Power System Operating Incident Report – Trip of South Morang - Thomastown No.2 220 kV Transmission Line at the Thomastown End on 14 January 2014

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STATUS: FINAL

Version Release History

VERSION	DATE	BY	CHANGES	CHECKED BY	AUTHORISED BY
1	10 Feb 2014	S Darnell	FINAL	P Biddle	P Biddle

Incident Classifications

Time and date and of incident	1836 hrs 14 January 2014
Region of incident	Victoria
Affected regions	Victoria
Event type	TT – Los of Multiple Transmission elements
Primary cause	PTN & CTR – Protection and Control
Impact	Nil
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
NER	National Electricity Rules

Disclaimer

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1 Introduction

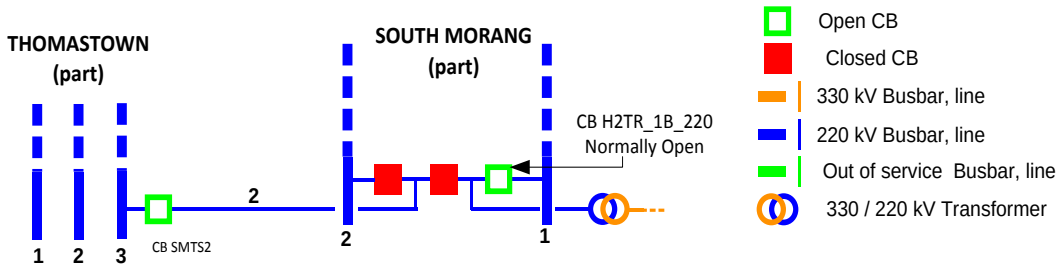
This report reviews a power system operating incident[1] that occurred on Tuesday 14 January 2014 at Thomastown Terminal Station (Thomastown) in Victoria. The purpose of this incident review is to assess power system security over the course of the incident[2]. This report is based upon information provided by AEMO[3] and SP AusNet[4]. National Electricity Market time (Australian Eastern Standard Time) is used in this report.

2 The Incident

On Tuesday 14 January at 2014 at 1836 hrs the South Morang – Thomastown No.2 220 kV transmission line (South Morang- Thomastown line) opened at the Thomastown end. The line remained energised from the South Morang end.

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

The status of the power system after the incident is shown below. Circuit Breaker SMTS2 at Thomastown is the circuit breaker that opened. Circuit breaker H2TR_1B_220 at South Morang Terminal Station (South Morang) is normally open and hence was open prior to the incident.



3 Investigation

SP AusNet investigated this incident and found that a faulty protection relay caused the circuit breaker at Thomastown Terminal Station to open. SP AusNet reclosed the circuit breaker at 2155 hrs on 14 Jan 2014 having identified the faulty relay. The South Morang- Thomastown line was returned to service with X protection in service and Y protection out-of-service. The faulty relay was replaced on 15 Jan 2014 and the Y protection returned to service.

[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] In Victoria AEMO is both the National Electricity Market operator and Victorian Transmission Network Service Provider (planning).

[4] 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 power system security was managed over the course of the incident.

AEMO invoked constraint set V-SMTT2[5] at 1845 hrs and revoked it at to 2205 hrs once the South Morang-Thomastown line had returned to service.

Market Notices 44524 and 44526 were issued, respectively, as notification of the incident and then as notification that the cause had been identified and resolved.

Then incident was not reclassified as a credible contingency because the cause of the incident was promptly identified and isolated prior to returning the line to service.

Over the course of the incident AEMO invoked the appropriate constraint, issued the required market notices in a timely manner, and assessed the contingency correctly. Power system frequency and voltage remained within operational limits.

Power system security was maintained over the course of this incident[6].

5 Conclusion

1. A faulty protection relay caused South Morang – Thomastown no.2 220 kV transmission line to open at the Thomastown end.
2. The faulty relay was promptly identified and replaced the following day.
3. Then power system remained secure over the course of the incident.

6 Recommendations

There are no Recommendations arising from this incident.

[5] Constraint Set V-SMTT2 is invoked for an outage of the South Morang to Thomastown 220 kV transmission line

[6] 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.