

# SUB BALANCING AREA REGULATION

WESTERN AREA POWER ADMINISTRATION



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- ① Western is contractually obligated for approximately 30 MW of regulation for LSE interchange deviation.
- ① The other 30 MW's is used to manage
  - ① Transmission Loss Forecast Issues
  - ① Bulk Electric System Frequency Issues
  - ① SMUD BA Regulation Contractual Requirements.



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- ③ History has shown that 60 MW of regulation up and 60 MW of regulation down provides sufficient regulation to perform our responsibilities better than 90% of the time.
- ③ This is the amount of regulation we plan to maintain.



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- ③ The AGC dispatcher is responsible for maintaining CVP generation schedules at or near pre-schedule. During the ramp planning process, the AGC Dispatcher makes decisions for buying or selling energy to balance CVP generation pre-schedules.



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- ③ Each hour the AGC Dispatcher compares the available hourly resources in the SBA to estimated SBA load. The key word is estimated and due to Transmission Losses estimated three days in advance of an actual flow day, Load following for the entire SBA and market constraints, regulation must be used to maintain a system balance.



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- ③ Transmission Losses can be as small as 10 MW and can be as big as 150 MW
- ③ Transmission Losses are largely dependent upon COTP flows and we do not have an opportunity to see the scheduled flow on the COI until 5 PM the day before flow day
- ③ This is two days after we have already divvied up the CVP generation scheduled for the day



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- ③ We have performed load following studies considering regulation usage.
- ③ November, December, January, February, March and April:
  - Most hours of the day loads are changing less than 50 MW per. We are starting to see a few hours each morning and a few hours every evening with large load pulls greater than 50 MW. We are seeing this from 0600 (HE7) to 0900 (HE9) and 1700 (HE18) to 2100 (HE21). Evening load pulls start to get later and later as we move into March and April.



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- ⊙ Regulation usage in May, early June:
  - Morning load pulls above 50 MW are beginning to get larger and larger and extending for longer periods of time. While evening load pulls are flattening out with loads beginning to drop steadily after the evening peaks.



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- ⦿ Regulation usage in Late June, July, August, and early September:
  - During the hot summer month's loads are changing more than 50 MW per hour during most hours of the day. There are 5 to 6 hours on most mornings where load changes are less. Usually from 0100 (HE2) through 0700 (HE7) load changes less than 50 MW per hour.



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- ⦿ Regulation usage in Late September, October:
  - Loads are changing less than 50 MW per hour in almost every hour of the day. 2100 (HE22) through 0100 (HE1) are the exceptions. Fairly heavy load drops are occurring during these hours.



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- ⦿ In conclusion:
  - ⦿ The study performed following this past winter indicated even with small load changes across the off peak hours in the winter, Western still used all it's down regulation on numerous occasions.
  - ⦿ Questions and Answers
  - ⦿ SNR operations would like to thank you for your time and attention.



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