2010 Wind Integration Study – Draft Study Design
Question and Answers

1. Page 14. What CPSII reliability metric value are you intending to use? I see you state that it is tied to historical performance, what is that number?

    Response to 1: The Company intends to estimate reserve requirements to maintain a CPS II reliability score of 97%, which is consistence with historical performance.

2. Page 14. What levels of wind penetration are you intending to use?

    Response to 2: Please refer to page 24 of the draft study design document. A wind penetration baseline will be based upon existing owned and contracted resources. Incremental wind penetration levels from this baseline have not yet been established. The Company welcomes comments on wind penetration scenarios.

3. On page 10 of the power point, when you discuss "observed metered data where available" how granular do you mean? At each wind facility site? You are talking about actual historical data, correct?

    Response to 3: On a temporal basis, the Company intended to evaluate how to best make use of metered data (actual historical data) on the 10-minute timescale. On a geographic basis, the Company will utilize data at the most granular level of metered data available. In most cases, metered data is available for each wind resource; however, there are some resources for which metered data are not available at the plant level. For example, metered data is only available for Rolling Hills and Glenrock in aggregate.

4. Page 18. Why are you converting wind into daily flat energy in the load run, and putting back the wind profiles in the load net wind run of PaR? Why would you not have the wind profiles in both runs and compare the incremental cost differences of those runs?

    Response to 4: To isolate the incremental cost of holding reserves due to variability associated with wind, the Company needs to first estimate the cost of holding reserves without accounting for wind variability. This baseline simulation will include reserve requirements driven by load variability (but not wind variability). To ensure that unit commitment decisions within the PaR simulation are consistent with the reserve requirements, the wind variability is being "removed" from the simulation by flattening the wind profile.   In this way, the system costs simulated using PaR will only account for variability driven by load.

5. Page 18. What wind penetration levels? IRP assumed wind acquisition schedule?

    Response to 5: See response #2.

6. Page 18. Would you turn off the stochastic risk function in PaR in the two runs, so that the only difference in the two runs is the incremental increase in reserves? Would you run PaR for the full 20 years in all model runs?

    Response to 6: The PaR simulation would be deterministic. The simulation period in PaR has not yet been established.   The Company intends to work with the technical advisor in defining simulation timeframes required to adequately capture intra-hour wind integration costs consistent with the data used to develop incremental reserve requirements that feed the analysis in PaR.

7. Page 18 indicates that reserves will be optimized endogenously in the simulation. Should we expect actual operation be exogenous? Is there likely to be opportunity for sale of this product to other utilities? Are there dozens of other utilities doing this same thing and have wind integration generation for sale?

    Response to 7: Unit dispatch (operation) and reserve optimization will be endogenous to the PaR simulation. The study design is structured to measure how intra-hour wind variability increases costs on PacifiCorp's system due to incremental reserve requirements needed to maintain reliability. The hourly market structure in which PacifiCorp operates does not facilitate transactions for intra-hour reserve products.