

# Power System Operating Incident Report – Trip of Hazelwood-Morwell 220 kV transmission line at the Hazelwood end on 15 January 2014

PREPARED BY: AEMO Systems Capability

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STATUS: FINAL

## Version Release History

VERSION	DATE	BY	CHANGES	CHECKED BY	AUTHORISED BY
1	26 Mar 2013	S Darnell	FINAL	S Darnell	P Biddle

## Incident Classifications

Time and date and of incident	2211 hrs Wednesday 15 January 2014
Region of incident	Victoria
Affected regions	Victoria
Event type	OTH - Other
Primary cause	NA – Not Applicable
Impact	Nil (No Impact)
Associated reports	Nil

## Abbreviations

Abbreviation	Term
AEMO	Australian Energy Market Operator
CB	Circuit Breaker
EMMS	Electricity Market Management System
EMS	Energy Management System
kV	Kilovolt
MW	Megawatt
NER	National Electricity Rules

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## 1 Introduction

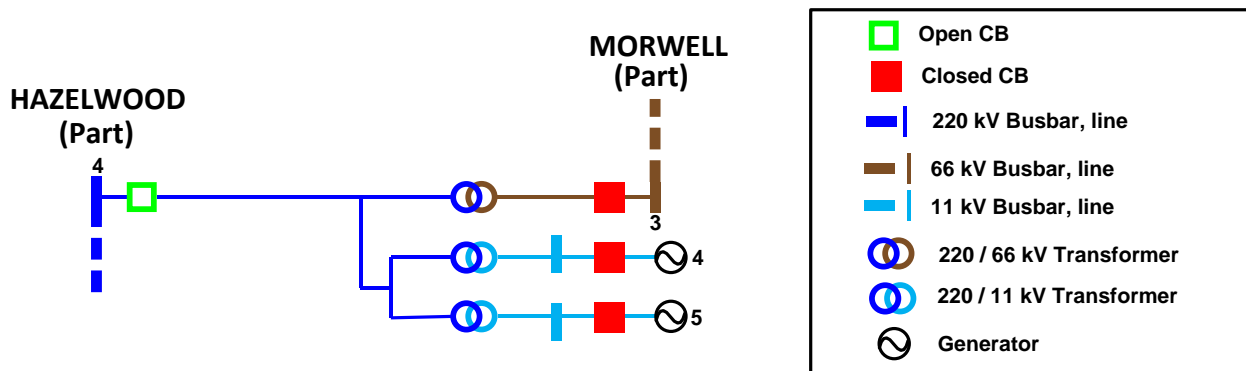
This report reviews a power system operating incident<sup>1</sup> that occurred on Wednesday 15 January 2014 at Hazelwood Power Station in Victoria. The purpose of this incident review is to assess power system security over the course of the incident<sup>2</sup>. This report is based upon information provided by AEMO<sup>3</sup> and SP AusNet<sup>4</sup>. National Electricity Market time (Australian Eastern Standard Time) is used in this report.

## 2 The Incident

On Wednesday 15 January at 2211 hrs the Hazelwood – Morwell 220 kV transmission line opened at the Hazelwood end. No load or generation was lost as a result of this incident. The transmission line was returned to service approximately 40 minutes later at 2249 hrs.

The reason for investigating this incident is that a transmission line opened at one end only. This is an unexpected event as, generally, transmission lines open at both ends under fault conditions.

The diagram below shows the status of the power system after incident. The line circuit breaker is open at the Hazelwood Power Station end of the transmission line.



## 3 Investigation

SP AusNet investigated this incident but could not identify a cause for the circuit breaker opening. No events or disturbances were recorded on the X or Y protection relays or monitoring equipment at the Hazelwood or Morwell ends of the transmission line. SP AusNet thoroughly checked the trip relay visually and physically.

There was lightning in the area at the time of the incident however there is no evidence that lightning caused the circuit breaker to trip.

<sup>1</sup> AEMO is required to review this incident as it is classified as a non-credible contingency that satisfies the requirements of a reviewable operating incident under the National Electricity Rules (NER) - NER v60 Clause 4.8.15(a)(1)(i) and AEMC Reliability Panel Guidelines for Identifying Reviewable Operating Incidents.

<sup>2</sup> The NER requires AEMO 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 - NER v60 Clause 4.8.15 (b).

<sup>3</sup> In Victoria AEMO is both the National Electricity Market operator and Victorian Transmission Network Service Provider (planning).

<sup>4</sup> SP AusNet is the Transmission Network Service Provider in the Victoria region. Information provided by SP AusNet has been provided on a without prejudice basis and nothing in this report is intended to constitute, or may be taken by any person as constituting, an admission of fault, liability, wrongdoing, negligence, bad faith or the like on behalf of SP AusNet (or its respective associated companies, businesses, partners, directors, officers or employees).

## 4 Power System Security

This section assesses how AEMO managed power system security over the course of the incident<sup>5</sup>.

AEMO invoked constraint set V-HWMW whilst the Hazelwood – Morwell 220 kV transmission line was out of service (for 38 Minutes). This action ensured the power system was in a secure state.

On the same day, AEMO issued Market Notices 44599 and 44603 to notify the market of the incident and then to reclassify the incident as a credible contingency. AEMO reclassified the incident as a credible contingency because the cause of the incident had not been identified.

AEMO issued Market Notice 44881 on 3 February 2014 (19 days later) to cancel credible contingency following notification from SP AusNet that the cause of the incident could not be identified.

## 5 Conclusion

1. The reason the Hazelwood – Morwell 220 kV line opened at the Hazelwood end could not be identified.
2. The Power System remained secure over the course of the course of the incident.

## 6 Recommendations

There are no recommendations arising from this incident

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<sup>5</sup> AEMO is responsible for power system security in the NEM and is required to operate the power system in a secure operating state (NER Clause 4.2.4 (a)). AEMO must thereby ensure that the power system is maintained in, or returned to, a secure operating state following a contingency event.