

Muja Requirements June – Sept 2014

The following charts show daily load flows for the months of June – September 2013. Imposed over these loads are the generation requirements for Muja A/B that may have been required had the current issue with the BTT1 and BTT2 occurred last year. These charts can be used as an indication of what may be required in 2014, however there are many factors that will affect requirements that cannot be accurately predicted over such a lengthy period.

Also provided are indicative requirements for Muja A/B to meet Overvoltage issues. The same process and data has been used to analyse the potential requirement for Overvoltage relief. On viewing the data for the June-Sept 2013 period, the voltage support requirement is minimal and overlaps with existing Overload requirements therefore it has not been included in charts.

Data Sources

- All load traces represent actual substation aggregate flow data in the region for June – Sep 2013
- Some data has been smoothed where readings were missing or temporary network outages occurred
- Muja Generation levels and cycling options are based on Standing Data provided by the IMO as per the Market rules .

Assumptions

- Requirements in graphs are based on an assumption of zero load growth from last year, and the exact same weather pattern and distribution patterns. Cooler temperatures could result in higher loads, similarly milder temperatures could result in lower loads.
- The loads for Katanning and Wagin substations are moved to the 220kV network
- Wherever 1,2 or 3 Muja units are required, an additional unit must also be dispatched at minimum or acceptable standby period should a main unit fail
- Other generators effective in the region are running at full output unless stated otherwise
- No open points are enabled and no Radialisation of the network has been activated for Overload requirements
- Standby requirements currently being met by minimising cold restart time. This standing data is only valid for June, at which point standby requirements can either be met through cycling or other more economically efficient methods (such as running multiple units on base load)
- Overvoltage requirements will initially be met by Mt. Barker to Albany line radialisation prior to activation of Muja A/B generation.

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Cycling options

System Management has developed plans for cycling the Muja A/B units according to actual load requirements and the Standing Data provided by the IMO. These plans involve Synchronising and de-synchronising the Muja units on a daily basis to ensure the units are only running during the peak periods when they are required.

System Management has presented these plans to Vinalco and been advised that current pricing by Vinalco would need to be adjusted to reflect the additional costs of synchronization activities. Vinalco advised that it would be more economical and the units would be more resilient if they were left to run for longer periods that overlap peak times. System Management is currently acting on the advice of Vinalco in an effort to minimise potential costs to the Market by leaving the units running. The IMO has noted the alternative approaches provided by System Management and Vinalco and acknowledged the dispatch option chosen by System Management.

The requirements below reflect the actual generation requirements over the course of the day, they do not represent the actual dispatch that will occur. It can be assumed that whenever 1,2 or 3 units are required at any point during the day, those units will be dispatched in line with Standing Data of the machines and the appropriate notification and ramping periods.

Requirements

Month	1 Units	2 Unit	3 Units	4 Units
June (Worsley GT1 unavailable)	30 Days 6-23 hrs per day Overvolt – 2 days	29 days 1-15 hrs per day	13 Days 1-4 hrs per day	0 days 0 hrs
July	28 Days 2-5 hrs per day Overvolt – 0 days	3 days 1-2 hrs per day	0 days 0 hrs	0 days 0 hrs
August	12 Days 1-4 hrs per day Overvolt – 2 days	0 days 0 hrs	0 days 0 hrs	0 days 0 hrs
September	4 Days 1-4 hrs per day Overvolt – 1 day	0 days 0 hrs Overvolt – 1 day	0 days 0 hrs	0 days 0 hrs

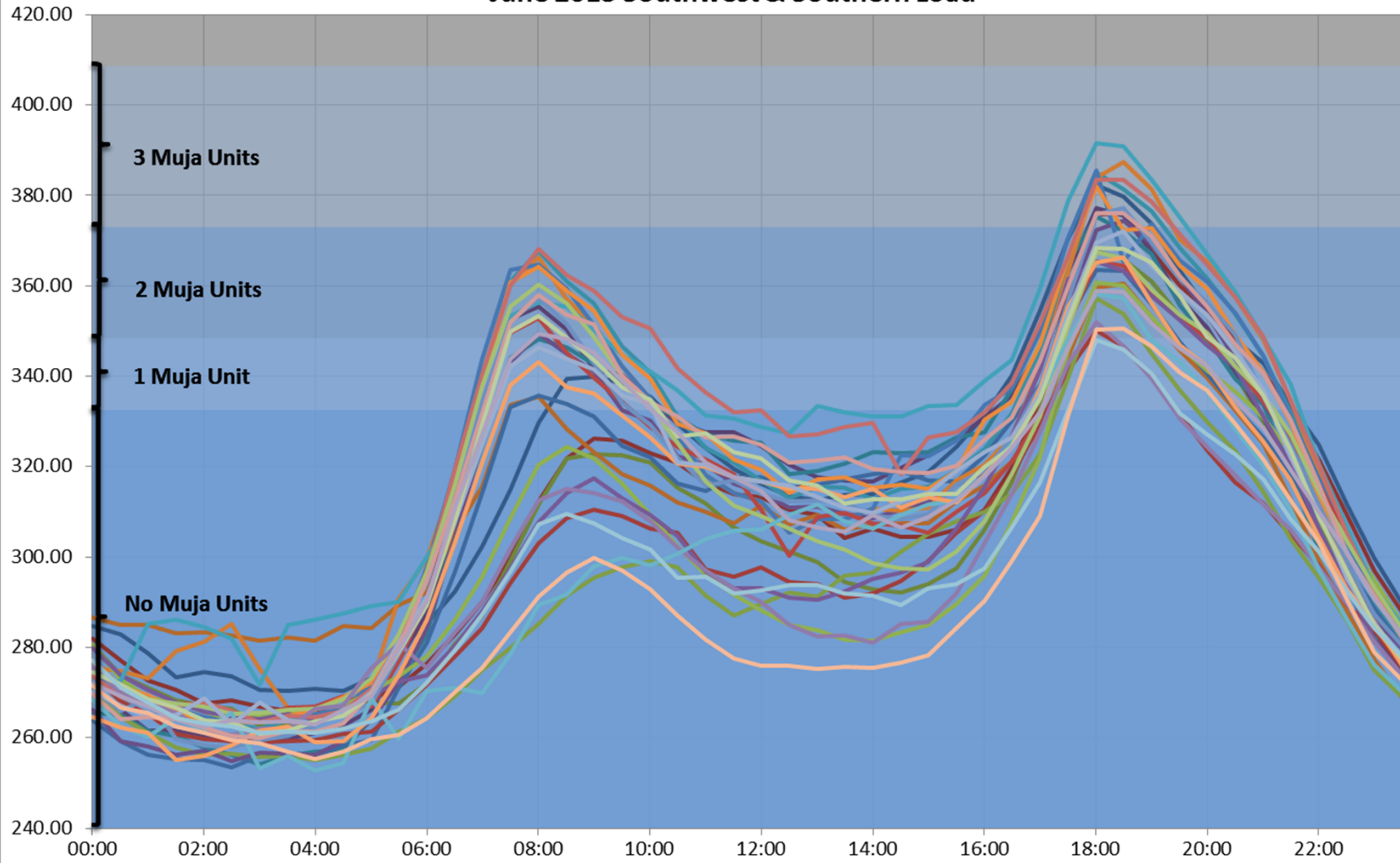
Muja A/B Dispatch Forecast

- System Management's dispatch Forecast for Muja A/B is outlined in below table in the coming months:

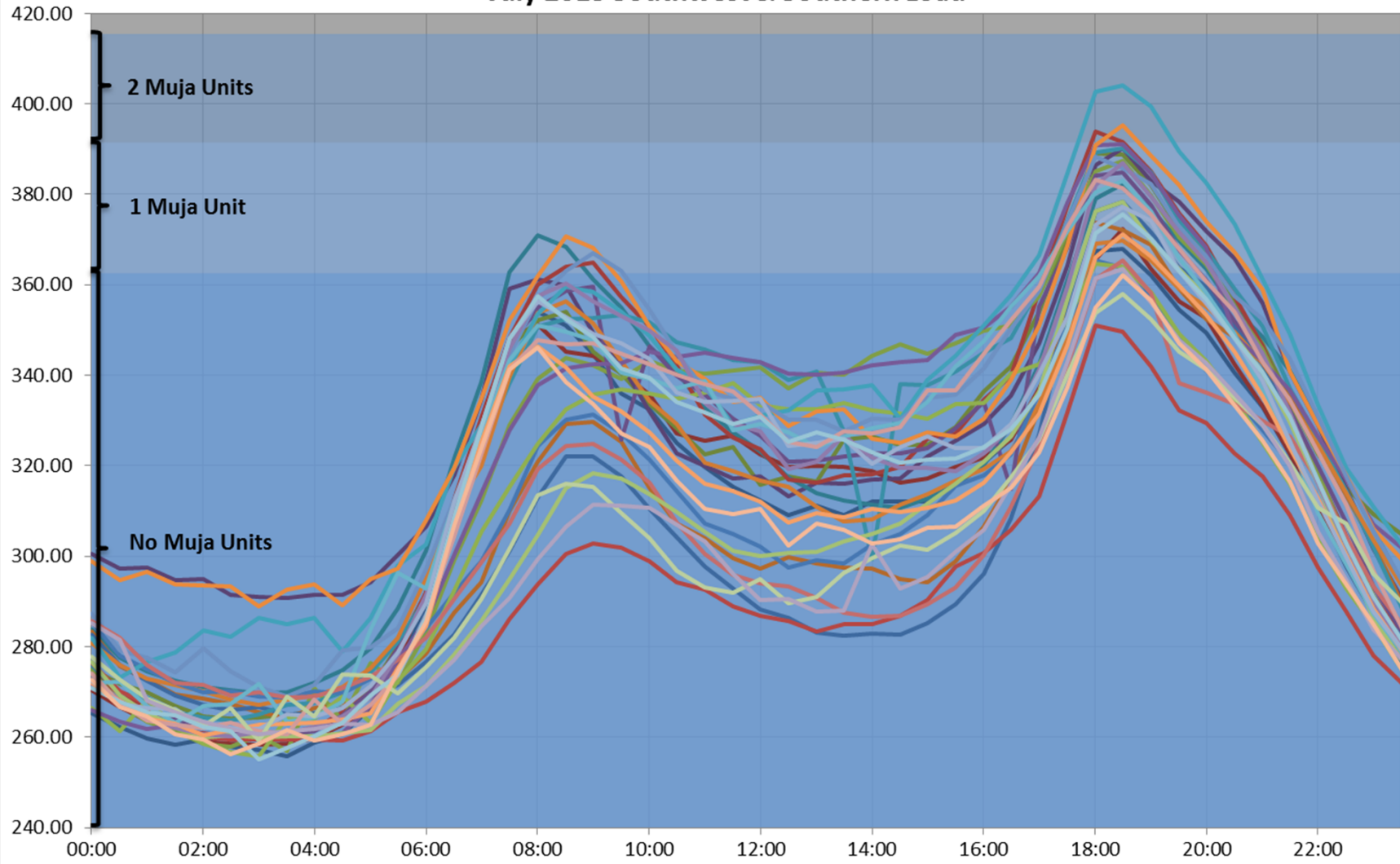
Month	1 Units
July	2 Muja A/B units on <u>all the time</u> (to cover for contingency) at minimum generation + 1 unit for 10 days at minimum generation. A few days in July the output of one of the Muja A/B units will be increased during peak periods.
August	2 Muja A/B units on <u>all the time</u> (to cover for contingency) at minimum generation.
September	1 Muja A/B unit on <u>all the time</u> at minimum generation + a second unit for 8 days

Given the large number of assumptions underpinning this dispatch forecast, the above table should be treated as indicative only.

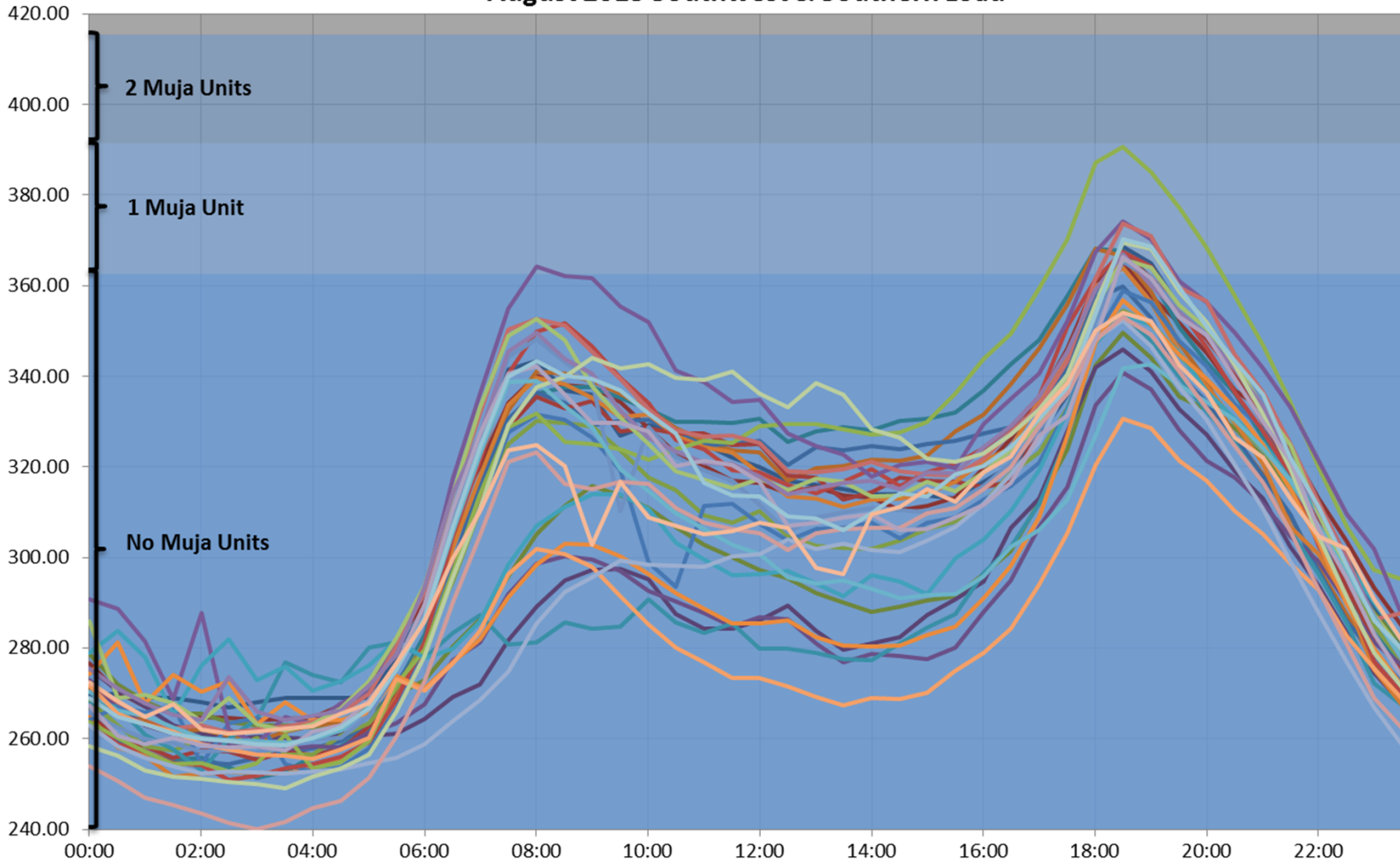
Overload relief June 2013 Southwest & Southern Load



Overload relief July 2013 Southwest & Southern Load



Overload relief August 2013 Southwest & Southern Load



Overload relief September Southwest & Southern Load

