Power System Operating Incident Report – Trip of Rowville – Thomastown 220 kV Transmission Line at the Rowville End on 22 Jan 2014

PREPARED BY: AEMO Systems Capability

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STATUS: FINAL

Version Release History

VERSION	DATE	BY	CHANGES	CHECKED BY	AUTHORISED BY
1	27 Mar 2014	S Darnell	FINAL	S Darnell	P Biddle

Incident Classifications

Time and date and of incident	0634 hrs Wednesday 22 January 2014
Region of incident	Victoria
Affected regions	Victoria
Event type	OTH - Other
Primary cause	OE & CON – Operating Error and Non-Conformance
Impact	Nil
Associated reports	Nil

Abbreviations

Abbreviation	Term
AEMO	Australian Energy Market Operator
kV	Kilovolt
MW	Megawatt
NER	National Electricity Rules

1 Introduction

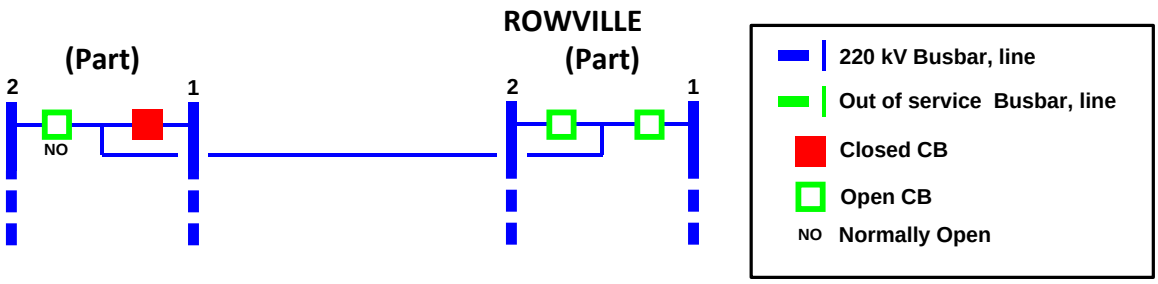
This report reviews a power system operating incident[1] that occurred on Wednesday 22 January 2014 at Rowville Terminal Station in Victoria. The purpose of this incident review is to assess power system security over the course of the incident[2]. This report is based upon information provided by SP AusNet[3]. National Electricity Market time (Australian Eastern Standard Time) is used in this report.

2 The Incident

On Wednesday 22 January 2014 at 0634 hrs the Rowville – Thomastown 220 kV transmission line opened at the Rowville end. The line remain energised from the Thomastown end. No load or generation was lost as result of this incident.

The reason for investigating this incident is that a transmission line opened at one end only. This is an unexpected event known in power system security terms as a non-credible contingency. Generally, transmission lines open at both ends under fault conditions.

The status of the power system after the incident is shown below. The two circuit breakers at the Rowville end of the transmission line opened. The open circuit breaker at the Thomastown end is a normally open circuit breaker.



3 Investigation

SP AusNet investigated this incident and found that staff working at Rowville Terminal Station inadvertently disturbed the X protection relay for the Rowville-Thomastown 220kv transmission line. The work involved removing and rerouting cables, and whilst relocating a cable the relay panel containing the X protection relay was disturbed. SP AusNet promptly reset the relay and returned the transmission line to service within 18 minutes of the incident.

[1] 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.

[2] 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).

[3] 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[4].

AEMO invoked constraint set V-ROTT[5] at 0640 hrs and revoked it at 0655 hrs. This action ensured the power system remained in a secure state whilst the Rowville – Thomastown 220 kV line was out of service.

AEMO then issued Market Notice 44744 at 0739 hrs to notify the market:

- Of the non-credible contingency event.
- That the incident would not be reclassified as a credible contingency.

AEMO did not reclassify the incident as a credible contingency because AEMO was satisfied that the cause of the incident had been identified and was unlikely to reoccur.

5 Conclusions

1. The Rowville- Thomastown 220 kV transmission line opened at the Rowville end because staff working in the terminal station inadvertently disturbed a protection relay.
2. Power system security was maintained over the course of the incident.

6 Recommendations

There are no recommendations arising from this incident.

[4] 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.

[5] Constraint set V-ROTT_R is invoked for the outage of the Rowville to Thomastown 220 kV transmission line