POWER SYSTEM OPERATING INCIDENT REPORT – TRIPPING OF NOS.1 AND 2 110 KV BUSBARS AT NERANG ON 9 FEBRUARY 2013

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DATE: 12 March 2013

FINAL

Disclaimer

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Abbreviations

Abbreviation	Term
CB	Circuit Breaker
kV	Kilovolt
MW	Megawatt

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Incident summary

Date and time of incident	9 February 2013 at 1213 hrs
Region of incident	Queensland
Affected regions	Queensland
Event type	BB – Busbar trip
Primary cause	OE & CON – Operating Error and Non Conformance
Impact	Not Significant
Associated reports	NIL

1 Introduction

At 1213 hrs on 9 February 2013, the No.1 and No.2 110 kV Busbars at Nerang Substation tripped while Energex were working on the 11 kV network at Nerang. The Mudgeeraba – Nerang 706 and Molendinar – Nerang 798 110 kV Transmission Lines were off-loaded when opened at the Nerang ends only. Supply was interrupted to approximately 22 MW of customer load due to the incident.

All network elements and load were returned to service by 1218 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.

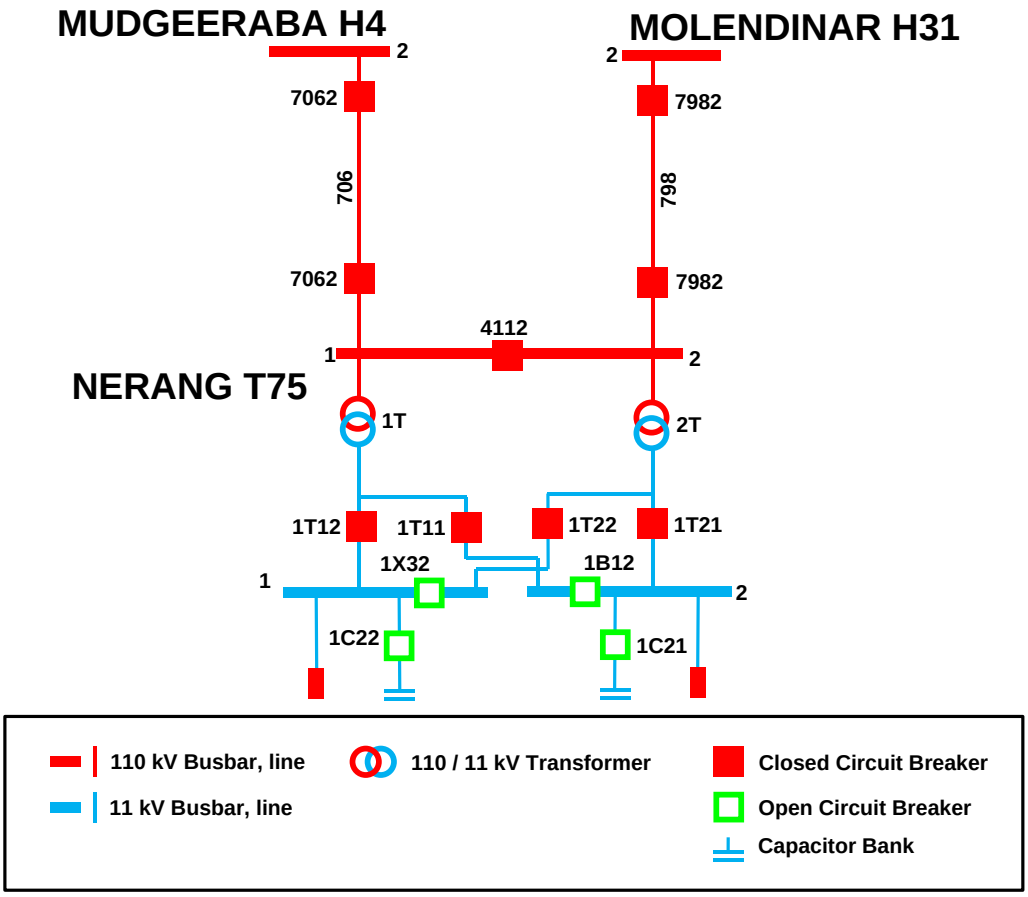
This report is largely based upon information provided by Energex. Data from AEMO's Energy Management System (EMS) and Electricity Market Management System (EMMS) has also been used in analysing the incident.

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.

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



3 Summary of Events

The summary of events is shown in Table 1.

Table 1. Summary of events.

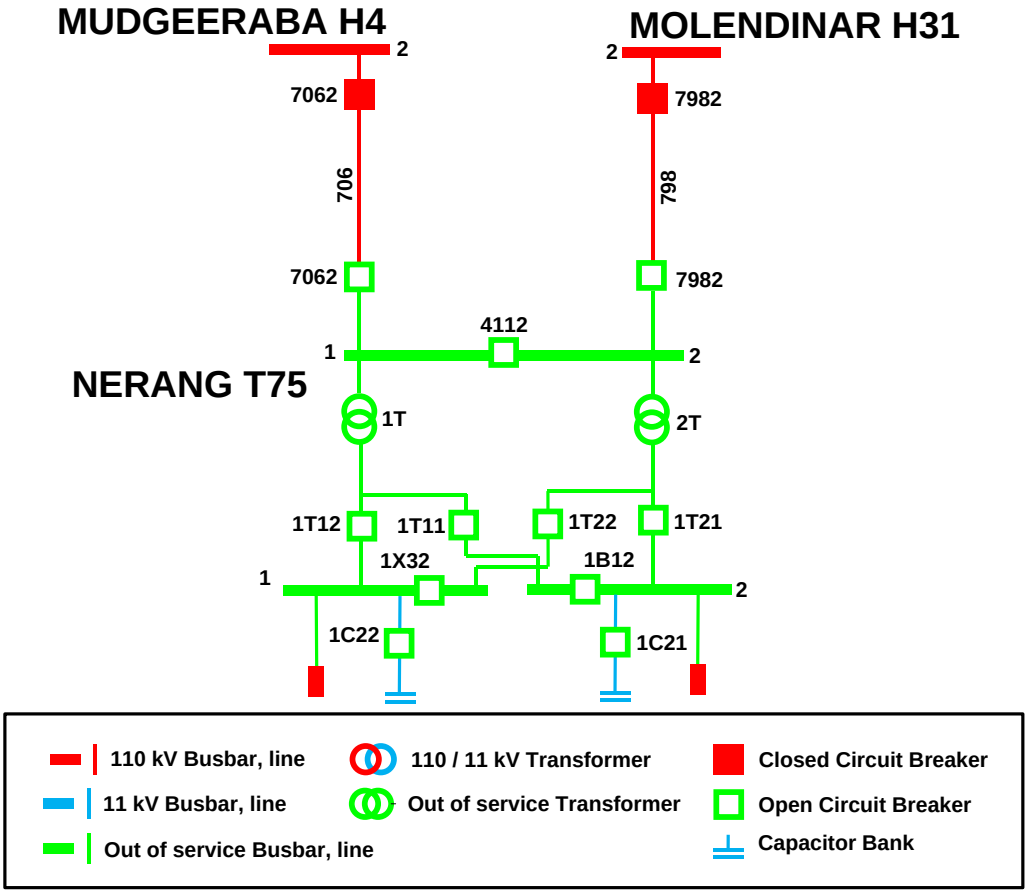
Time (hh:mm)	Events / Comments
12:13	The following elements tripped: • No.1 and No.2 110 kV busbars at Nerang (CB 4112 opened) • Nerang end of Mudgeeraba – Nerang 706 110 kV transmission line (CB 7062 opened) • Nerang end of Molendinar – Nerang 798 110 kV transmission line (CB 7982 opened) • 1T and 2T 11/110 kV transformers at Nerang (CB 1T12, CB 1T21, CB 1T11 and CB 1T22 opened) The No.1 and No.2 110 kV Busbars at Nerang were de-energised. The No.1 and No.2 11 kV Busbars at Nerang were de-energised. Supply was interrupted to approximately 22 MW of customer load.
12:16	The following elements returned to service: • No.1 and No.2 110 kV busbars at Nerang (CB 4112) • Nerang end of Mudgeeraba – Nerang 706 110 kV transmission line (CB 7062)

	• Nerang end of Molendinar – Nerang 798 110 kV transmission line (CB 7982)
12:18	The following elements returned to service: • 1T and 2T 11/110 kV transformer at Nerang (CB 1T12, CB 1T21 and CB 1T11) Nerang load restored

On 9 February 2013, Energex staff were working on the 11 kV network at Nerang Substation. At 1213 hrs, the No.1 and No.2 110 kV busbars at Nerang Substation tripped when Energex attempted to parallel the 11 kV busbars at Nerang Substation. The 110 kV busbar trip was initiated because the neutral sensitive earth fault protection had not been isolated in accordance with procedures.

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

Energex advised Powerlink of the cause of the trip and proceeded to restore the elements that had tripped. All tripped elements were returned to service by 1218 hrs.

Based on information conveyed through Powerlink, AEMO determined that the event would not be reclassified as a credible contingency event because the possibility of reoccurrence was considered to be relatively low. AEMO had not issued a market notice to inform the market of the non-credible contingency event within two hours of the event as per Section 11.3 of the Power System Security Guidelines.

5 Follow-up Actions

Energex reviewed its work procedures and determined that it was appropriate. Energex staff were reminded to adhere to work procedures when conducting work on the network.

The requirement to issue a market notice within 2 hours of the occurrence of a non-credible contingency event on the transmission system has been reinforced with AEMO operations staff.

6 Power System Security Assessment

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

7 Conclusions

The tripping of the No.1 and No.2 110 kV Busbars at Nerang Substation was triggered when protection was not isolated while work was being carried out on the 11 kV network at Nerang Substation.

Energex has reviewed its work procedures and is satisfied that appropriate procedures are in place to avoid a similar incident from reoccurring.

The requirement to issue a market notice within 2 hours of an event as mentioned in section 11.3 of the Power System Security Guidelines has been reinforced with AEMO operations staff. AEMO correctly assessed the circumstances that this incident did not warrant reclassifying similar incidents as a credible contingency event as per section 12.

8 Recommendations

There are no recommendations arising from this incident.