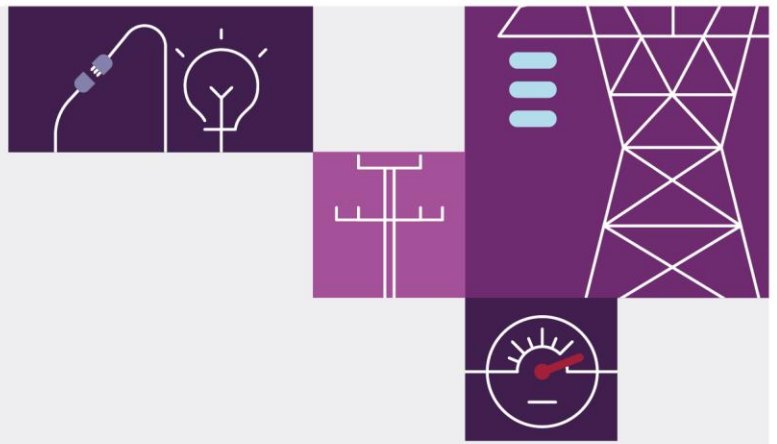


# Trip of Red Cliffs – Kiamal 220 kV line, Kiamal synchronous condenser, Buronga No. 2 and No. 3 synchronous condensers

September 2022

Reviewable Operating Incident  
Report under the National  
Electricity Rules





# Important notice

## Purpose

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

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## Incident classifications

Classification	Detail
Time and date of Incident	0423 hrs 1 March 2022
Region of incident	Victoria, New South Wales
Affected regions	Victoria, New South Wales
Event type	Lightning, transmission equipment failure, protection mal-operation
Generation impact	110 MW
Customer load impact	None
Associated reports	Recurring trips of Buronga No. 1, 2, and 3 synchronous condensers incident report (not published as of the date of this report)

## Abbreviations

Abbreviation	Term
AC	Alternating current
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
CB	Circuit breaker
CT	Current transformer
GFT2	Generator Fast Trip Scheme 2
Hz	Hertz
IR	Insulation resistance
KMTS	Kiamal Terminal Station
kV	Kilovolts
ms	Milliseconds
MW	Megawatts
NEM	National Electricity Market
NER	National Electricity Rules
RCTS	Red Cliffs Terminal Station
SPS	Special Protection Scheme
TNSP	Transmission network service provider
VFRB	Very Fast Run Back



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# 1 Overview

This report relates to a reviewable operating incident<sup>1</sup> that occurred on 1 March 2022 in Victoria and New South Wales. The incident involved the three-phase tripping and successful auto-reclose of the Red Cliffs (RCTS) – Kiamal (KMTS)<sup>2</sup> 220 kilovolts (kV) line due to a lightning strike approximately 23.4 km from KMTS on 1 March 2022<sup>3</sup>.

The tripping of the RCTS – KMTS 220 kV line initiated the operation of the Murraylink Automatic Very Fast Run Back (VFRB) scheme, since Murraylink was transferring 140 megawatts (MW) in the direction of South Australia.

The Generator Fast Trip Scheme 2 (GFT2)<sup>4</sup> was also triggered and operated as designed to trip Murra Warra Wind Farm, which was generating 110 MW.

As a result of this incident, the Buronga No. 2 and No. 3 synchronous condensers tripped. The tripping of the Buronga No. 2 and No. 3 synchronous condensers caused an inter-trip to be sent to Darlington Point Solar Farm, which was not generating at the time. The Kiamal Solar Farm synchronous condenser rode through the initial fault, but its synchronous condenser shutdown sequence was initiated as a result. The internal circuit breaker (CB) was subsequently tripped as part of this sequence, 16 seconds after the fault on the KTMS – RCTS 220 kV line was cleared.

Aside from the tripping of Murra Warra WF by the GFT2 scheme, there was no loss of generation or customer load as a result of this incident.

This was determined to be a reviewable operating incident as it involved a three-phase fault on a 220 kV transmission line, and non-credible trip of additional power system elements. AEMO is therefore required to assess the adequacy of the provision and response of facilities and services and the appropriateness of actions taken to restore or maintain power system security<sup>5</sup>.

AEMO has concluded that:

1. The three-phase fault on the RCTS – KMTS 220 kV line was caused by a lightning strike on the line. At the time of publication, AusNet had not advised AEMO of any abnormal conditions that existed on the line that would warrant AEMO reclassifying a three-phase fault on this line as a credible contingency during periods of lightning activity.
2. The delayed shutdown of the Kiamal synchronous condenser was due to low voltage on the internal 400 volts (V) alternating current (AC) system, which was caused by the three-phase fault on the RCTS – KMTS 220 kV line. The subsequent trip of the breakers 7422B and RC2A at KMTS was due to the failure of the synchronous condenser internal CB.

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<sup>1</sup> See National Electricity Rules (NER) clause 4.8.15(a)(1)(i), as the event relates to a non-credible contingency event; and the Australian Energy Market Commission (AEMC) Reliability Panel Guidelines for Identifying Reviewable Operating Incidents.

<sup>2</sup> The Kiamal substation in Victoria is owned and operated by Transgrid, as it was built as a contestable asset.

<sup>3</sup> Transmission system CBs are typically capable of single-phase or three-phase auto-reclose. The auto-reclose function means that after a fault is detected, the breaker will open (either a single phase or all three phases), clearing the fault, and then attempt to reclose again after a specified deadtime/delay. If the fault is still present, the breaker will lockout auto-reclose and remain open. The dead time for auto-reclose, in this case, is approximately four seconds for 220 kV.

<sup>4</sup> The GFT2 operates for three feeder and outage combinations: Trip of Red Cliffs No. 2 or No. 2 220 kV bus, or; Horsham – Murra Warra – Kiamal (HOTS-MRTS-KMTS) line opened at KMTS, or; Red Cliffs – Kiamal (RCTS – KMTS) opened at RCTS or KMTS. The scheme trips 33 kV collector groups 1, 2, 3 and 4 of the Murra Warra Wind Farm.

<sup>5</sup> See NER clause 4.8.15(b).

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3. The tripping of the Buronga No. 2 and No. 3 synchronous condensers was caused by the mal-operation of stator differential protection.
  4. The power system remained in a secure operating state throughout this incident.

This report is prepared in accordance with clause 4.8.15(c) of the National Electricity Rules (NER). It is based on information provided by AusNet<sup>6</sup>, Transgrid, Octopus Investments, Total Eren and AEMO<sup>7</sup>.

National Electricity Market (NEM) time (Australian Eastern Standard Time [AEST]) is used in this report.

## 2 The incident

### 2.1 Pre-event conditions

Prior to this incident at 0423 hrs on 1 March 2022, the RCTS – KMTS 220 kV line, the Kiamal Solar Farm, the Darlington Point Solar Farm, the Kiamal synchronous condenser and the Buronga No. 2 and No. 3 synchronous condensers were all in service. Neither of the solar farms was generating.

### 2.2 The incident

At 0423 hrs, there was a three-phase fault on the RCTS – KMTS 220 kV line. As a result, the line CBs at RCTS and KMTS tripped to clear the fault within 70 milliseconds (ms). After 4 seconds, the RCTS – KMTS 220 kV line successfully auto-reclosed. A further 5 seconds later, the RC2A CB at KMTS reclosed.

The tripping of the RCTS – KMTS 220 kV line initiated the operation of the Murraylink Automatic VFRB scheme at 0424 hrs since Murraylink was transferring 140 MW in the direction of South Australia at the time. The VFRP operated as designed to runback Murraylink to 0 MW.

At 0424 hrs, the GFT2 was also triggered and operated to trip Murra Warra Wind Farm, which was generating 110 MW.

Immediately after the RC2A breaker at KMTS reclosed, placing the line on load, the internal CBs of the Buronga No. 2 and No. 3 synchronous condensers (CB 1722 and CB 1732) tripped on stator differential protection. This event automatically sends an inter-trip to the Darlington Point Solar Farm, which was not generating at the time.

At 0424 hrs, 8 seconds after the RC2A CB at KMTS reclosed, the internal CB of the Kiamal synchronous condenser, GS001, opened. A further 5 seconds later, the Transgrid Kiamal synchronous condenser CBs 7422B and RC2A at KMTS tripped due to operation of their No. 1 and No. 2 generator protection.


At 0616 hrs, the Buronga No. 2 synchronous condenser CB 1722 was successfully synchronised, and at 0626 hrs the Buronga No. 3 synchronous condenser CB 1732 was also successfully synchronised.

On 5 March 2022, the Kiamal 220 kV synchronous condenser bay was re-energised at 1637 hrs by closing the 7422B and RC2A CBs at KMTS. At 1753 hrs, Total Eren attempted to close the Kiamal synchronous condenser

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<sup>6</sup> This report is based on information available to AusNet transmission Group Pty Ltd at the time of writing this report. AusNet Transmission Group Pty Ltd reserves the right to amend, clarify or correct information contained in the report.

<sup>7</sup> AusNet is the transmission network service provider (TNSP) for Victoria, Transgrid is the transmission network service provider for New South Wales as well as the Kiamal substation in Victoria, Octopus Investments is the asset owner of the Buronga No. 2 and No. 3 synchronous condensers, and Total Eren is the asset owner of the Kiamal synchronous condenser.



internal 15 kV disconnecter GS002, which caused the immediate tripping of the 220 kV 7422B and RC2A CBs. Following this, Total Eren requested that Transgrid isolate and earth the synchronous condenser bay for further investigation and repairs.

Initially, the Kiamal Solar Farm remained constrained to an output of 0 MW while the Kiamal synchronous condenser was out of service. On 5 April 2022, following the submission and acceptance of a non-compliance notice by AEMO, partial operation of Kiamal Solar Farm without the Kiamal synchronous condenser online was permitted with a limit of 50 MW and 40 inverters.

Figure 1 in Appendix A1 shows which CBs tripped during the incident.

## 2.3 Analysis

The following is based on information provided by AusNet, Transgrid, Octopus Investments and Total Eren.

Transgrid and AusNet have confirmed that the three-phase fault on the RCTS – KMTS 220 kV line was caused by a lightning strike and operations logs indicate that there were storms in the area of the line at the time of the trip. The phase voltages at Red Cliffs dropped to 0.2 pu during the fault.

Protection records indicate that both No. 1 and No. 2 differential and distance Zone 1 protection operated to trip the line with an estimated distance to fault of 23.4 km from RCTS<sup>8</sup>. The line protection operated as designed and cleared the fault within 70 ms. The line CBs successfully auto-reclosed 4 seconds after the fault was cleared, as per design.

The tripping of the RCTS – KMTS 220 kV line initiated the operation of the Murraylink VFRB scheme, which was transferring 140 MW in the direction of South Australia. The scheme operated successfully and as designed. At 0424 hrs, the GFT2 was also triggered and operated as designed to trip Murra Warra WF, which was generating 110 MW.

The trip of the RCTS – KMTS 220 kV line also caused the Buronga No. 1 and No. 2 synchronous condensers to trip on stator differential protection at 0424 hrs. Upon inspection, there were no signs of damage and the synchronous condensers were successfully returned to service at 0616 hrs and 0626 hrs, respectively. Octopus Investments advised AEMO that the trip was a suspected protection maloperation.


The Buronga No. 2 and No. 3 synchronous condensers have tripped several times since November 2020 due to maloperation of their stator differential protection elements and to suspected Electro Magnetic Interference (EMI) from lightning causing the maloperation of their vibration protection. The past trips of the Buronga synchronous condensers are the subject of a separate AEMO incident event report<sup>9</sup>.

Octopus Investments has advised AEMO that it has engaged ABB for advice on the protection relay maloperations and is working with Transgrid to investigate and rectify the issue. The oscillography files for the previous tripping events indicated that current transformer (CT) saturation triggered the stator differential protection elements.

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<sup>8</sup> Many elements of transmission equipment have two sets of primary protection systems to provide redundancy. Both these protection systems monitor the protected equipment and both systems will attempt to trip the equipment should a monitored (or in zone) fault occur. To differentiate between one primary protection system and another, AusNet and Transgrid refer to one system as the No. 1 protection and the other as the No. 2 protection.

<sup>9</sup> A separate AEMO incident report will be published containing details of the past recent reviewable incidents where the Buronga No. 2 and No. 3 synchronous condensers tripped – see Recurring Trips of Buronga No. 1, 2, and 3 Synchronous Condensers incident report at <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-events-and-reports/power-system-operating-incident-reports>.



The Buronga No. 2 and No. 3 synchronous condensers have a System Strength Services Agreement (SSSA) with AEMO, which has a November – March service exclusion period during which maintenance cannot be undertaken. The investigation requirements are still being determined, and the Buronga No. 2 and No. 3 synchronous condensers have remained in service since this event. It is planned that, as part of this investigation, the synchronous condensers will be shut down for a short period to inspect the secondary circuit from the GE GG60 relay through to the CT on either side of the stator.

At 0424 hrs, 8 seconds after the RC2A breaker at KMTS reclosed, the internal CB of the Kiamal synchronous condenser, GS001, opened. A further 5 seconds later, the Transgrid Kiamal synchronous condenser CBs 7422B and RC2A at KMTS tripped due to operation of the No. 1 and No. 2 generator protection. Control system logs indicate that the synchronous condenser shutdown sequence was initiated due to the low voltage on the 400 V AC system that occurred during the fault on the RCTS – KMTS 220 kV line. The 400 V AC system is supplied through a 15 / 0.4 kV auxiliary transformer, which shares the same connection point as the synchronous condenser. The control system operated as designed to shut down the synchronous condenser. Subsequently, the Transgrid breakers 7422B and RC2A at KMTS tripped on No. 1 and No. 2 generator protection as expected.

There is a Special Protection Scheme (SPS) that sends an inter-trip to the Kiamal Solar Farm if the Kiamal synchronous condenser trips while the Kiamal Solar Farm is generating. Consistent with its design, the SPS did not send a trip signal to Kiamal Solar Farm as it was not generating at the time.


Following the trip of the Kiamal synchronous condenser, a visual inspection was completed on 1 March 2022 by the Total Eren site team; this inspection did not identify any noticeable damage. On 1 March 2022, Total Eren attempted to restart the synchronous condenser using the automated restart sequence. The restart was unsuccessful, and it was determined that a 20 hertz (Hz) signal generator component was damaged. This component was subsequently replaced by Siemens. Visual inspections on the 15 kV equipment and Insulation Resistance (IR) testing on the bay equipment found no further evidence of electrical damage.

Later, on 5 March 2022, the Kiamal 220 kV synchronous condenser bay was re-energised at 1637 hrs by closing the 7422B and RC2A breakers at KMTS. At 1753 hrs, Total Eren attempted to close the synchronous condenser disconnect switch GS002. Once it was closed, a fault developed indicating that the synchronous condenser internal CB GS001 had failed. The fault caused the immediate tripping of the Transgrid 220 kV 7422B and RC2A breakers. Following this, given that the 15 kV breaker and disconnect switch could not be used as isolation points for the synchronous condenser, Total Eren requested that Transgrid isolate and earth the 220 kV synchronous condenser bay for investigation and repairs. Further IR tests conducted by Siemens revealed abnormal resistance on the B phase of the Kiamal synchronous condenser circuit breaker GS001 CB, confirming it had failed.

Total Eren later advised that Siemens was investigating and undertaking repair works, and it had been determined that the B phase of the internal CB of the Kiamal synchronous condenser had failed and required replacement. Total Eren advised that a replacement CB had been ordered with an expected delivery date of mid-late April 2022. Total Eren informed AEMO that the Kiamal synchronous condenser would remain out of service until early May 2022.

Total Eren has since commissioned the replacement CB, and successfully returned the synchronous condenser to service on 29 April 2022. Total Eren confirmed that the failed phase of the CB was shipped to Siemens in Germany, where Siemens is undertaking a detailed investigation to determine the root cause of the failure. Following the successful return to service of the synchronous condenser, the output of Kiamal Solar Farm is no longer restricted based on the status of the synchronous condenser.





On 19 August 2022, Total Eren confirmed that Siemens had determined that the cause of the CB failure was a leak in one of the three vacuum interrupter bottles within the CB.

## 3 Power system security

AEMO is responsible for power system security in the NEM. This means AEMO is required to operate the power system in a secure operating state to the extent practicable and take all reasonable actions to return the power system to a secure state following a contingency event in accordance with the NER<sup>10</sup>.

The power system was in a secure operating state throughout this incident, and no action was required by AEMO to restore or maintain power system security. In addition, the Frequency Operating Standard (FOS)<sup>11</sup> was met in relation to this incident.

### 3.1 Reclassification

AEMO assessed whether to reclassify this incident as a credible contingency event<sup>12</sup>.

AEMO determined that the cause of this non credible contingency event was not known and that it was not satisfied that this event was unlikely to re-occur. AEMO therefore reclassified this event as a credible contingency event from 0830 hrs on 1 March 2022 until further notice. Initially, it was unclear whether the tripping of the Kiamal synchronous condenser and the Buronga No. 2 and No. 3 synchronous condensers were separate events. Therefore, only the RCTS – KMTS 220 kV line and the Kiamal synchronous condenser were reclassified.

After consulting with Transgrid, AEMO determined that there was insufficient evidence that the tripping of the Buronga No. 2 and No. 3 synchronous condensers was a separate event from the tripping of RCTS – KMTS 220 kV line and Kiamal synchronous condenser. Hence, from 1536 hrs on 1 March 2022 AEMO included the Buronga No. 2 and No. 3 synchronous condensers in the reclassification until further notice.

On 19 August 2022, Total Eren confirmed that Siemens had determined that the root cause of the CB failure was a leak in one of the vacuum interrupter bottles within the CB. Total Eren also advised that there was no reason to suspect the same issue was present in the remaining CBs nor the newly installed replacement 'B' phase CB. Based on this advice, AEMO removed the Kiamal synchronous condenser from the reclassification on 19 April 2022.

The reclassification of the RCTS – KMTS 220 kV line and the Buronga No. 2 and No. 3 synchronous condensers will remain in place until Octopus Investments provides AEMO with the findings of the detailed investigation, and confirms that any associated repair works have been completed on the Buronga No. 2 and No. 3 synchronous condensers.

At the time of publication, AusNet had not advised AEMO of any abnormal conditions that exist on the line that would warrant AEMO reclassifying a three- phase fault on this line as a credible contingency during periods of lightning activity.

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<sup>10</sup> Refer to AEMO's functions in section 49 of the National Electricity Law and the power system security principles in clause 4.2.6 of the NER.

<sup>11</sup> The FOS is available at <https://www.aemc.gov.au/sites/default/files/2020-01/Frequency%20operating%20standard%20-%20effective%201%20January%202020%20-%20TYPO%20corrected%2019DEC2019.PDF>.

<sup>12</sup> AEMO is required to assess whether or not to reclassify a non-credible contingency event as a credible contingency event – NER clause 4.2.3A(c) – and to report how the reclassification criteria were applied – NER clause 4.8.15(ca).

## 4 Market information

AEMO is required by the NER and operating procedures to inform the market about incidents as they progress. This section assesses how AEMO informed the market<sup>13</sup> over the course of this incident.

For this incident, AEMO informed the market on the following matters:

1. A non-credible contingency event – notify within two hours of the event<sup>14</sup>.
  - AEMO issued Market Notice (MN) 94967 at 0526 hrs on 1 March 2022, 63 minutes after the event, to advise of the non-credible contingency event.
  - AEMO issued MN 94972 at 0638 hrs on 1 March 2022 to advise that the RCTS – KMTS 220 kV line and the Buronga No. 2 and No. 3 synchronous condensers had been returned to service.
2. Reclassification, details, and cancellation of a non-credible contingency – notify as soon as practical<sup>15</sup>.
  - AEMO issued MN 94973 at 0840 hrs on 1 March 2022 to advise that AEMO had reclassified the incident as a credible contingency from 0830 hrs until further notice. The elements included in the reclassification were the RCTS – KMTS 220 kV line and the Kiamal synchronous condenser.
  - AEMO issued MN 94989 at 1536 hrs on 1 March 2022 to advise that AEMO had extended the reclassification to include the Buronga No. 2 and No. 3 synchronous condensers from 1530 hrs until further notice.
  - AEMO issued MN 101196 at 1335 hrs on 19 August 2022 to advise that AEMO had removed the Kiamal synchronous condenser from the reclassification from 1330 hrs until further notice.

## 5 Conclusions

AEMO has assessed this incident in accordance with clause 4.8.15(b) of the NER. In particular, AEMO has assessed the adequacy of the provision and response of facilities or services, and the appropriateness of actions taken to restore or maintain power system security.

AEMO has concluded that:


1. The three-phase fault on the RCTS – KMTS 220 kV line was caused by a lightning strike on the line. At the time of publication, AusNet had not advised AEMO of any abnormal conditions that existed on the line that would warrant AEMO reclassifying a three-phase fault on this line as a credible contingency during periods of lightning activity.
2. The delayed shutdown of the Kiamal synchronous condenser was due to low voltage on the internal 400 V AC system, which was caused by the three-phase fault on the RCTS – KMTS 220 kV line. The subsequent trip of

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<sup>13</sup> AEMO generally informs the market about operating incidents as they progress by issuing Market Notices – see <https://www.aemo.com.au/Market-Notices>.

<sup>14</sup> AEMO is required to notify the market of a non-credible contingency event within two hours of the event – AEMO, Power System Security Guidelines, Section 7.3.

<sup>15</sup> AEMO is required to notify the market of a reclassification – NER clause 4.2.3(g), details of the reclassification – 4.2.3(c), and when AEMO cancels the reclassification – 4.2.3(h).



the breakers 7422B and RC2A at KMTS was due to the failure of the synchronous condenser internal CB (see Figure 1 in Appendix A1).

3. The tripping of the Buronga No. 2 and No. 3 synchronous condensers was caused by the maloperation of their stator differential protection.
4. The power system remained in a secure operating state and the FOS was met for this incident.

## 6 Recommendations

AEMO recommends that Octopus Investments completes a detailed investigation to determine the root cause of the maloperations of the stator differential protection which have caused the recent trips of the Buronga No. 2 and No. 3 synchronous condensers. This report must include recommendations required to remediate any risk of reoccurrence.

AEMO also recommends that Transgrid review whether the recent performance of the Buronga No. 2 and No. 3 synchronous condensers met the technical requirements detailed in their connection agreement and, if applicable, review relevant limit advice.

Through this event, AEMO identified issues with assessing the technical performance of the Buronga No. 2 and No. 3 synchronous condensers due to how their performance standards were defined<sup>16</sup>. AEMO is currently reviewing how best to define performance standards for new synchronous condenser connections as part of the current access standard review<sup>17</sup>. AEMO intends to consult on the recommendations from this review in Q1 2023.

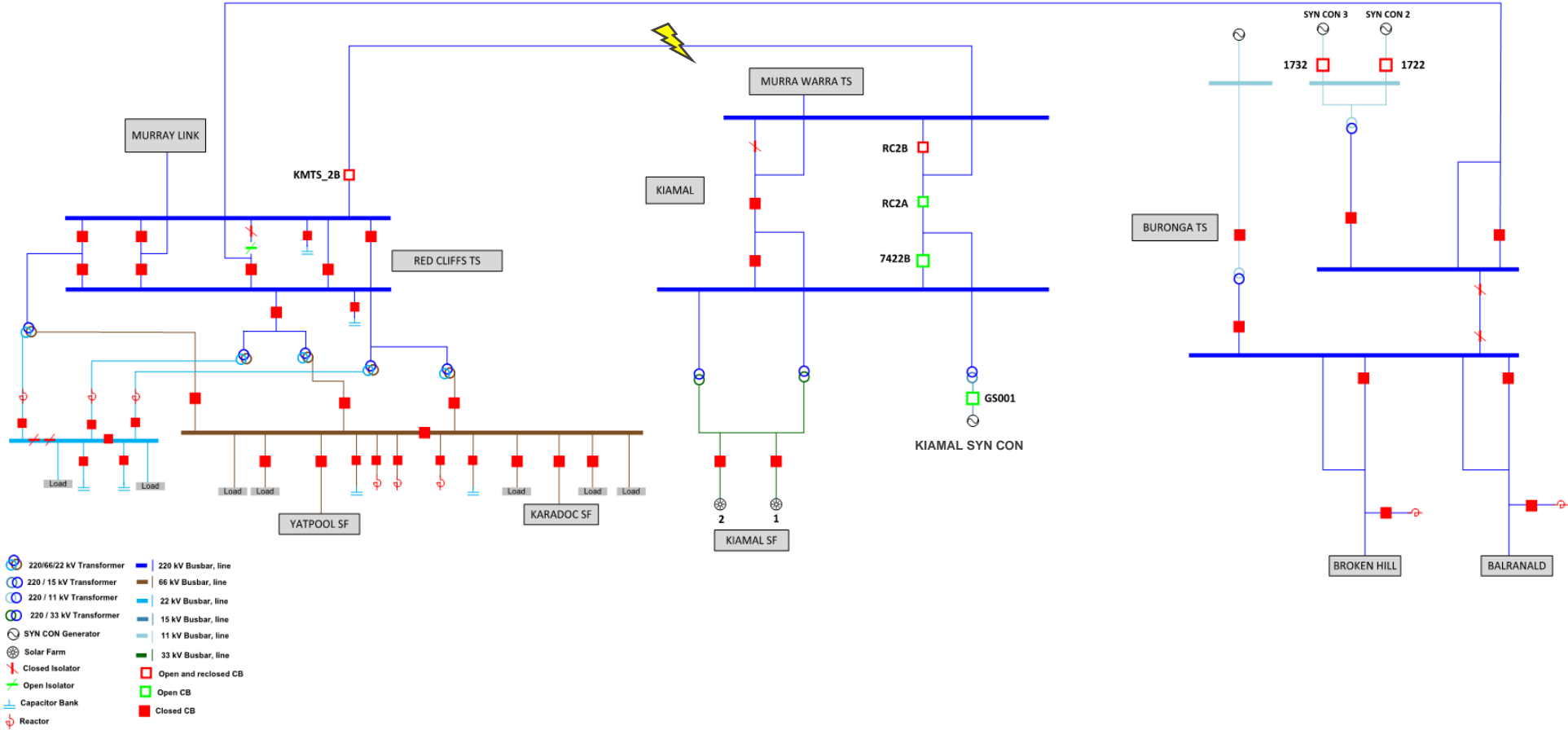
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<sup>16</sup> See AEMO's submission in response to the AEMC's draft determination for the 'Efficient management of system strength on the power system' rule change, at [https://www.aemc.gov.au/sites/default/files/documents/aemo\\_4.pdf](https://www.aemc.gov.au/sites/default/files/documents/aemo_4.pdf). In this submission, AEMO recommended that there would be benefit in system strength services establishing performance standards as part of the NER to ensure there is an appropriate regime in place for performance standards and compliance monitoring for system strength services.

<sup>17</sup> See NER clause 5.2.6A(a)

# A1. System diagram

Figure 1 Simplified network configuration post fault clearance and the trip of Kiamal synchronous condenser, showing CBs that tripped and reclosed and CBs that remained open



## A2. Sequence of events

Table 1 Table of sequence of events

Date	Time	Event type	Event
1/3/2022	0423.44	Transmission	Red Cliffs – Kiamal 220 kV line: <ul style="list-style-type: none"> <li>Three-phase fault on the RCTS – KMTS 220 kV line.</li> <li>Line CBs at Red Cliffs and Kiamal three-phase tripped to clear the fault in 49 ms.</li> </ul> Kiamal synchronous condenser: <ul style="list-style-type: none"> <li>Synchronous condenser shutdown sequence initiated</li> </ul>
1/3/2022	0423.48	Transmission	Red Cliffs – Kiamal 220 kV line: <ul style="list-style-type: none"> <li>RC2B CB at KMTS and the KMTS_2B CB at RCTS successfully auto-reclosed to re-energise the line.</li> </ul>
1/3/2022	0423.49	Transmission	Murraylink VFRB scheme operated. The scheme operated successfully to runback Murraylink, which was transferring 140 MW towards South Australia, to 0 MW.
1/3/2022	0423.49	Transmission	The GFT2 operated to trip Murra Warra Wind Farm, which was generating 110 MW.
1/3/2022	0423.49	Transmission	Buronga No. 2 and No .3 synchronous condensers: <ul style="list-style-type: none"> <li>Internal CBs of the Buronga No. 2 and No. 3 synchronous condensers (1722 and 1732) tripped on stator differential protection.</li> <li>Inter-trip sent to the Darlington Point solar farm, which was not generating.</li> </ul>
1/3/2022	0423.52	Transmission	Kiamal synchronous condenser: <ul style="list-style-type: none"> <li>Internal CB of the Kiamal synchronous condenser, GS001, opened.</li> <li>5 seconds later, the Transgrid Kiamal synchronous condenser breakers 7422B and RC2A at KMTS were tripped on No. 1 and No. 2 generator protection.</li> </ul>
1/3/2022	0526	Notice	MN 94967 issued 63 minutes after the event, to advise of the non-credible contingency event.
1/3/2022	0616 - 0725	Transmission	Buronga No. 2 and No. 3 synchronous condensers: <ul style="list-style-type: none"> <li>At 0616 hrs, the Buronga No. 2 synchronous condenser CB 1722 was successfully reclosed.</li> <li>At 0626 hrs, the Buronga No. 3 synchronous condenser CB 1732 was also successfully reclosed.</li> <li>The Darlington Point Solar Farm CB was reclosed at 0725 hrs.</li> </ul>
1/3/2022	0638	Notice	MN 94972 issued to advise that the RCTS – KMTS 220 kV line and the Buronga No. 2 and No. 3 synchronous condensers had been returned to service.
1/3/2022	0840	Notice	MN 94973 issued to advise that AEMO had reclassified the incident as a credible contingency from 0830 hrs until further notice. The elements included in the reclassification were the RCTS – KMTS 220 kV line and the Kiamal synchronous condenser.
1/3/2022	1536	Notice	MN 94989 issued to advise that AEMO had extended the reclassification to include the Buronga No. 2 and No. 3 synchronous condensers from 1530 hrs until further notice.
05/3/2022	1637 - 1753	Transmission	Kiamal synchronous condenser <ul style="list-style-type: none"> <li>The Kiamal 220 kV synchronous condenser bay was re-energised at 1637 hrs by closing the 7422B and RC2A breakers at KMTS.</li> <li>At 1753 hrs, Total Eren attempted to reclose the Kiamal synchronous condenser internal 15 kV disconnecter GS002, which caused the immediate tripping of the 220 kV 7422B and RC2A breakers.</li> <li>Following this, Total Eren requested that Transgrid isolate and earth the synchronous condenser bay for further investigation and repairs.</li> </ul>