



# Control Area Operations

## Control Area Energy Scheduling

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# Control Area Operations

## Scheduling History Prior to 888 & 889

- Utilities would purchase and sell energy schedules as needed during all periods within the hour.
- Schedules were hand entered on a log sheet and verbal communication on phones was all that was necessary for the schedule to be considered “implemented”.



# Control Area Operations

With the beginning of FERC's 888 & 889

- Control Areas soon realized that the manual handling of schedules as had been done was not do-able in the new realm of OASIS as there were just to many to handle.
- These schedules were now traversing the interconnection and achieving conformation for a schedule, source to sink, in a timely manner was almost impossible.

But without this reliability would suffer.



# Control Area Operations

One of the earliest tries at a fix for this was the apparent change for companies only to accept schedules that started at the beginning of a clock hour. This “fix” again made things do-able as far as being able to confirm and implement schedules with all parties.



# Control Area Operations

What appeared to fix for one problem also led to another. Now the interconnection is seeing frequency excursions at the beginning of some hours due to the large amounts of MW changes

(again the reliability problem).



# Control Area Operations

NERC guidelines require Control Areas to:

- Operate within reliability limits
- Maintain enough regulating reserves to cover normal operating excursions.

This is monitored by their ability to comply with CPS criteria.

With the large MW changes on all happening at the top of a hour Control Areas are having problems maintaining CPS compliance during these times.



# Control Area Operations

In addition to schedules generated by the Control Area his CPS is also affected by Generation and schedules from IPP plants within his Control Area boundaries. If an IPP does not ramp according to his schedule parameters then the Control Area's generation is required to do so to maintain the ACE within limits.



# Control Area Operations

- What we have noticed is that in order to ensure their generation is available to provide a schedule
  - Some plants start their unit well in advance of the actual schedule.
- When this happens the Control Area generation must back down to balance schedules and actuals to achieve CPS compliance.
- Control Areas are expecting all changes in generation or schedules to go as planned except in emergencies.
- This unplanned generation may cause the following problem for a Control Area.



# Control Area Operations

- For example we have a Control Area who has a capability of ramping 800MW during a 10 minute period.
  - The Control Area has scheduled to sell 800MW at the 0600 hour.
  - Now also at the 0600 hour an IPP within this Control Areas boundaries has scheduled to sell 600MW.
  - The IPP starts his units early to ensure his generation is there to meet the schedule.
- As the IPP units are increasing their generation prior to the schedule ramp period, the Control Area resources must regulate down to keep ACE within bounds & achieve CPS compliance.

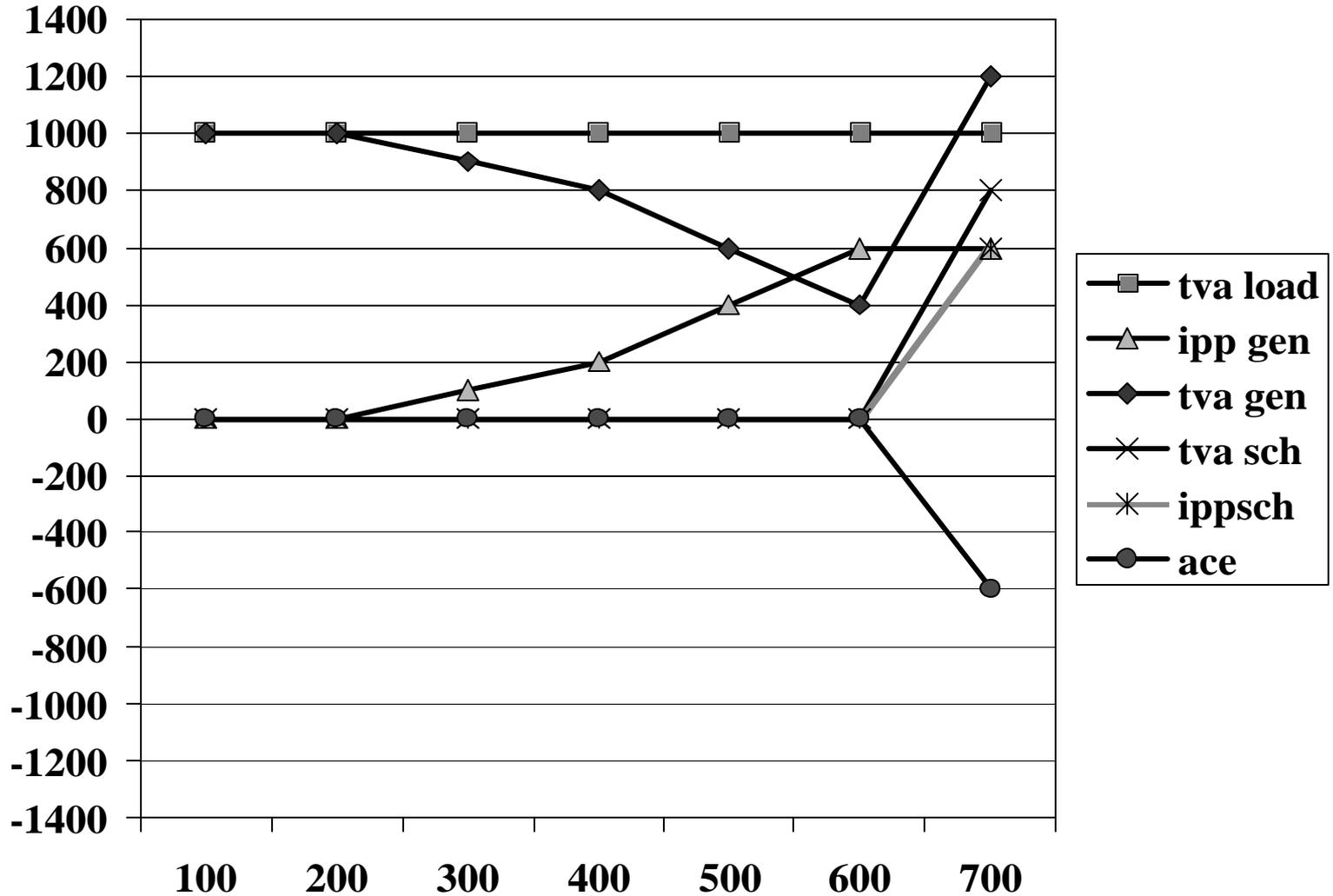


# Control Area Operations

- When the ramp for the 6 o'clock hour starts
  - The Control Area is now ramping units to cover sale.
  - In addition CA is having to pick up the additional MW that the IPP was generating without a schedule that is now going to serve a schedule
- This can cause the Control Area to exceed its ramp capability for the period and possibly fail CPS.



# Control Area Operations





# Control Area Operations

Now this brings us to what we really want to discuss with you today.

Scheduling your Generation  
&  
Generate your Schedule



# Control Area Operations

- With the advent of new scheduling system the ability is now there to allow more flexibility in the scheduling of your generation.
- From our perspective you are no longer confined to having your schedules start or change only at the beginning of a hour but at the times and at the rates that best fit your market and generator capability.



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- TVA's scheduling system has the ability to:
  - Accept and process schedules with ramps other than the 10 minute standard
  - Ramp periods other than just the top of the hour.
- We would like to work with you to help you schedule your units so that your schedules will match the capability of your generators.
- In doing this you will be helping interconnection reliability and also save your company money on the possible imbalance penalties.



# Control Area Operations

- With us you can actually put in a schedule with a ramp that your units can follow which works better for both you and TVA.
  - From our standpoint TVA resources are not required to swing as much for schedule changes that do not follow what your units are capable of.
  - You will encounter less imbalance if you have the option to put in schedules with ramps your units can follow.
- We can do ramps of any length up to 60 minutes or multiple ramps for a schedule. Either or both in combination to help you meet your generators capability curve best.



# Control Area Operations

- We are just a phone call away and ready to provide your with assistance if you have questions about how to best schedule your generation to;

minimize our swing and maximize your gain

- contacts:
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Questions?

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