# POWER SYSTEM INCIDENT REPORT SYDNEY EAST A2 132KV BUS TRIP ON 27 SEPTEMBER 2009

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Final

# 1 Introduction

On 27 September 2009 at 1607 hrs, an unplanned outage of the Sydney East A2 132kV busbar occurred. Restoration of the busbar was initiated at 2125 hrs. The busbar was energised, but as soon as the Sydney East 132kV bus section circuit breaker (CB) between A2 and A3 132kV busbars was closed, the busbar tripped again at 2136hrs.

This report has been prepared under clause 4.8.15 of the National Electricity Rules 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.

Information for this report has been supplied to AEMO by TransGrid. Data from AEMO's Energy Management System (EMS) and Market Management System (MMS) has also been used in analysing the event.

All references to time in this report refer to Market time (Australian Eastern Standard Time).

# 2 Summary of Events

On 27 September at 1607hrs, an unplanned outage of the Sydney East A2 132kV bus occurred. The network topology at Sydney East terminal station before and after the busbar trips are shown in Figures 1 and 2. The initial investigation into the busbar trip by TransGrid field staff did not reveal any issues with the high voltage equipment or protection systems.

Restoration of the busbar was initiated at 2125 hrs. CBs 4102 and 4422A were closed successfully, but as soon as an attempt was made to close the A2 and A3 132kV bus section CB 4122, the busbar immediately tripped at 2136hrs. The A2 132kV busbar was returned to service at 2244 hrs with the bus section CB 4122 left open.

Investigation of the trip during the return to service of A2 132kV busbar revealed that current transformer secondary circuits had been isolated during previous protection maintenance work on the adjacent A3 132kV busbar. This caused an imbalance in the A2 132kV busbar protection. The A2 132kV busbar protection operated at 1607 hrs on 27 September when the current imbalance exceeded the threshold value.

The trip of the A2 132kV busbar at 2136 hrs on the closing of CB 4122 was also due to the same reason.

The secondary circuits were restored and the A2 132kV busbar section CB 4122 was closed on 28 September at 1013 hrs.

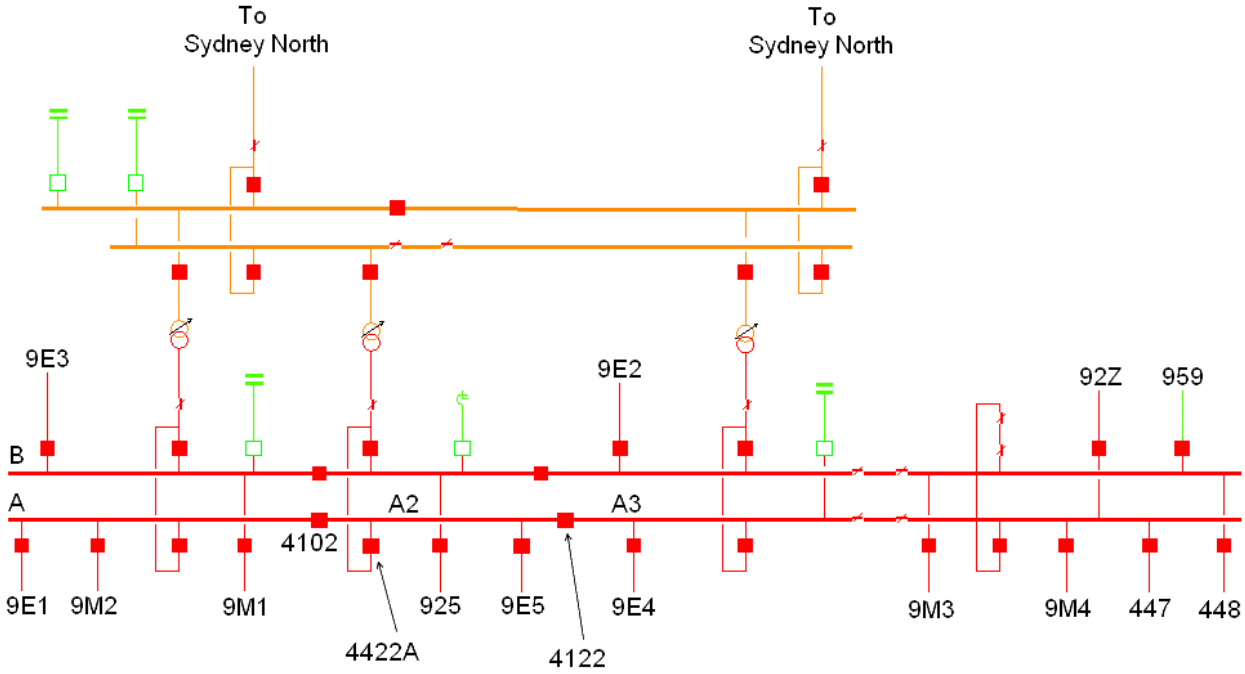


*Figure 1: Network Topology at Sydney East Terminal Station Before the A2 132kV Busbar Trip*

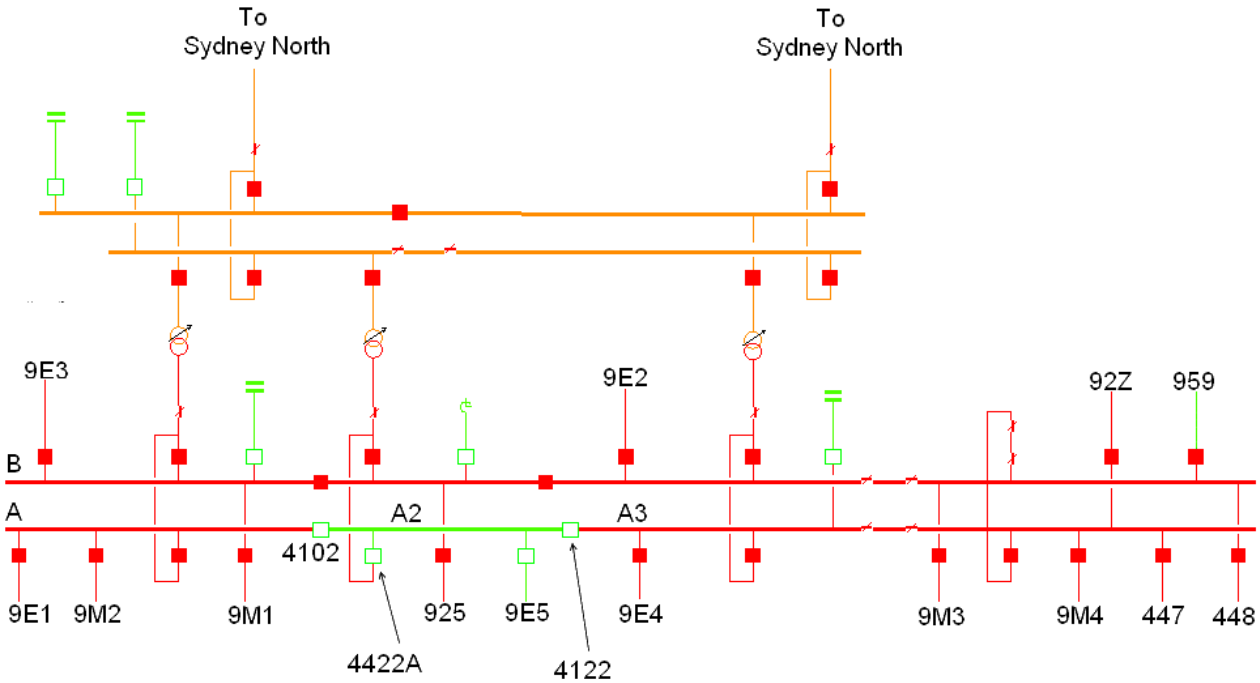


*Figure 2: Network Topology at Sydney East Terminal Station Soon After the A2 132kV Busbar Trip*

# 3 Power system security Assessment

There was no loss of load or generation as a result of this incident. There were no power system security violations during the event.

# 4 Follow-up Actions

In response to this incident, TranGrid reviewed the incident with staff involved to minimise similar occurrences in future. TransGrid has also reviewed protection isolation and restoration procedures in light of this incident..

# 5 Conclusion

On 27 September at 1607hrs, an unplanned outage of the Sydney East A2 132kV busbar occurred. During the return to service of the A2 132kV busbar, the busbar tripped again. The trips were caused by isolated current transformer secondary circuits during previous protection maintenance work on the adjacent busbar. TransGrid has reviewed the incident with the staff involved and reviewed its protection isolation/restoration procedures to minimise similar occurrences in future.