

Regulation Signal Saturation and Manual Moves

December 10th 2015

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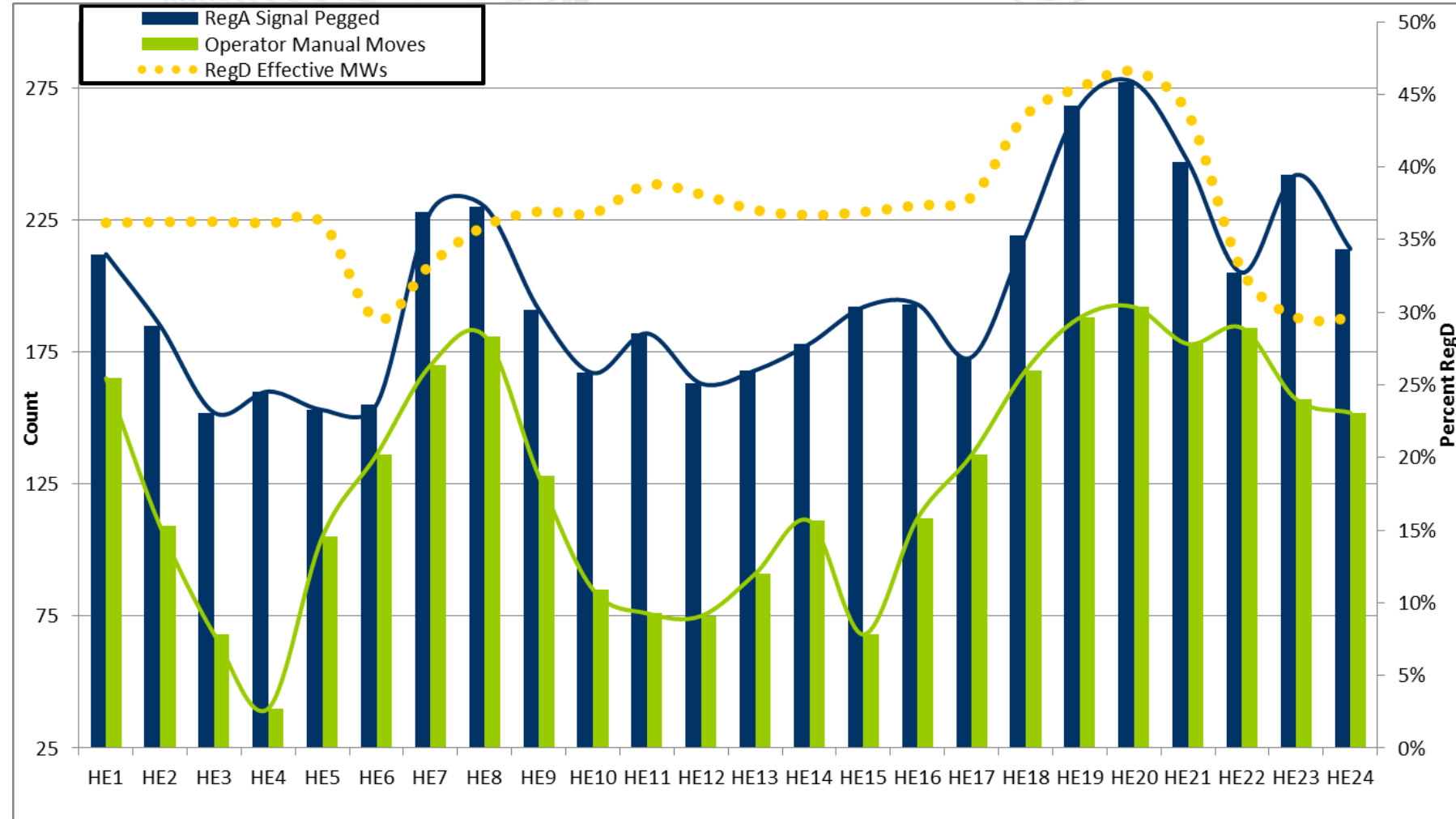
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- Regulation Signals are in a full raise or lower state (+/- TREG) when there is a generation/load imbalance and ACE is at extremes
 - Regulation A will continue to hold at a full raise or lower until ACE returns to normal bounds
 - Regulation D logic brings the signal back to zero, which goes against ACE correction
- Operators utilize the regulation manual move to force signal to specific utilization percentages
 - Forcing Regulation D to extreme may deplete storage, which could potentially impact storage performance

- Common Reasons for Signal Saturation and Manual Moves
 - Unexpected sudden change in generation
 - Unexpected sudden change in load
 - Unexpected large interchange swing
 - Generation lagging or not following economic dispatch
 - Frequency excursion outside PJM
 - Load forecast error

Regulation Signals Pegging and Manual Moves

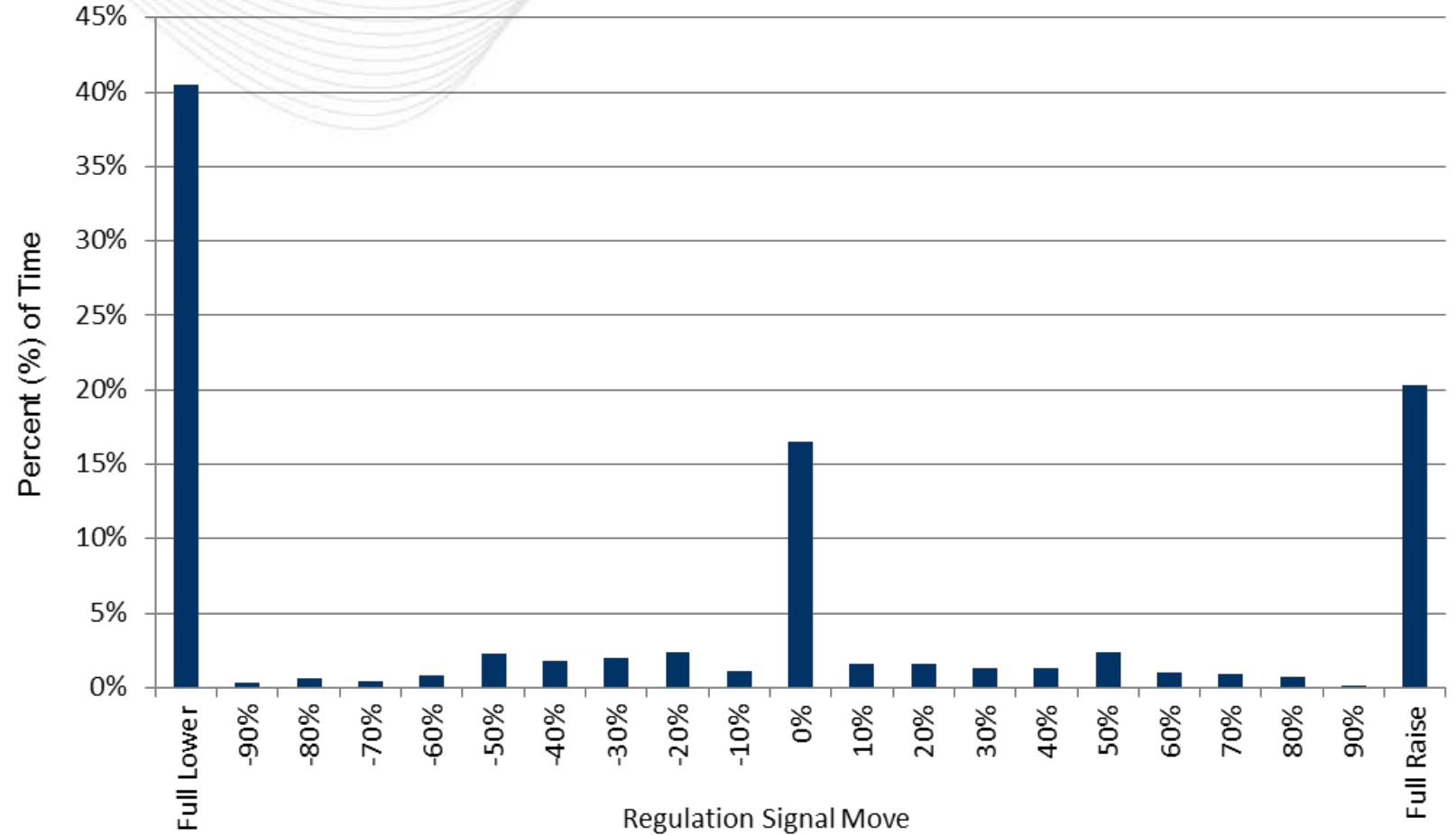
- **Reg A Signal Pegged**- represents the number of hours when the RegA signal was pegged (either high or low) for a duration of longer than 15 minutes
- **Operator Manual Moves**- represents the number of hours when the regulation signals were manually moved by the operator



Data from June 2014 - June 2015

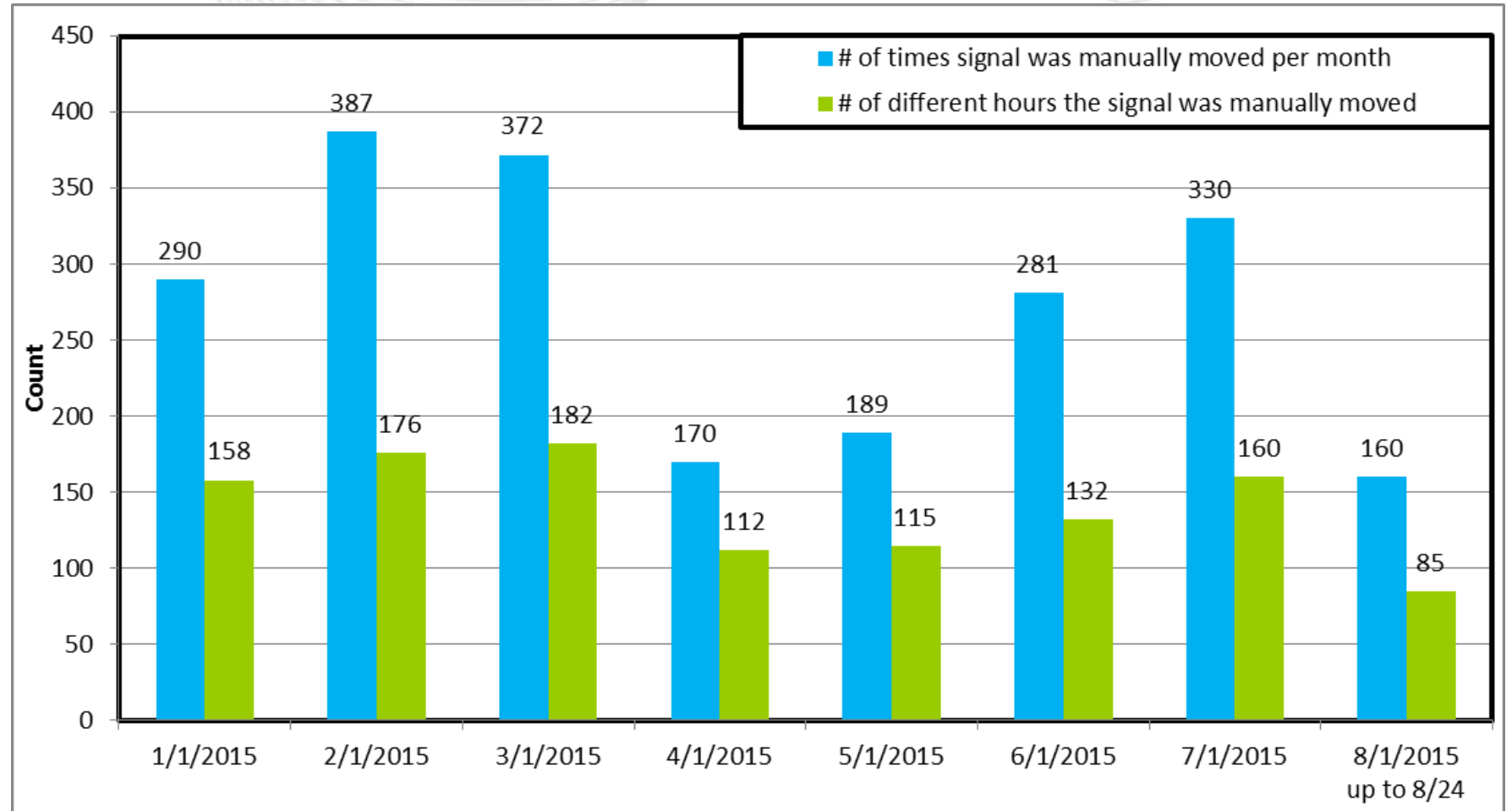
Regulation Manual Moves - Percentage

- Operators can manually move the regulation signal to a full raise, full lower, or any % in between



Data from April 2014 – Sept 2015

- Operational Manual Moves Monthly View
- Each time the signal is manually moved the duration can be anywhere from a few seconds to a few minutes



Data Jan 2015 – Aug 2015