• Background
  – Bal-001-2 Real Power Balancing Control Performance became effective 7/1/16
  • CPS2 was replaced with RBC
  – NorthWestern participated in a Field Trial from March 7 to June 30. This gave us the opportunity to control to RBC (rather than CPS2) without penalties for violating the standard
Key differences between CPS2 and RBC

- CPS2 limits are constant, regardless of the frequency in the interconnection.
- RBC limits vary based on frequency.
- CPS2 requires being within the limits in 90% of the 10-minute periods in a month.
- RBC requires moving back within the limits in 30 minutes or less.
CPS1 and CPS2
CPS1 and CPS2
BAA Limits Vary with Frequency

Frequency

BAAL High and BAA Low
# RBC INC and DEC Dispatches

## March '16 through February '17

<table>
<thead>
<tr>
<th>Dispatch Instances</th>
<th>Number</th>
<th>Max Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INC</td>
<td>57</td>
<td>122</td>
</tr>
<tr>
<td>DEC</td>
<td>73</td>
<td>166</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td></td>
</tr>
</tbody>
</table>
Current Flexible Capacity Need

Flexible Capacity Need vs. Resources

- Within-hour INC: 150 MW
- Contingency Reserves: 65 MW
- Regulation: 50 MW
- DGGS: 150 MW
- Basin Creek: 52 MW
- Hydro: 45 MW
- Colstrip 4: 24 MW
Near Future Flexible Capacity Need

Flexible Capacity Need vs. Resources

- Within-hour INC: 150 MW
- Contingency Reserves: 65 MW
- Regulation: 50 MW
- Additional Contingency Reserves: 6 MW
- Additional INC: 75 MW
- DGGS: 150 MW
- Basin Creek: 52 MW
- Hydro: 45 MW
- Colstrip 4: 24 MW

NorthWestern Energy
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