14 March 2003

Mr Sebastian Roberts
Acting General Manager
Regulatory Affairs - Electricity
ACCC
GPO Box 520J
Melbourne 3001

Dear Sebastian,

MURRAYLINK TRANSMISSION PARTNERSHIP'S APPLICATION FOR CONVERSION TO A PRESCRIBED SERVICE – VENCorp's COMMENTS REGARDING TRANSFER CAPABILITY

Further to my letter of 3 March 2003, I advise that VENCorp has completed a more comprehensive assessment of Murraylink transmission capability with the proposed augmentations noted in the report by PB Associates. Our base study scenario includes 1900MW Victorian import from New South Wales, peak summer 2003/04 Victorian demand and 500MW transfer to South Australia on the Heywood interconnector. Forecast summer loads are based on the 10 percentile temperature / medium growth scenario.

Our assessment is focussed on the Victorian network. We understand that TransÉnergie Australia (TEA) is dealing with the affected TNSPs in relation to issues in the New South Wales and South Australian networks.

Our assessment is based on loadflow analysis. Dynamic analysis is required to confirm our assessment of Murraylink transfer beyond 155MW. This will be completed when sufficient details of proposed fast runback control schemes become available.

Augmentations Proposed By TEA

TEA has proposed to install the following capacitor banks to support the additional Murraylink transfer.

Red Cliffs:	80MVAr
Kerang:	50MVAr
Horsham:	25MVAr

Up to 240MVAr of additional capacitors are required in the Wagga area to secure the NSW system for loss of the Lower Tumut – Wagga line. It is understood that this requirement will be determined in conjunction with TransGrid.

When Murraylink was commissioned in 2002, a number of run-back schemes were installed to limit various potential overloads and maintain satisfactory system voltages following critical contingencies. TEA has proposed a number of additional run-back schemes to increase Murraylink transfer capability under peak load conditions. Details of the existing and proposed runback schemes assumed in our assessment are included in Attachments 1, 2 and 3.

Study Case Development

Some recent changes to load forecasts and planned Victorian capacitor banks have occurred since the study case used by TEA was developed. These changes are listed below:

- We note from the PB Associates report that TEA's assessment was based on a Victorian demand forecast for summer 2003/04 of 9331MW. This figure was given in the 2001 NEMMCO Statement of Opportunities (SOO). The 2002 SOO gives a higher forecast of 9594MW for the same 2003/04 scenario. Load behaviour over summer 2002/03 suggests that the 2003 forecast may lie between these two values. The 2003 load forecast will not be available until May. We have therefore considered both the 2001 and 2002 load forecasts for summer 2003/04 in our assessment.

- Murraylink transfer capability depends strongly on loads in the outer Victorian state grid including Red Cliffs and Horsham. Recent data indicates higher growth in this area than previously predicted. The latest forecast for Red Cliffs + Horsham load is 25MW or 15% above that in the TEA study case. Our assessment is based on the higher Red Cliffs & Horsham load forecast.

- The TEA study case includes 25MVAr capacitor banks at Bendigo and Ballarat which were under consideration but have been cancelled. Our assessment excludes these capacitor banks. Their contribution to Murraylink transfer capability can be restored with an additional 25MVAr bank installed at Horsham.

Murraylink Transfer Capability

VENCorp believes that the following transfer capabilities should be achievable for the system conditions represented in the study case.

Victorian Demand	New Capacitor Banks (MVAr) Horsham	Kerang	Red Cliffs	Murraylink Transfer Capability (MW)
9331MW	25	50	80	150
9331MW	50	50	80	155
9600MW	25	50	80	140
9600MW	50	50	80	150

Table 1 – Murraylink Transfer Capability With Augmentations Quoted By PB Associates For 180MW Transfer

Transfer capabilities listed in Table 1 apply with the run-back schemes as quoted for 180MW transfer by PB Associates (refer Attachment 1). These figures are lower than the 180MW capability quoted by PB Associates by between 25 and 40MW. However, the differences can be accounted for by the changes to forecast loads and installed capacitors explained above.

Augmentations Required For Additional Murraylink Transfer Capability

Based on VENcorp's assessment, Murraylink transfer capability can be raised beyond the levels shown in Table 1 for up to 9600MW Victorian demand with the augmentations listed below.

180MW Murraylink Transfer Capability

- Fast and slow run-back schemes listed in Attachments 1 and 2.
- 50MVAr total capacitors at Horsham and Kerang.
- 80MVAr total capacitors at Red Cliffs

220MW Murraylink Transfer Capability

- Fast and slow run-back schemes listed in Attachments 1,2 and 3.
- 60MVAr total capacitors at Horsham and Kerang.
- 80MVAr total capacitors at Red Cliffs

A number of options for implementing the additional fast run-back schemes are presently under consideration. Indicative run-back operating times are shown in the attachments. Dynamic studies to finalise operating times and verify system capability will be completed as part of the design process.

Note that under all options the additional capacitors at Horsham and Kerang will need to be switched as two 25 or 30MVAr modules (depending on total requirements) to avoid excessive voltage swings. The Red Cliffs capacitor bank may need to be switched as two 40MVAr modules.

We draw the following conclusions from our analysis:

- VENCorp's calculation of Murraylink transfer capability is consistent with figures quoted by PB Associates when the necessary changes to the study case are taken into account.
- Additional augmentations required for up to 220MW Murraylink transfer capability are feasible.

We are presently discussing the above issues with TEA.

Yours Sincerely,

Matt Zema
Chief Executive Officer

Attachment 1 – Existing and New Run-back Schemes Proposed For 180MW Transfer Capacity In The PB Associates Report

Monitored transmission element	Operating Time (indicative)	Status
Slow Runback		
Ballarat to Moorabool #2*	5 minute	Existing
Bendigo to Kerang*	5 minute	Existing
Ballarat to Horsham*	5 minute (backup for fast scheme)	Existing
Moorabool transformer*	5 minute	Existing
Ballarat to Moorabool #1	5 minute	New
Ballarat to Bendigo	5 minute	New
Buronga to Red Cliffs	5 minute	New
Dederang No2 transformer	5 minute	New
Fast Runback		
Ballarat to Horsham	5~8 second	Existing
Bendigo to Kerang	5~8 second	New
Moorabool transformer	5~8 second	New
Bendigo to Shepparton	5~8 second	New
Darlington Point to Balranald	5~8 second	New
Balranald to Buronga	5~8 second	New
Wagga to Darlington Point	Complete after ~200ms	New

*retain existing 5 minute schemes

Attachment 2 – Additional Run-back Schemes Required For 180MW Transfer Capacity Based On VENCorp Analysis

Monitored transmission element	Operating Time (indicative)	Status
Fast Runback		
Ballarat to Moorabool #2	5~8 second	New
Bendigo to Shepparton	5~8 second	New
Horsham to Red Cliffs	5~8 second	New
Kerang to Red Cliffs	5~8 second	New
Darlington Point to Balranald	5~8 second	New
Balranald to Buronga	5~8 second	New
Buronga to Red Cliffs*	5~8 second	New
Bendigo to Kerang	Commence within ~100ms Complete within 500 ~ 1000ms	New
Ballarat to Horsham**	Commence within ~100ms Complete within 500 ~ 1000ms	New

* 5~8 second runback scheme replaces proposed 5 minute scheme
**Existing 5~8 second runback scheme required to remain in service

Attachment 3 – Additional Run-back Schemes Required For up to 220MW Capacity

Monitored transmission element	Operating Time (indicative)	Status
Fast Runback****		
Bendigo to Shepparton	Commence within ~100ms Complete within 300 ~ 1000ms	New
Horsham to Red Cliffs	As above	New
Kerang to Red Cliffs	As above	New
Darlington Point to Balranald	As above	New
Balranald to Buronga	As above	New
Buronga to Red Cliffs	As above	New

**** ~100ms second runback scheme may replace proposed 5~8 second scheme