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**ICNU Data Request 6.10**

Please provide a detailed explanation and all supporting work papers for the variation in the hydro generation for each West hydro generating facility between the current proceeding and UE-100749.

**1st Supplemental Response to ICNU Data Request 6.10**

Further to the Company’s response to ICNU Data Request 6.10 dated October 26, 2011.

Please refer to Confidential Attachment ICNU 6.10 -1 1st Supplemental for hourly hydro generation in the Company’s 2010 general rate case (Docket UE-100749), which excluded planned and forced outages.

Please refer to Confidential Attachment ICNU 6.10 -2 1st Supplemental for hourly hydro generation in the current proceeding, which included the planned and forced outages. Planned outages are inputs to the Vista model, and the model optimizes the utilization of streamflow around the timing and duration of the planned outages. The impact of forced outages is reflected after the Vista run as explicit reduction in generation, given the unexpected nature of forced outages.

Please refer to Confidential Attachment ICNU 6.10 -3 1st Supplemental for the development of planned and forced outages in the current proceeding. The preparation of the files is as follows:

1. Identify planned and forced outages for January 1, 2007 through December 31, 2010.

For planned and forced outages do steps 2 through 5 separately:

1. Sort outages by plant and convert length from hours to days.
2. Use pivot table to average the number of days offline per month at each plant.
3. Sum the outages by month to get average number of outage days per month.
4. Create outage cases for each plant based on the results from step 4 above:
	1. The number outage days in each month are placed randomly in weeks of the month.
	2. For months with a high number of outage days, the days were scheduled in contiguous weeks.
	3. Months containing less than 1 average outage day were ignored or combined.

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* 1. The sum of the yearly outages at each plant was checked to match the results of step 4.
1. Planned outage cases are input into Vista.
2. Forced outage cases are further assigned a random starting day within the month and applied to Vista output. The Vista generation and capacity output is reduced so that it does not exceed the outage-reduced capacity. The forced outages are applied as a capacity limit which is zero for single-unit plants and the remaining plant capacity for multiple unit plants. The outage-reduced generation is the lesser of the remaining capacity and the scheduled generation. In many cases, a single-unit outage results in no lost generation.

This process is used for the Lewis, Klamath and North Umpqua Rivers. For run-of rivers, the outages have been reflected in the historical generation that is the basis of the normalized generation for the test period.

Confidential information is provided subject to the terms and conditions of the protective order in this proceeding.

PREPARER: Connely Baldwin

SPONSOR: Greg Duvall