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Type: Monthly Report 8270 Appendix

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Subject: DCEC Residential Installation – June/July 2006

Installation Summary:

This report covers two months of operation.

The PowerTower was offline during this period as it was bypassed the previous month. At this point we have not identified the large surge that caused the homeowner to bypass the unit.

The fuel cell ran until June 5th and July 27th it was physically removed. A summary of the fuel cell operation will be reported in a separate whitepaper.

The PowerTower will be reconfigured for utility power as primary power for the next phase, but due to the communication problem it will not be brought online until we can monitor on a daily basis. A site visit is scheduled do the change over and to troubleshoot the communication.

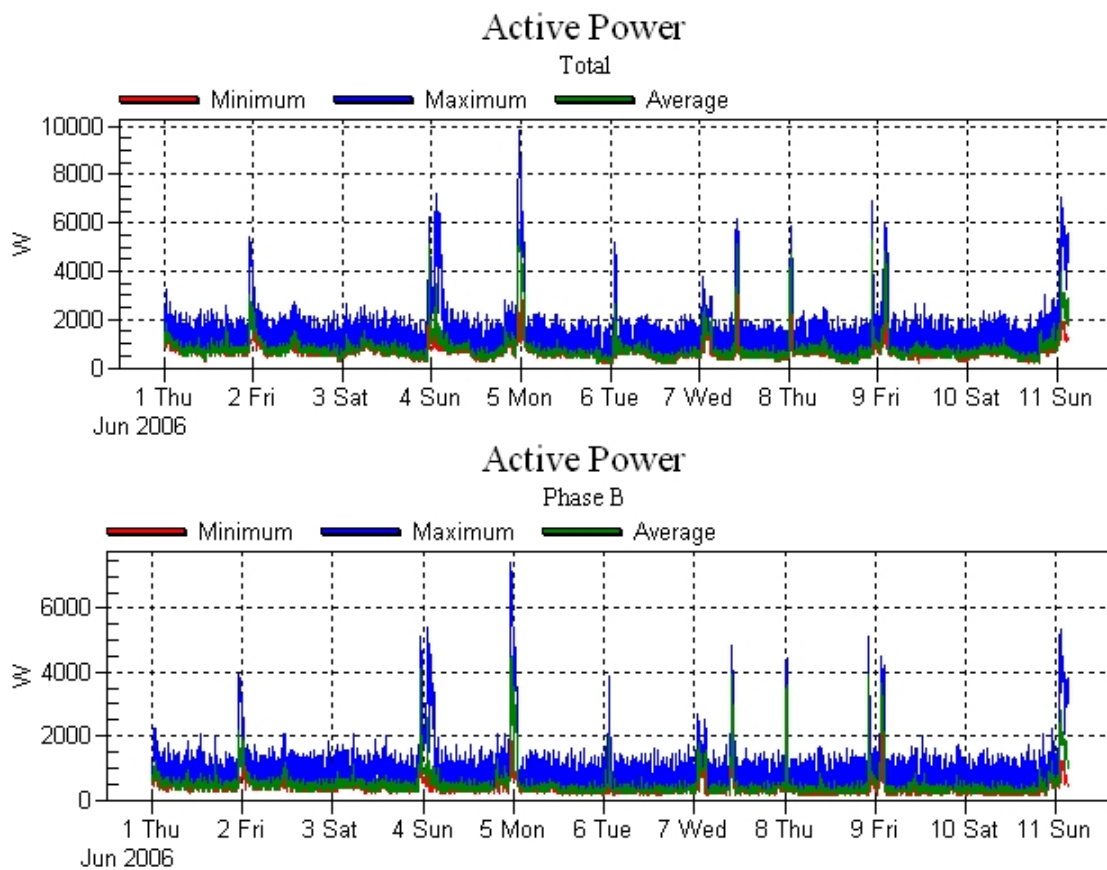


Figure 1: Total system load. Even without the hot tub the load reached more than 8kW at times, and phase B would reach more than 5.5 kW, which is the rated limit of the inverter. (SS PQ Main Panel)

The data collection in June ran into some major problems. First we thought that it was only the satellite dish that was out of alignment, but even after alignment the signal strength was too low. We have scheduled a visit to troubleshoot.

Results / Discussion

Short-term flicker was less of an issue. In fact it would appear having the fuel cell injecting current onto the grid locally brought the flicker PU value down as it can be seen in Figure 2. The flicker PU increased after the fuel cell was taken off-line.

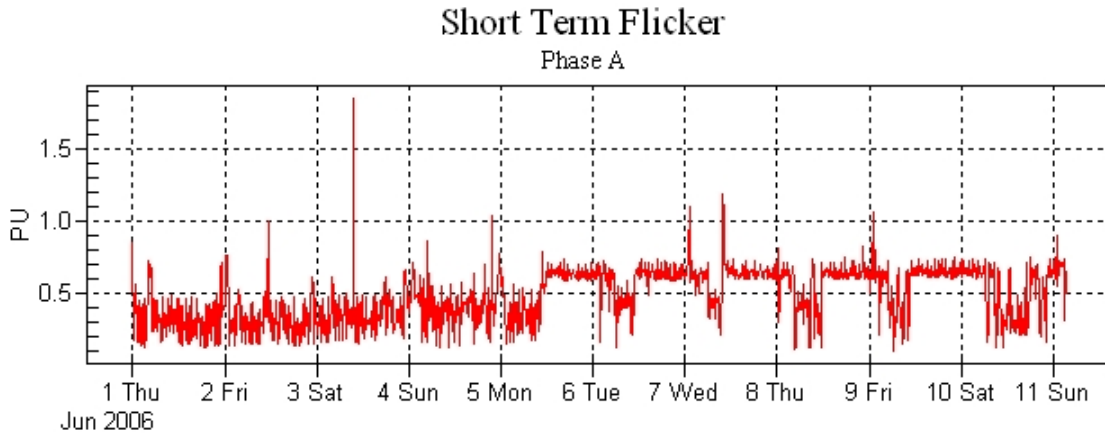


Figure 2: Short term flicker. A PU value above 1 corresponds to more than 50% of the population will notice flicker in an incandescent light bulb. (SS PQ Main Panel)

Compared to March the input current was kept at a much lower level in this period, which might have been detrimental for the fuel cell performance, as it stopped working two times in the period.

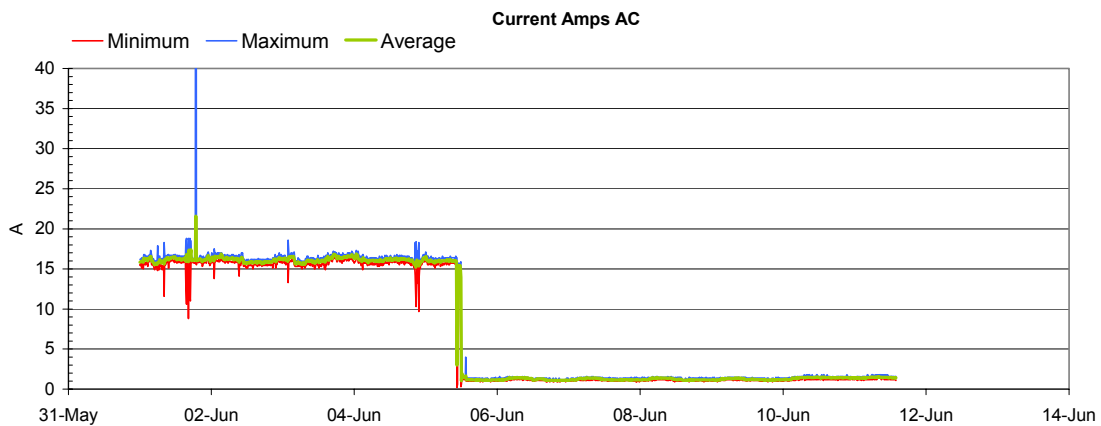


Figure 3: Fuel cell output (PP Fuel Cell Output). Fuel cell went off-line June 5th.

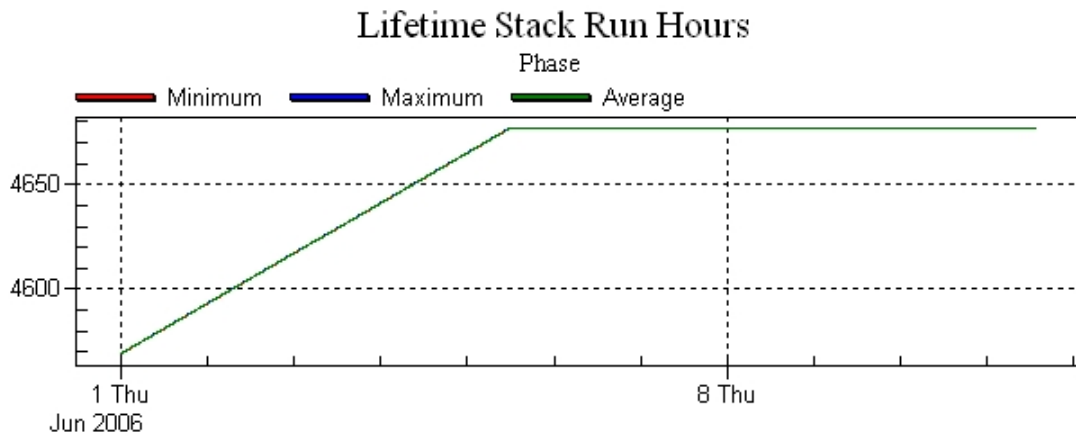


Figure 4: Accumulated run time of fuel cell stack (PP Fuel Cell Internal).