Assessing the Adequacy of the PNW Power Supply

RAAC/DFAC Joint Meeting
November 1, 2016
GENESYS Flow Diagram

- Load
- Wind/Solar
- Contracts
- Hydro Data

- Thermal Data
  - Thermal Dispatch
  - Purchases
  - Generation
  - Cost

- Curtailments
  - Elevations
  - Outflows
  - Spill

- Standby

- LOLP

Northwest Power and Conservation Council
nwcouncil.org
Transmission in GENESYS

- NW region includes: East (E) West (W)
- Solid lines indicate transmission into and out of the region
- Not a power-flow analysis
- East/west transmission capability varies based on BPA data
- Southern interties have fixed transfer capability
- SW modeled as import market only
Assessing Adequacy

- Run every combination of temperature and streamflow (80 times 77 = 6,160)

- Count only existing resources or those that are sited and licensed

- EE is built into the load forecast

- Count the number of simulations (games) that have at least one curtailment
Loss of Load Probability

6160 Simulations

Out of 6160 simulations, 308 had curtailment events (red bins)

Loss of Load Probability (LOLP) = \( \frac{308}{6160} = 5\% \)
## 2021 Adequacy Results

(LOLP > 5% means inadequate)

<table>
<thead>
<tr>
<th>Case</th>
<th>No Boardman No Centralia 1</th>
<th>No Boardman No Centralia 1 No Colstrip 1 &amp; 2</th>
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</thead>
<tbody>
<tr>
<td>Loads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Load</td>
<td>24 %</td>
<td>31 %</td>
</tr>
<tr>
<td>Med Load</td>
<td>10 %</td>
<td>13.2 %</td>
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<tr>
<td>Low Load</td>
<td>4 %</td>
<td>5.1 %</td>
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