PNUCC Load Forecasting Workshop (2.0)

Meeting Recap – November 1, 2016
Workshop takeaways

- Load growth across the region is tepid
  - Annual energy and winter loads not materializing as expected
  - Exception for utilities seeing large projects arrive in service area

- Summer loads growing faster than winter

- Codes and standards impact loads

- New loads still on the horizon
  - Indoor agriculture loads less than expected
  - EV adoption has been slower than projected
Puget’s peak load forecast flat for 10 years

Shared by Puget at load forecasting workshop
PGE sees rising summer peaks

Shared by PGE at load forecasting workshop
Increased cooling degree days for Avista

Time Trend of Moving Averages of Different Periods, 1977-2015

Shared by Avista at load forecasting workshop
Codes and standards add up

Shared by NWPCC at load forecasting workshop
Incorporating energy efficiency

• We did not dig into the topic expressly at the workshop

  – Any utilities on the phone or in the room interested in sharing how they incorporate energy efficiency into their forecast?
## RAAC load forecast comparison

<table>
<thead>
<tr>
<th>Forecast characteristics</th>
<th>2002-13 actual</th>
<th>2015 RAAC (for 2021)</th>
<th>2016 RAAC (for 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>12</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Mwa</td>
<td>20,412</td>
<td>21,783</td>
<td>20,250</td>
</tr>
<tr>
<td>Years with an hour above 09 max</td>
<td>1 at max (2009)</td>
<td>25</td>
<td>36</td>
</tr>
<tr>
<td>Years with an hour above 40,000 MW</td>
<td>0</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Median winter max</td>
<td>31,514</td>
<td>33,643</td>
<td>34,919</td>
</tr>
<tr>
<td>Median summer max</td>
<td>27,354</td>
<td>26,850</td>
<td>28,240</td>
</tr>
<tr>
<td>Max</td>
<td>35,316</td>
<td>41,301</td>
<td>46,257</td>
</tr>
<tr>
<td>Dec load factor</td>
<td>0.77</td>
<td>0.78</td>
<td>0.68</td>
</tr>
<tr>
<td>Raw LOLP, V13 (800 games)</td>
<td>N/A</td>
<td>8.7</td>
<td>12.7</td>
</tr>
</tbody>
</table>
Questions for 2017 RAAC forecast

– Should the forecast aim for a load factor similar to the past few years?

– Should the peaks and annual energy values be compared to recent events to check for reasonableness?

– Should the RAAC run the new model with 2016 and 2017 loads to understand the impact loads play in LOLP?