

23 February 2005

Directlink Joint Venture Manager  
PO Box 518  
Port Macquarie  
NSW 2444

Attention: Dennis Stanley

**RE: Clarification of Load at Risk in Context of Potential Overload of Line 966**

Dear Dennis

Following the presentation to the ACCC on 3 February 2005, clarification has been sought by the Commission of the "load at risk" in the context of the potential overload of Line 966

The "load at risk" is a measure of the magnitude of customers' load which is not supplied in accordance with network planning standards due to insufficient capacity in the transmission network. In this case the risk is related to Country Energy's customers and the standard applied is TransGrid's sustained emergency rating for Line 966. This shortfall in capacity introduces greater risk of interruption to supply to Country Energy's customers in the far northern NSW region as a consequence of single contingencies in the upstream (transmission) parts of the network.

When the load is high as it was on 20 February 2004, without support from Directlink Line 966 would have become loaded to 102 MW following an outage of the Armidale to Lismore 330 kV line. This is beyond the line's sustained emergency rating of 88 MVA. Directlink is able to relieve the load on Line 966 by injecting power from the north. If Line 966 becomes overloaded beyond its sustained emergency rating, the transmission protection scheme would trip off Line 966 and this would lead to a voltage and system collapse at Koolkhan. Line 966 would have been tripped because there is no load shedding system in place that could automatically reduce the loading on Line 966 to relieve the overload and potential voltage collapse. BRW has not had the opportunity to examine the actual protection schemes in place to determine what would happen beyond the tripping of Line 966. The voltage and system collapse is likely to spread beyond the Koolkhan area and the load that ultimately would be lost to address the collapse could be much higher than the load carried on Line 966 before the outage of the Armidale to Lismore 330 kV line. As it is not possible to directly reduce the load on Line 966 due to the distribution of the load on the 132 kV network, it would be necessary to reduce the load in the Koolkhan area by around 28 MVA in order to reduce the load on Line 966 by 14 MVA, i.e. to bring the load back to the sustained emergency rating of 88 MVA.

Alternatively, if TransGrid does not rely on Directlink for network support, it could operate its network such that, following an outage of the Armidale to Lismore 330 kV line, Line 966 would remain within its sustained emergency rating. This means that TransGrid would have to pre-contingently shed customer load in anticipation of an outage every time load reached a certain level. In the case of the snap shot conditions on 20 February 2004, Line 966 would have been operating at 14 MVA above its sustained emergency rating in the post contingent period. As explained above, due to the sharing of load on the 132 kV network at Koolkhan, it would be necessary to reduce the load at Koolkhan substation by around 28 MVA (i.e. by around 50% of the peak load) in order to reduce the loading on Line 966 by 14 MVA. The level of load at risk to which Country Energy customers would be exposed is equivalent to the combined demand of a regional city. From discussions with Country Energy planning staff, shedding load to this level would be unacceptable to Country Energy.

So the level 'load at risk' without Directlink depends on whether TransGrid manages the potential overload of Line 966 post-contingently or pre-contingently. By appropriate dispatch of Directlink, TransGrid is able to avoid overloading on Line 966 and unacceptable load shedding.

Yours sincerely  
Burns and Roe Worley

A handwritten signature in black ink, appearing to read 'R McD Touzel', written in a cursive style.

R McD Touzel  
**General Manager Consulting**