

7 July 2006

Dr Pat Walsh  
Chairperson  
Essential Services Commission of South Australia  
MAC Building  
Level 8, 50 Pirie Street  
ADELAIDE SA 5000

Dear Pat,

## **Heatwave - Draft Inquiry Report**

ETSA Utilities refers to ESCoSA's "Inquiry into ETSA Utilities' Network Performance and Customer Response January 2006" - Draft Inquiry Report and provides the following comments for consideration in preparation of the Final Report.

ETSA Utilities does not agree with a number of key conclusions in the draft report, but prefers to focus on the positive initiatives it has implemented (and those recommended by the Commission which it is reviewing) as a way of moving forward to provide a better service to customers in the future.

### **General**

The January 2006 heatwave was extreme when compared to previous heatwaves. This extreme nature is recognised by the fact that the heatwave was the most severe for 63 years.

ETSA Utilities has learnt from the January 2006 heatwave and has implemented several improvements as set out below. It will continue to take action to manage extreme weather event outages in the future.

### **Improvements**

The actions implemented by ETSA Utilities include:

- Wider dissemination of “Emergency Response Level” Procedures to all relevant operational personnel and the issuing of ETSA Utilities alerts across the organisation to forewarn relevant personnel of forecast emergency conditions, eg. pager messages, two way radio announcements.
- New arrangements for field and depot based personnel including financial incentives designed to maximise the number of personnel available out of hours under such extreme circumstances in the future. Improved procedures for listing all employee contact details on the intranet and improved procedures for calling in “off duty” personnel. New procedures to determine staffing level “quotas” for emergency conditions;
- New improved procedures for sorting, managing and dispatching customer outage notifications through centralisation of this function in the Network Operations Centre. This will ensure that (a) work is undertaken to the required priority; (b) the number of field personnel is escalated in accordance with the work volumes and (c) there is a central point for status reporting to update the Interactive Voice Response system and call centre operators.
- The Outage Management System (OMS) scheduled to be completed in early 2007. The OMS will automatically link customer outage notifications to a restoration job by determining the most likely location of the fault from the calls. The OMS will enable the efficient dispatch of restoration crews by determining the closest crew to the fault. The OMS will also be able to provide status information on the completion of tasks (eg on site, patrolling etc).
- A Maximum Restoration Time Policy which modifies the existing priorities for restoration of supply in the Emergency Procedures Manual, ie. “for significant emergency situations faults will be prioritised by the number of customers affected (eg 10,000 before, 1,000 before 100 etc)”, but the policy will now include an outage time component when prioritising the restoration of single and small groups of customers to assist customers being reconnected within an acceptable time.
- Improvements to our call handling capability through:
  - a Keswick Overflow Call Centre with 50 seats has been established and will be staffed by trained staff. Training of more than 120 staff has been completed;
  - transferring calls directly to the Keswick Overflow Call Centre once the ETSA Utilities’ staff are available;
  - a review of the IVR (Interactive Voice Response) messaging and the Operational Contingency Plan has been completed. The Plan has been updated to reflect the above actions and other initiatives; and
  - modification of the messages to improve clarity.

The above initiatives will enable:

- the numbers of customers who experience extended outages during extreme weather events to be reduced;

- the provision of more accurate, higher quality information about outages to customers and the media during these “avalanche” type events; and
- the reduction in the time customers spend trying to advise EISA Utilities of an outage and obtaining status information about an outage.

## Comments

ETSA Utilities would like to make the following comments about certain aspects of the Commission's Draft Inquiry Report.

### **Forecast Temperatures**

ETSA Utilities stresses that in respect to these comments regarding forecast temperatures, it is not critical of the Bureau of Metrology for under forecasting the temperatures over the heatwave period.

ESCoSA made the following statement on page 32 of the draft report:

"However, the BoM advises that temperature forecasts are only ever a "best estimate" and cannot be guaranteed as the true outcome. BoM verification data shows an average day-ahead forecast error for Adelaide of around +/- 3°C during the summer months with 3% of forecasts (or an average of 3 days in summer) being in error by more than +/-5°C."

ESCoSA then went on to say:

"Consequently, it is clear that any person or organisation that relies on weather forecasts needs to factor in an error component to the BoM forecasts."

ETSA Utilities recognises that weather forecast can be in error but how to factor the potential for errors can be complex and cause incorrect response. For example, with the benefit of hindsight, PB Associates contended that we should have overestimated the forecast temperatures but underestimated the Forecast FDL (Fire Danger Level) in Country areas on the Sunday as forecast by the BoM. If ETSA Utilities had underestimated the forecast FDL, then more resources would have been deployed in the Metro area to respond to the heatwave. However, if the underestimate did not occur, we would have under resourced in the country to deal with the extreme fire danger. This demonstrates the problems in second guessing variations from forecast.

ESCoSA in their draft report underestimates the effects of this extreme heatwave compared to previous heatwaves. ESCoSA dismisses the effect of very high overnight temperatures on the distribution system. This is reflected by the following statement, on page 77:

"The Commission does not agree that the data provided by ETSA Utilities is amenable to the conclusion that the observed increase in overnight demand was due only to the higher than forecast overnight temperature - the Commission considers it most likely that the overnight load on 21 January would have been higher than that on 20 January even if the forecast overnight minimum temperature had not been exceeded, due to the prolonged high day-time temperatures."

ETSA Utilities has analysed the overnight residential load on transformers especially during heatwaves<sup>1</sup> and concluded that the loading is 80-90% dependent on the overnight temperature, with 10-20% dependent on the preceding day time temperature. In the heatwave in January 2001, the overnight loading of residential transformers actually decreased between the six and seventh day of the heatwave due to an overnight reduction in temperature of 0.6 degrees (ie reduced from 27.1°C to 26.5°C) despite the high temperatures of 41°C and 39°C on these days. ETSA Utilities would have expected during the January 2006 heatwave for the load between Friday and Saturday night to increase by a few percent, but not the significant increase of between 16-19%. We therefore still consider that the extreme high Saturday night-time temperatures significantly increased the number of interruptions. Both PB and ESCoSA have underestimated the effect of extreme high night time temperatures on the distribution network due to the increased residential loads.

At the end of December 2005, ETSA Utilities experienced three consecutive days of 34, 42 and 39°C temperatures with an overnight minimum of 29°C where the network experienced no major problems. Given ETSA Utilities' experience in January 2001, December 2005 and the Friday night 20 January 2006 and the BOM forecast temperatures for the weekend, ETSA Utilities believes it was reasonable to conclude that the distribution system would cope with similar levels of outages to our recent experience.

The sustained extreme temperatures caused difficulties in obtaining additional personnel in time to respond to the significantly higher temperatures (and therefore increased number of interruptions) on Saturday night. ETSA Utilities considers that the availability of additional personnel lead to the lengthy outage experience of about 5,000 customers during the heatwave. This ability to increase resources at short notice is a critical component of managing supply restoration in extreme conditions. ETSA Utilities is not able to accurately predict the effect of severe weather events on the distribution system, like the January 2006 heatwave, but we have previously been able to respond quickly. This heatwave event has highlighted the criticality of that ability to respond quickly. We consider that the actions taken (see above) will ensure an improved customer service outcome in the future to these extreme weather events.

ETSA Utilities refutes ESCoSA's suggestion that we do not have adequate processes for utilising weather forecasts in our preparations. Paradoxically the Commission acknowledges in lines 68 through to 71 of the Overview that ETSA Utilities' preparations for the heatwave "...are generally appropriate. Specific preparation by ETSA Utilities for the heatwave was undertaken in accordance with the documented emergency response procedures..." Specifically Appendix 1 of ETSA Utilities' Emergency Procedures Manual highlights the integration of BOM information into the overall management of an Emergency. Attachment 1 to this submission details the activities that took place before and during the heatwave.

Consequently, ETSA Utilities believes that:

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<sup>1</sup> Included Heatwave in January 2001, February 2001, February 2004 and January 2006 along with other high temperature periods experienced in Summer.

- the weather products available to the general public and the product specifically created for ETSA Utilities are adequate and allow for appropriate planning for extreme heatwave events; and
- the event was managed in accordance with our Emergency Procedures Manual.

ETSA Utilities therefore concludes that additional liaison with the BoM would not have substantially improved our performance during the heatwave. However, the actions implemented since the January 2006 heatwave will substantially improve the services to customers affected by a similar extreme event in future.

ETSA Utilities has a good working relationship with the BoM and will continue to work closely with it to seek to improve our response in these types of situations.

### **Failure to Complete Transformer Upgrades**

ESCOA has made the following statement in the Draft Inquiry Report on page 66:

"It is the Commission's view that if transformers are targeted for replacement/upgrading as part of a pre-season transformer upgrade program, then that work should be completed prior to summer and, in any event, should be completed prior to times of likely peak demand (ie, during January and February)."

ETSA Utilities agrees with ESCOSA that preparation work identified prior to summer needs to be completed before the 31 December each year. ESCOSA has drawn a conclusion that because ETSA Utilities had only upgraded 187 out of 237 targeted low voltage transformers prior to the extreme heatwave, we had not completed our summer preparation work associated with these transformers. This conclusion is in error as all the work required to make these transformers ready for the 2006 summer peak had been completed prior to 31 December.

ETSA Utilities employs a two stage process once it has identified a transformer that is likely to be overloaded in the near future (ie next one to two years). The first stage is to balance the phases of a transformer and/or transfer load (by changing open points) between transformers to ensure that the transformer capacity will not be exceeded during the next peak load (could be either summer or winter). The second stage is to upgrade the capacity of the transformer or to install an additional transformer to cater for future load growth of the area within our LV planning horizon (ie minimum 5 yrs). This two stage process had been explained to PB Associates as part of their review.

Stage 1 works for all the 237 transformers had been completed prior to the 31 December 2005. The effectiveness of these actions is reflected in the fact that even with an extreme heatwave not one of these transformers was overloaded. However, three of the transformers did have a LV fuse operation due to load phase balancing issues.

## Best Practice

ESCoSA has concluded that ETSA Utilities did not use "good electricity industry practice" in regard to information management in their Draft Inquiry Report.

The distributors in Queensland and Victoria performed similarly to ETSA Utilities' extreme heatwave performance, during extreme weather events about 2 years ago. As a result of these events, the Regulators and the distributors had suggested improvements to their distributors' systems and process. ESCoSA in drawing the above conclusion has assumed without any evidence that the performance of these distributors has significantly improved and now represents "good electricity industry practice". ESCOSA has assumed without demonstration that these distributors' performance would be significantly improved in extreme events now.

ETSA Utilities considers that ESCoSA has no evidence on which to draw its draft conclusion that we did not utilise "good industry" practice with regard to information management.

## GSL Payments

ETSA Utilities has analysed the reliability GSL schemes that apply in other states (NSW<sup>2</sup> and NT do not have such a scheme at present). When the South Australian scheme was introduced in July 2005, it was the most onerous scheme that applied across Australia. It had multiple payments for worsening performance and lower thresholds for country areas. The payments were double the payments made in other states for the same performance (ie >18 hrs off supply, most states paid \$80 whereas the payment in SA is \$160). In addition, South Australia's scheme requires a payment of \$120 for more than 15 interruptions in country areas, whereas the next onerous schemes pay only \$80 for the same number of interruptions.

The South Australian scheme is the only GSL reliability scheme to include planned interruptions, which provides a negative incentive to undertake planned work to either connect new customers or to augment the distribution system to improve reliability.

In Victoria in the recent price determination the existing reliability scheme was amended to include:

- higher payments for poorer performance (like SA);
- no longer differentiates between Urban and Country; and
- no longer compensates customers for long duration interruption but for the total time a customer is without supply for a calendar year.

Table 2 details the current reliability GSL payments that apply in Victoria (ie from 1 January 2006).

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<sup>2</sup> IPART recommended to the Government in April 2004 a GSL scheme that was similar to Victoria scheme but limited the number of GSL payments to four (ie maximum of \$320 pa). The scheme also had stepped payments. Duration payments were after 12 hours, no steps and for frequency for each interruption above the threshold the customer would receive a GSL payment. The thresholds for EA and IE were 9 Urban and 15 Rural and for CE and AIE 12 (Urban) and 20 (Rural).

GSL Payment	Time off Supply (Hrs)	Frequency Threshold (> no.)
\$100	20	10
\$150	30	15
\$300	60	20

**Table 1 – Victorian Reliability GSL scheme – 2006.**

ETSA Utilities has determined that if the current Victorian frequency of interruptions GSL scheme had applied in SA, we would have paid out about 40% less in compensation to customers. Therefore the current reliability frequency GSL scheme in SA is more onerous than the scheme in Victoria (ie post 1 Jan 2006).

It is not possible at this time to determine if the current (ie post 1 Jan 2006) duration reliability scheme in Victoria is more onerous than the current scheme in SA. However, it would be expected that a customer who experiences more than 60 hours of interruptions in one year would experience at least two long duration interruptions which exceed 12 hours and therefore would receive \$320 under the SA scheme, which again implies a more onerous scheme in SA.

If ESCoSA was to introduce the additional payment of \$320 for an outage longer than 24 hrs, it would be the severest penalty within Australia for a long duration interruption. The typical value of electricity purchased by the average consumer is about \$6 for any 24 hour period: some proportionality needs to be reflected in the compensation. ETSA Utilities has estimated that the additional payments would be about \$0.5M per annum, not including the costs already being incurred by ETSA Utilities due to the underestimate of costs in the regulatory decision in early 2005. It seems premature to expand the most onerous reliability GSL scheme in Australia after 7 months in operation due to one extreme event. Naturally, ETSA Utilities would be seeking recovery of these costs as a pass through if the standard was altered.

## Customer Experience

ESCoSA's Draft Report seems to have relied heavily on anecdotal evidence in drawing conclusions about the customer service experienced by customers during the extreme heat wave. ESCoSA received 18 questionnaires out of the more than 96,000 customers who were affected by the heatwave (ie about 0.02%). Also, only small numbers of customers complained to ETSA Utilities, the Ombudsman or ESCoSA as a result of their customer service experience during the heatwave. ETSA Utilities' believes that ESCoSA has placed too much reliance on such a small sample of anecdotal evidence in coming to the findings and conclusions in the Draft Inquiry Report.

## ESCoSA Improvement Recommendations

ETSA Utilities has already implemented some of the recommendations made by ESCoSA and is critically reviewing the other recommendations and will report on these to ESCoSA within 3 months of the final report being issued.

If you have any queries or which to discuss any aspects of our submission please contact Grant Cox on 8404 5012.

Yours sincerely,

Lewis Owens  
***Chief Executive Officer***  
ETSA Utilities

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## Attachment 1 – January Heatwave preparation activities

The following activities took place before and during the heatwave event:

Date	Action
19 Jan 2006	CaMS management and Incident Coordinator (IC) met to discuss preparations for the forthcoming hot weather event based on the BOM forecasts.
20 Jan 2006	IC convened a meeting of the Emergency Response Group (ERG) to plan actions for the ERL2 weekend, in response to BOM forecast (expected heatwave).
21 & 22 Jan 2006	<ul style="list-style-type: none"> <li>▪ ERG met at Keswick to plan the response and monitor progress on the heatwave event.</li> <li>▪ On each day ERL plan monitored through meetings every 60 to 90 minutes. Each participant briefed the ERG on their respective response plan component. All attempts were made to increase the crew numbers</li> <li>▪ BOM forecasts featured prominently particularly as a Fire Danger Level 2 (FDL2) day was forecast for the Sunday.</li> </ul>
<p><b>BOM Products regularly accessed during the heatwave period</b></p>	<ul style="list-style-type: none"> <li>▪ BOM Website Land Area Forecasts for:               <ul style="list-style-type: none"> <li>○ South Australia</li> <li>○ Australia (for trending information)</li> <li>○ Notes on the weather</li> <li>○ Precip Forecast for Adelaide</li> <li>○ Adelaide Forecast</li> <li>○ Town and City Forecasts</li> <li>○ Major Centres – Whyalla and Port Lincoln</li> <li>○ Major Centres – Renmark and Mount Gambier</li> <li>○ Power Utilities Fire Danger Level Advice – specifically designed for ETSA Utilities</li> </ul> </li> <li>▪ BOM Radar information</li> <li>▪ BOM Current SA AWS Observations and Fire Danger Indices – a product especially developed for ETSA Utilities for fire risk management</li> <li>▪ BOM Satellite Infrared and Colour maps</li> <li>▪ Weatherzone Lightning Strike info – paid for by ETSA</li> </ul>

**Table 2 - Emergency Response to forecast hot weather**