances
45934	26/06/2014 04:10	Farrell-John Butters 220 kV line & Farrell-Rosebery Tee Queenstown-Newton 110 kV line	TAS	Lightning	26/06/2014	Both lines tripped due to lightning after AEMO reclassified the event as credible

5. MARKET IMPACT OF RECLASSIFICATION CONSTRAINTS

When AEMO reclassifies an event as credible, the power system must be operated in such a way that it stays in a satisfactory operating state should this contingency occur. One way to ensure this happens is to invoke network constraints to manage the power system while an event is reclassified.

A binding constraint indicates that the constraint, and in this case the reclassification, has impacted the market. Appendix C lists the binding constraints during reclassification events over the reporting period.

During this reporting period 16 reclassified events resulted in binding constraints on the power system.

6. CONCLUSION

AEMO correctly applied the reclassification criteria over the period 1 May 2014 to 31 October 2014. AEMO appropriately reclassified non-credible contingency events as credible based on the established criteria in SO_OP_3715 for bushfires, lightning or other reasons. AEMO notified Market Participants of the reasons for reclassifying non-credible contingency events.

The number of reclassification events in this reporting period is consistent with historical trends, suggesting the established criteria remains appropriate for reclassifying non-credible contingency events.



APPENDIX A. RECLASSIFICATION EVENTS 1 MAY 2014 - 31 OCTOBER 2014

Table 3 Reclassification Events 1 May 2014 to 31 October 2014

Start MN	Start Date	Actual End Date	End MN	Reclassified Equipment	Region	Reason	Source
46777	31/10/2014 15:05	31/10/2014 20:10	46778	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46772	30/10/2014 17:45	30/10/2014 22:55	46775	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46771	30/10/2014 15:50	30/10/2014 20:30	46774	Kemmis Moranbah tee Burton Downs 7117 132kV line and Nebo Moranbah tee Coppabella 7118 132kV line	QLD	Lightning	GPATS
46770	30/10/2014 14:50	30/10/2014 20:30	46773	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46766	30/10/2014 02:25	30/10/2014 06:50	46767	Kemmis Moranbah tee Burton Downs 7117 132kV line and Nebo Moranbah tee Coppabella 7118 132kV line	QLD	Lightning	GPATS
46765	30/10/2014 02:25	30/10/2014 06:50	46768	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46761	29/10/2014 14:30	29/10/2014 21:10	46763	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46760	29/10/2014 14:10	29/10/2014 21:10	46764	Kemmis Moranbah tee Burton Downs 7117 132kV line and Nebo Moranbah tee Coppabella 7118 132kV line	QLD	Lightning	GPATS
46755	28/10/2014 19:45	28/10/2014 20:25	46757	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46756	28/10/2014 19:45	28/10/2014 20:25	46758	Kemmis Moranbah tee Burton Downs 7117 132kV line and Nebo Moranbah tee Coppabella 7118 132kV line	QLD	Lightning	GPATS
46749	28/10/2014 07:10	28/10/2014 07:40	46751	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46748	28/10/2014 06:55	28/10/2014 07:35	46750	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46739	27/10/2014 14:55	27/10/2014 20:50	46746	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46737	27/10/2014 13:35	27/10/2014 15:45	46740	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46738	27/10/2014 13:35	27/10/2014 15:45	46741	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46732	27/10/2014 06:45	27/10/2014 12:30	46735	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
46734	27/10/2014 06:45	27/10/2014 12:30	46736	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46729	27/10/2014 06:00	27/10/2014 06:40	46731	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
46728	27/10/2014 05:20	27/10/2014 06:40	46730	Burnie Sheffield No. 2 110kV line and Paloona Sheffield 110kV line	TAS	Lightning	GPATS
46718	27/10/2014 03:00	27/10/2014 04:45	46722	Burnie Sheffield No. 2 110kV line and Paloona Sheffield 110kV line	TAS	Lightning	GPATS



Start MN	Start Date	Actual End Date	End MN	Reclassified Equipment	Region	Reason	Source
46716	27/10/2014 02:30	27/10/2014 04:45	46724	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46717	27/10/2014 02:30	27/10/2014 04:45	46723	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46715	27/10/2014 02:10	27/10/2014 04:45	46725	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46714	27/10/2014 01:40	27/10/2014 03:20	46719	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46711	27/10/2014 01:05	27/10/2014 11:25	46726	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46712	27/10/2014 01:05	27/10/2014 11:25	46727	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46713	27/10/2014 01:05	27/10/2014 03:20	46720	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
46709	26/10/2014 19:30	27/10/2014 02:20	46721	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46679	23/10/2014 00:00	23/10/2014 02:20	46682	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46680	23/10/2014 00:00	23/10/2014 02:20	46683	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46666	21/10/2014 10:30	23/03/2015 13:00	48593	Trip of Eildon - Thomastown 220 kV line and Eildon No.2 Generator	VIC	Other	Event actually occurred
46661	19/10/2014 23:30	Remains reclassified – see Table 4 for explanation		Trip of Ballarat - Elaine - Moorabool 220 kV line and Waubra WF	VIC	Other	Event actually occurred
46635	13/10/2014 23:55	14/10/2014 03:40	46637	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46630	13/10/2014 19:40	13/10/2014 21:40	46632	Kemmis Moranbah tee Burton Downs 7117 132kV line and Nebo Moranbah tee Coppabella 7118 132kV line	QLD	Lightning	GPATS
46631	13/10/2014 19:40	13/10/2014 21:40	46633	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46627	13/10/2014 15:10	13/10/2014 17:30	46629	Chalumbin Woree 876 and 877 275kV lines	QLD	Lightning	GPATS
46625	13/10/2014 12:55	13/10/2014 22:40	46634	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46618	12/10/2014 14:45	12/10/2014 20:00	46619	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46617	12/10/2014 14:20	12/10/2014 20:00	46620	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
46615	12/10/2014 03:15	12/10/2014 04:30	46616	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46589	07/10/2014 00:35	07/10/2014 02:00	46590	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46588	07/10/2014 00:20	07/10/2014 02:05	46592	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
46585	06/10/2014 23:30	07/10/2014 00:15	46587	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46584	06/10/2014 23:20	06/10/2014 23:55	46586	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46575	06/10/2014 22:05	06/10/2014 22:55	46577	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46576	06/10/2014 22:05	06/10/2014 22:55	46578	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46572	06/10/2014 21:15	06/10/2014 23:00	46582	Burnie Sheffield No. 2 110kV line and Palooa Sheffield 110kV line	TAS	Lightning	GPATS



Start MN	Start Date	Actual End Date	End MN	Reclassified Equipment	Region	Reason	Source
46573	06/10/2014 21:15	06/10/2014 23:00	46583	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
46571	06/10/2014 21:05	06/10/2014 23:00	46581	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46570	06/10/2014 21:00	06/10/2014 23:00	46580	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46568	05/10/2014 18:00	05/10/2014 19:40	46569	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46552	30/09/2014 15:45	30/09/2014 17:55	46556	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46553	30/09/2014 15:45	30/09/2014 17:55	46557	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46543	29/09/2014 00:25	29/09/2014 02:10	46545	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
46541	28/09/2014 21:15	28/09/2014 22:00	46542	Liapootah - Palmerston No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46536	27/09/2014 15:15	27/09/2014 20:30	46537	Trip of the Stanwell - Calvale 8873 and 8874 275 kV lines	QLD	Bushfires	INJI
46523	25/09/2014 13:10	25/09/2014 16:40	46529	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46445	11/09/2014 12:10	11/09/2014 13:10	46446	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46437	09/09/2014 18:10	10/09/2014 00:00	46439	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
46436	09/09/2014 18:05	10/09/2014 00:00	46438	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
46430	09/09/2014 15:40	09/09/2014 23:00	46432	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46431	09/09/2014 15:40	09/09/2014 23:00	46433	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46420	08/09/2014 13:45	08/09/2014 16:05	46421	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Bushfires	INJI
46414	07/09/2014 21:45	07/09/2014 22:55	46417	Collinsville - Mackay tee Proserpine 7125 and 7126 132kV Lines	QLD	Lightning	GPATS
46412	07/09/2014 17:40	07/09/2014 22:55	46415	Kemmis Moranbah tee Burton Downs 7117 132kV line and Nebo Moranbah tee Coppabella 7118 132kV line	QLD	Lightning	GPATS
46413	07/09/2014 17:40	07/09/2014 22:55	46416	Moranbah Goonyella 7369 and 7370 132kV lines	QLD	Lightning	GPATS
46376	02/09/2014 10:50	02/09/2014 12:45	46380	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46377	02/09/2014 10:50	02/09/2014 12:45	46379	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46354	27/08/2014 10:00	27/08/2014 16:30	46357	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46350	26/08/2014 22:50	27/08/2014 01:15	46351	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
46338	24/08/2014 01:30	24/08/2014 02:30	46339	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46314	16/08/2014 21:30	16/08/2014 23:55	46315	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS



Start MN	Start Date	Actual End Date	End MN	Reclassified Equipment	Region	Reason	Source
46292	13/08/2014 21:15	15/08/2014 17:15	46304	Trip of Dederang - Mount Beauty No.1 and No.2 220 kV lines	VIC	Other	Event actually occurred
46253	07/08/2014 20:10	15/08/2014 09:30	46301	Trip of Nebo - Mackay 7305 132 kV line at the Nebo end	QLD	Other	Event actually occurred
46228	01/08/2014 19:20	01/08/2014 20:45	46230	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46229	01/08/2014 19:20	01/08/2014 20:45	46231	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46225	01/08/2014 16:05	01/08/2014 17:25	46227	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46224	01/08/2014 16:05	01/08/2014 17:25	46226	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46220	01/08/2014 05:15	01/08/2014 06:00	46221	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
46214	01/08/2014 01:40	01/08/2014 02:20	46217	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46211	31/07/2014 22:00	31/07/2014 22:40	46212	Chapel St - Liapootah No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46210	31/07/2014 21:40	01/08/2014 02:00	46215	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46209	31/07/2014 21:15	01/08/2014 02:00	46216	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46203	31/07/2014 17:55	31/07/2014 19:25	46207	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
46204	31/07/2014 17:55	31/07/2014 19:25	46208	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
46202	31/07/2014 17:45	31/07/2014 18:15	46205	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46201	31/07/2014 17:35	31/07/2014 18:35	46206	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46191	31/07/2014 07:10	31/07/2014 07:55	46192	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46184	31/07/2014 00:55	31/07/2014 05:00	46189	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46183	30/07/2014 22:30	04/08/2014 17:10	46240	Trip of Chapel St - Gordon No.2 220 kV line and Cluny generating unit	TAS	Other	Event actually occurred
46177	29/07/2014 23:30	30/07/2014 00:40	46180	Chapel St - Liapootah No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46178	29/07/2014 23:30	30/07/2014 00:40	46179	Liapootah - Palmerston No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46173	29/07/2014 21:45	29/07/2014 23:00	46176	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46172	29/07/2014 21:30	29/07/2014 23:00	46175	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46171	29/07/2014 20:25	29/07/2014 23:00	46174	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46166	29/07/2014 17:35	29/07/2014 19:05	46168	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46165	29/07/2014 17:30	29/07/2014 20:25	46169	Chapel St - Liapootah No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS



Start MN	Start Date	Actual End Date	End MN	Reclassified Equipment	Region	Reason	Source
46159	29/07/2014 09:30	29/07/2014 10:05	46161	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
46158	29/07/2014 09:25	29/07/2014 10:20	46162	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46154	29/07/2014 07:20	29/07/2014 07:45	46155	Chapel St - Liapootah No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46151	29/07/2014 05:15	29/07/2014 06:30	46153	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46150	29/07/2014 03:20	29/07/2014 05:50	46152	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46145	29/07/2014 00:20	29/07/2014 02:00	46148	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46144	29/07/2014 00:05	29/07/2014 02:05	46149	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46139	28/07/2014 17:20	28/07/2014 19:20	46143	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
46138	28/07/2014 17:00	28/07/2014 18:45	46140	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
46129	25/07/2014 14:40	25/07/2014 15:30	46130	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
46076	18/07/2014 18:30	18/07/2014 22:15	46081	Trip of T4 and T5 275/66 kV transformers at LeFevre and Quarantine PS unit GTA5	SA	Other	Event actually occurred
46069	17/07/2014 16:30	17/07/2014 18:05	46071	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
46048	15/07/2014 00:50	18/07/2014 16:55	46074	Trip of Torrens Island units B3 and B4	SA	Other	Event actually occurred
45952	28/06/2014 20:25	28/06/2014 22:15	45954	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
45941	26/06/2014 09:15	26/06/2014 10:00	45942	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45939	26/06/2014 07:20	26/06/2014 08:10	45940	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
45935	26/06/2014 04:20	26/06/2014 05:30	45937	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45934	26/06/2014 04:10	26/06/2014 05:10	45938	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
45933	26/06/2014 04:00	26/06/2014 04:55	45936	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45925	25/06/2014 22:55	25/06/2014 23:40	45929	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
45924	25/06/2014 22:45	25/06/2014 23:25	45928	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45922	25/06/2014 22:20	25/06/2014 23:05	45926	George Town - Hadspen No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45913	23/06/2014 15:20	23/06/2014 18:00	45914	Glenrowan - Dederang No. 1 and No. 3 220kV lines	VIC	Lightning	GPATS
45912	23/06/2014 15:15	23/06/2014 18:00	45915	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS



Start MN	Start Date	Actual End Date	End MN	Reclassified Equipment	Region	Reason	Source
45907	21/06/2014 23:45	24/06/2014 01:30	45908	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
45885	16/06/2014 14:55	16/06/2014 15:50	45889	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
45884	16/06/2014 14:45	16/06/2014 15:50	45888	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
45890	16/06/2014 14:10	18/06/2014 09:15	45896	Trip of the H11 NEBO No 3 132kV Bus	QLD	Other	Event actually occurred
45801	27/05/2014 18:05	27/05/2014 19:40	45803	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
45800	27/05/2014 17:40	27/05/2014 19:40	45802	Dederang - Glenrowan No.1 and No.3 220kV lines	VIC	Lightning	GPATS
45790	27/05/2014 13:45	27/05/2014 14:20	45797	Hazelwood PS - Rowville No. 1 and 2 220kV lines	VIC	Lightning	GPATS
45791	27/05/2014 13:45	27/05/2014 14:20	45795	Rowville Yallourn No. 5 and No. 6 220kV lines	VIC	Lightning	GPATS
45786	27/05/2014 11:10	27/05/2014 13:50	45792	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
45787	27/05/2014 11:10	27/05/2014 13:50	45793	Dederang - Glenrowan No.1 and No.3 220kV lines	VIC	Lightning	GPATS
45781	27/05/2014 06:30	27/05/2014 09:05	45782	Dederang - Glenrowan No.1 and No.3 220kV lines	VIC	Lightning	GPATS
45780	27/05/2014 05:30	27/05/2014 09:05	45783	Eildon - Mt Beauty No. 1 and No. 2 220kV lines	VIC	Lightning	GPATS
45745	22/05/2014 07:40	22/05/2014 08:40	45747	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
45743	22/05/2014 07:30	22/05/2014 08:40	45746	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45736	19/05/2014 21:15	19/05/2014 21:45	45737	Norwood-Scottsdale-Derby 110kV Line and Norwood-Scottsdale 110kV Line	TAS	Lightning	GPATS
45726	17/05/2014 08:20	17/05/2014 10:00	45729	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
45727	17/05/2014 08:20	17/05/2014 09:40	45728	Farrell - Sheffield No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45724	17/05/2014 06:05	17/05/2014 06:40	45725	Farrell - John Butters 220kV line & Farrell - Rosebery Tee Queenstown - Newton 110kV line	TAS	Lightning	GPATS
45722	17/05/2014 00:05	17/05/2014 00:55	45723	Farrell Reece No. 1 and No. 2 220kV lines	TAS	Lightning	GPATS
45702	09/05/2014 19:10	13/10/2014 13:30	46626	Trip of APD-HYTS-TRTS No.1 500 kV line, MLTS-TRTS No.1 500 kV line and APD No.3 500 kV bus	VIC	Other	Event actually occurred
45674	04/05/2014 05:50	22/05/2014 17:40	45757	Yadnarie to Pt Lincoln 132 kV line at the Port Lincoln end only.	SA	Other	Event actually occurred
45660	02/05/2014 14:35	02/05/2014 16:25	45661	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
45653	02/05/2014 05:10	02/05/2014 08:40	45657	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS
45651	02/05/2014 02:15	02/05/2014 03:00	45652	Tarong - Chincilla 7183 and 7168 132 kV Lines	QLD	Lightning	GPATS



APPENDIX B. NON-CREDIBLE CONTINGENCY EVENTS 1 MAY 2014 TO 31 OCTOBER 2014

Table 4 Non-Credible Contingency Events 1 May 2014 to 31 October 2014

Date of contingency	Description	Region	Reason	Was the contingency then reclassified?	Comments
29/10/2014 11:40	Trip of T145 Townsville No. 2 132kV Busbar	QLD	Other	No	Powerlink advised that the trip was caused by incorrect isolation during planned maintenance. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
23/10/2014 17:10	Trip of Liddell Tamworth 330kV transmission Line 84 and the Bayswater No3 Generator	NSW	Other	No	AEMO did not reclassify this event as TransGrid advised that there was no increased risk of the event reoccurring
19/10/2014 21:55	Trip of Ballarat to Elaine to Moorabool 220kV Line and Waubra Windfarm reduction	VIC	Other	Yes	AEMO reclassified this event as it remained possible that the non-credible contingency event would reoccur due to issues at Waubra WF. This reclassification remains current at the time of publishing this report
18/10/2014 22:05	Trip of Eildon to Thomastown 220 kV line and Eildon No2 generator	VIC	Other	Yes	AEMO reclassified this event as it remained possible that the non-credible contingency event would reoccur due to issues at Eildon PS. AEMO cancelled the reclassification in March 2015
02/10/2014 10:50	Trip of R3 Bulli CB 6042 330kV CB	QLD	Other	No	Powerlink advised that the trip was caused by incorrect wiring during. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
28/09/2014 13:05	Trip of B2 and L3 Transformers at Richmond Terminal Station	VIC	Other	No	AusNet advised that the trip was caused by incorrect protection operation. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
26/09/2014 09:55	Trip of Barron Gorge - Kamerunga (7143) and Woree - Kamerunga (7142) 132 kV lines	QLD	Other	No	Powerlink advised that the trip was caused by incorrect protection operation. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
16/09/2014 15:20	Trip of Keilor No.1 220kV Busbar	VIC	Other	No	AusNet advised that the trip was caused by incorrect operation of a circuit breaker. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur



Date of contingency	Description	Region	Reason	Was the contingency then reclassified?	Comments
11/09/2014 17:15	Trip of Braemar – Western Downs 8864 275kV transmission line at the Braemar end only	QLD	Other	No	Powerlink advised that the trip was caused by incorrect isolation during planned maintenance. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
20/08/2014 09:30	Trip of Mortlake Unit 11 and 12	VIC	Other	No	Origin advised that the trip was caused by external gas supply issues to the power station. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
13/08/2014 20:00	Trip of Dederang - Mount Beauty No1 and No2 220 kV transmission lines	VIC	Other	Yes	AusNet advised that the trip was caused by incorrect protection operation. AEMO reclassified this event as the cause of the non-credible contingency was initially unknown. AEMO cancelled the reclassification on 15/08/2014
07/08/2014 15:30	Trip of Nebo - Mackay (7305) 132kV line at Nebo end only	QLD	Other	Yes	Powerlink advised that the trip was caused by a fault to CB wiring. AEMO reclassified this event as the cause of the non-credible contingency was initially unknown. AEMO cancelled the reclassification on 15/08/2014
02/08/2014 17:35	Trip of East Rowville B2 and Cranbourne B3 Transformers	VIC	Other	No	AusNet advised that the trip was caused by a failed surge diverter and incorrect wiring. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
31/07/2014 12:15	Trip of George Town 110kV A Busbar	TAS	Other	No	TasNetworks advised that the trip was caused by human error. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
30/07/2014 22:05	Trip of Chapel Street - Gordon No.2 220kV transmission line and Cluny generating unit	TAS	Other	Yes	AEMO reclassified this event as the cause of the non-credible contingency was unknown. AEMO cancelled the reclassification on 04/08/2014 as the issue with Cluny generating unit was rectified
18/07/2014 16:15	Trip of Lefevre T4 and T5 Transformers and Quarantine PS Unit GTA5	SA	Other	Yes	ElectraNet advised that the trip was caused by a failed line conductor. AEMO reclassified this event as the cause of the non-credible contingency was unknown. AEMO cancelled the reclassification on the same day
14/07/2014 19:40	Trip of Torrens Island B3 and B4 units	SA	Other	Yes	AGL advised that the trip was caused by incorrect protection operation. AEMO reclassified this event as the cause of the non-credible contingency was unknown. AEMO cancelled the reclassification on 15/08/2014
01/07/2014 19:25	Trip of Basslink Loy Yang Converter Station 500 kV Busbar	VIC	Other	No	AusNet advised that the trip was caused by incorrect protection operation. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur



Date of contingency	Description	Region	Reason	Was the contingency then reclassified?	Comments
16/06/2014 14:00	Trip of H11 Nebo No 3 132kV Busbar	QLD	Other	Yes	Powerlink advised that the trip was caused by incorrect protection operation. AEMO reclassified this event as the cause of the non-credible contingency was initially unknown. AEMO cancelled the reclassification on 18/06/2014
05/06/2014 14:35	Trip of H22 Loganlea No.1 110kV busbar	QLD	Other	No	Powerlink advised that the trip was caused by incorrect protection operation during planned maintenance. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
28/05/2014 17:00	Trip of H10 Bouldercombe No 2 and No 4 132 kV Busbars	QLD	Other	No	Powerlink advised that the trip was caused by human error during planned maintenance. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
28/05/2014 09:55	Trip of both Mortlake Units 11 and 12	VIC	Other	No	Origin advised that the trip was caused by human error. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
23/05/2014 12:40	Trip of Yallourn W3 and W4	VIC	Other	No	AusNet advised that the trip was caused by loss of DC supplies. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur
09/05/2014 06:45	Trip APD-HYTS-TRTS and MLTS-TRTS 500kV Lines, APD 3 Bus and Portland WF	VIC	Other	Yes	AusNet advised that the trip was caused by human error and incorrect protection operation. AEMO reclassified this event until the cause of the non-credible contingency was rectified. AEMO cancelled the reclassification on 13/10/2014
04/05/2014 05:40	Trip of Yadnarie to Pt Lincoln 132Kv Line at Pt Lincoln end only	SA	Other	Yes	ElectraNet advised that the trip was caused by incorrect protection operation. AEMO reclassified this event as the cause of the non-credible contingency was initially unknown. AEMO cancelled the reclassification on 22/05/2014
01/05/2014 15:30	Trip of Newcastle B1 330kV Busbar	NSW	Other	No	TransGrid advised that the trip was caused by incorrect wiring. AEMO did not reclassify the event as corrective actions were taken to ensure the event would not reoccur



APPENDIX C. MARKET IMPACT OF RECLASSIFICATION CONSTRAINTS

Table 5 Reclassification constraints that bound over the reporting period

Reclassification Start time	Reclassification End time	Reclassified Equipment	Constraint	Number of Dispatch Intervals binding
25/06/2014 22:20	25/06/2014 23:05	George Town - Hadspen No. 1 and No. 2 220kV lines	T>T_SHGT_HAGT_N-2	9
26/06/2014 04:00	26/06/2014 04:55	Farrell Reece No. 1 and No. 2 220kV lines	F_T++FARE_N-2_TG_R60	1
26/06/2014 04:20	26/06/2014 05:30	Farrell - Sheffield No. 1 and No. 2 220kV lines	F_T++FASH_N-2_TG_R60	6
			F_T+FASH_N-2_RREG	16
			F_T++FASH_N-2_TG_R6	17
28/07/2014 17:20	28/07/2014 19:20	Farrell - Sheffield No. 1 and No. 2 220kV lines	F_T++FASH_N-2_TG_R60	15
			F_T+FASH_N-2_RREG	2
			T_FASH_MAXGEN_1	4
			F_T++FASH_N-2_TG_R5	3
29/07/2014 00:05	29/07/2014 02:05	Farrell - Sheffield No. 1 and No. 2 220kV lines	F_T++FASH_N-2_TG_R6	24
			F_T++FASH_N-2_TG_R60	24
			T_FASH_MAXGEN_1	14
			T>T_FASH_1_N-2	20
29/07/2014 03:20	29/07/2014 05:50	Farrell Reece No. 1 and No. 2 220kV lines	F_T++FARE_N-2_TG_R6	30
			F_T++FARE_N-2_TG_R60	30
			F_T+FARE_N-2_RREG	3
29/07/2014 21:45	29/07/2014 23:00	Farrell - Sheffield No. 1 and No. 2 220kV lines	T>T_FASH_1_N-2	6
29/07/2014 23:30	30/07/2014 00:40	Liapootah - Palmerston No. 1 and No. 2 220kV lines	T>T_NIL_LIPM_N-2_2B	11
31/07/2014 17:45	31/07/2014 18:15	Farrell Reece No. 1 and No. 2 220kV lines	F_T+FARE_N-2_TG_R5	1
			F_T+FARE_N-2_TG_R6	1
			F_T+FARE_N-2_TG_R60	1
31/07/2014 21:40	01/08/2014 02:00	Farrell Reece No. 1 and No. 2 220kV lines	F_T+FARE_N-2_TG_R5	1
			F_T+FARE_N-2_TG_R6	1
			F_T+FARE_N-2_TG_R60	1
24/08/2014 01:30	24/08/2014 02:30	Farrell - Sheffield No. 1 and No. 2 220kV lines	F_T+FASH_N-2_RREG	2
28/09/2014 21:15	28/09/2014 22:00	Liapootah - Palmerston No. 1 and No. 2 220kV lines	T>T_NIL_LIPM_N-2_2B	9
06/10/2014 21:00	06/10/2014 23:00	Farrell - Sheffield No. 1 and No. 2 220kV lines	T_T_FASH_5_N-2	24



Reclassification Start time	Reclassification End time	Reclassified Equipment	Constraint	Number of Dispatch Intervals binding
06/10/2014 22:05	06/10/2014 22:55	Rowville Yallourn No. 5 and No. 6 220kV lines	V>V_NIL_ROYP56_R5_1	6
27/10/2014 02:10	27/10/2014 04:45	Farrell Reece No. 1 and No. 2 220kV lines	F_T+FARE_N-2_RREG	4
			F_T+FARE_N-2_TG_R5	4
			F_T+FARE_N-2_TG_R6	5
			F_T+FARE_N-2_TG_R60	4
27/10/2014 02:30	27/10/2014 04:45	Farrell - Sheffield No. 1 and No. 2 220kV lines	F_T+FASH_N-2_RREG	26
			F_T+FASH_N-2_TG_R5	27
			F_T+FASH_N-2_TG_R6	26
			F_T+FASH_N-2_TG_R60	24