POWER SYSTEM OPERATING INCIDENT REPORT - TRIP OF HADSPEN A 110 KV BUSBAR ON 24 OCTOBER 2012

PREPARED BY: System Performance and Commercial

DATE: 20 December 2012

FINAL

Disclaimer

Purpose

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Abbreviations

Abbreviation	Term
CB	Circuit Breaker
kV	kilovolts

Contents

Incident summary

Date and time of incident	24/10/2012 at 13:38hrs
Region of incident	Tasmania
Affected regions	Tasmania
Event type	BB - Busbar Trip
Primary cause	OE & CON – Operating Error and Non Conformance
Impact	Nil
Associated reports	Nil

1 Introduction

At 1338 hrs on 24 October 2012, the Hadspen A 110 kV Busbar in Tasmania tripped during testing of the 110 kV CB C452 at Hadspen. The busbar trip also opened the following elements at the Hadspen A 110 kV Busbar:

- No.4 Hadspen – Palmerston 110 kV transmission line
- No.2 Hadspen – Norwood 110 kV transmission line
- No.1 Hadspen – Trevallyn 110 kV transmission line
- No.2 220/110 kV transformer at Hadspen.

The Busbar trip did not result in any loss of load. The A110 kV Busbar at Hadspen and all associated plant was returned to service at 1341 hrs.

This report has been prepared under clause 4.8.15 (c) of the National Electricity Rules (NER) 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.

This report is largely based upon information provided by Transend. Data from AEMO's Energy Management System (EMS) and Electricity Market Management System (EMMS) has also been used in analysing the incident.

All references to time in this report are to National Electricity Market time (Australian Eastern Standard Time).

2 Pre-Contingent System Conditions

The status of the power system prior to the incident is shown in Figure 1. For clarity only equipment relevant to this incident has been included in the diagram. Note that 110 kV CB C452 was open and isolated for testing.

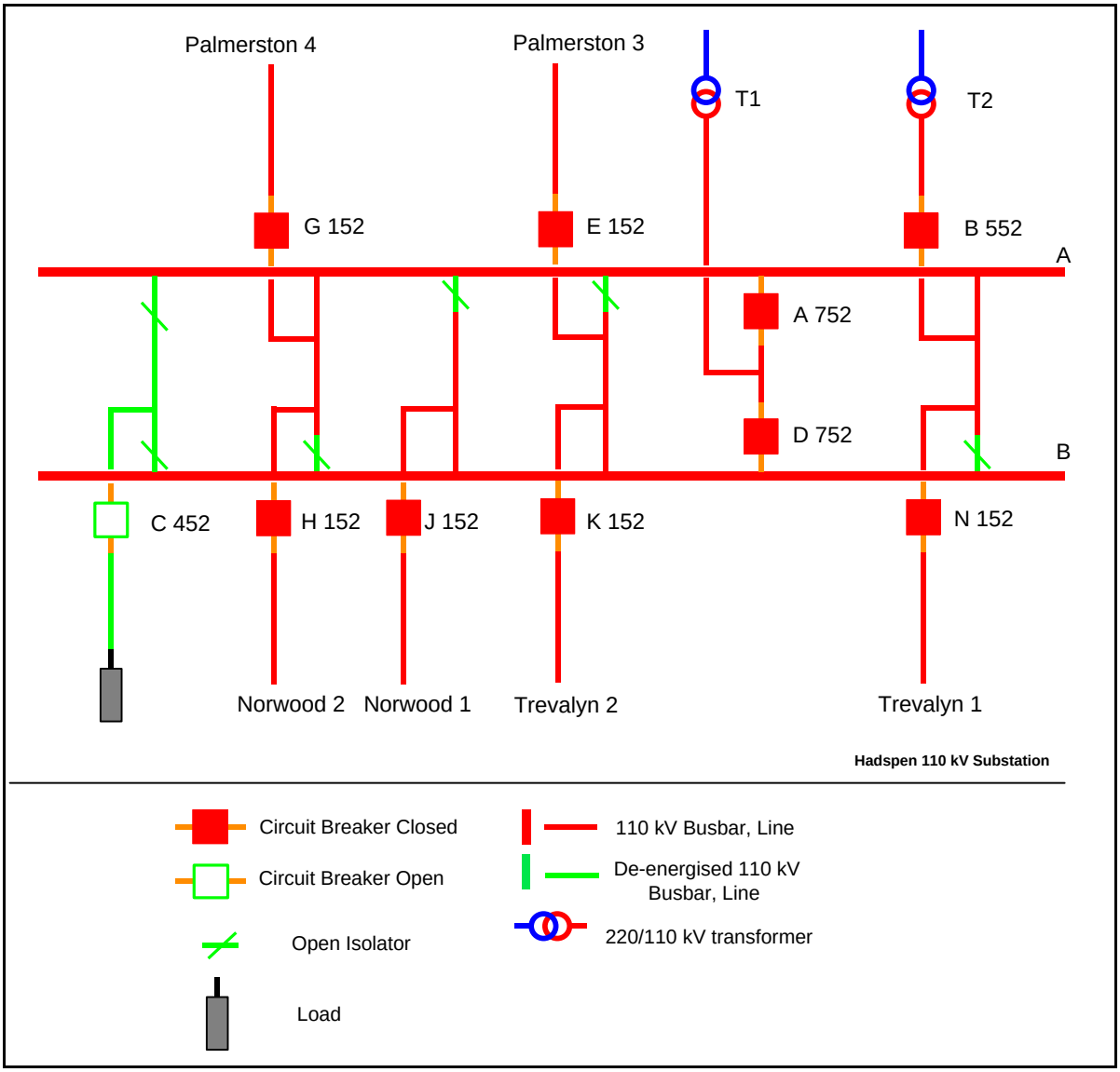

Figure 1 Status of the power system prior to the incident.

3 Summary of Events

Date/Time	Events
24/10/2012 1338 hrs	The following elements tripped: • Hadspen A 110 kV Busbar • No.4 Hadspen – Palmerston 110 kV transmission line, • No.2 Hadspen – Norwood 110 kV transmission line, • No.1 Hadspen – Trevallyn 110 kV transmission line and • No.2 220/110 kV transformer at Hadspen
24/10/2012 1341 hrs	All tripped elements were remotely restored.
24/10/2012 1623 hrs	AEMO issued Electricity Market Notice No. 40098 advising of the non-credible contingency event at Hadspen.

On 24 October 2012, routine maintenance was being conducted by Transend technicians at Hadspen substation. The technicians were carrying out trip testing on the 110 kV CB C452 at Hadspen and had correctly isolated the CB prior to the event.

At 1338 hrs, the technicians attempted to initiate a test trip of 110 kV CB C452 at Hadspen from the Hadspen 110 kV Busbar protection panel. The trip signal was applied to the incorrect terminal on the protection panel which initiated the trip of the A 110 kV Busbar at Hadspen.

The status of the power system immediately after the incident is shown in Figure 2.

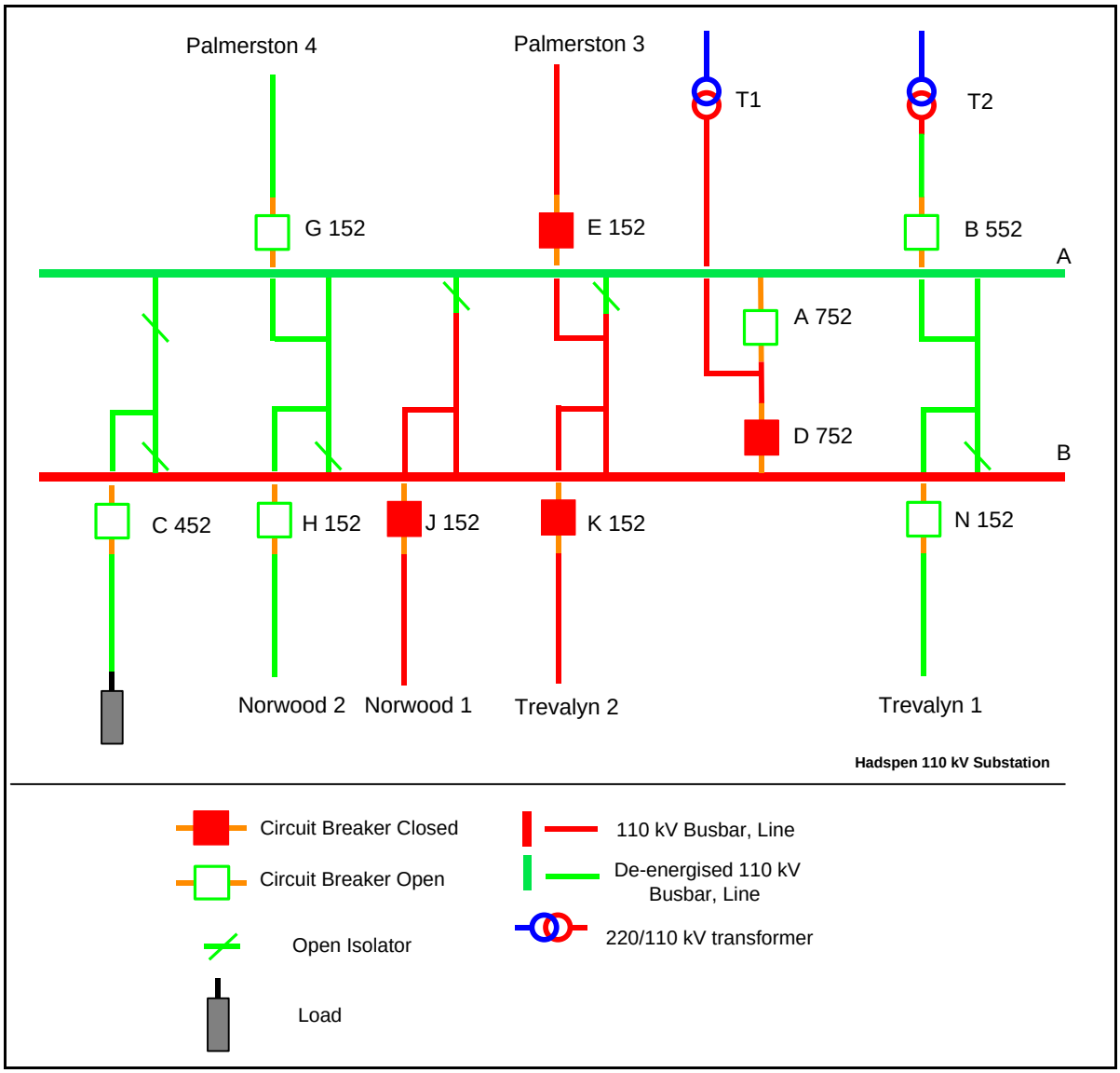

Figure 2 Status of the power system immediately after the incident

4 Immediate Actions Taken

Transend control room staff were immediately notified and proceeded to restore the Hadspen A 110 kV Busbar remotely. The Busbar and all associated transmission lines were restored back into service at 1341 hrs.

At 1623 hrs on 24/10/2012, AEMO issued Electricity Market Notice No.40098 advising that a non-credible contingency event had occurred at Hadspen at 1338 hrs and that the event would not be reclassified as a credible contingency. This was because AEMO had identified that human error was the cause of the event and was satisfied that the event would not re-occur under similar operating conditions.

5 Follow-up Actions

The Transend technicians had followed correct procedure in carrying the routine maintenance at Hadspen substation. The incident is attributed to a momentary lapse of attention when applying a trip signal to the appropriate terminal on the Hadspen 110 kV Busbar protection panel. The technicians involved were reminded to be vigilant when conducting tests to avoid a reoccurrence.

6 Power System Security Assessment

The power system voltages and frequencies remained within the normal operating bands and the power system remained in a secure operating state throughout the incident.

7 Conclusions

The trip of the A 110 kV Busbar at Hadspen that occurred on 24 October 2012 was caused by human error during routine maintenance at Hadspen substation.

AEMO is satisfied that Transend have appropriate procedures in place to mitigate the risk of a similar incident occurring in the future.

AEMO correctly applied the criteria published in section 12 of its Power System Security Guidelines in assessing that the circumstances of this incident did not warrant reclassifying similar incidents as a credible contingency event.

8 Recommendations

There are no recommendations arising from this incident.