**Questions regarding IMM Software to Estimate Benefits of RTC**

*1. I have a question about the way congestion cost was calculated for the RTC study.* (LCRA)

*i. Coopt Congestion - sum of RTC shadow price \* Math limit for all constraints in interval / 4 – Makes sense*

*ii. SCED Congestion - sum of SCED shadow price \* Math limit for all constraints in interval / 4 – Why Math limit was used and not the SCED limit? If SCED limits are used the Congestion cost savings number will be lot different than the $257M as published in report.*

A. Upon further reflection and analysis, the IMM feels that using the published limit is the better way to characterize congestion changes in both the SCED simulation and the co-optimization simulation, as the math limit calculates the congestion as if Private Use Network gross loads were used in calculating Load Zone prices, which they are not. Using the limit in the calculation lessens the congestion reduction from $257M to $212M.

*2.* *Please post the change in annual generator revenue by zone.* (NRG)

A. The IMM has published detailed results that will enable you to determine what all of the revenue changes are. To find out:

1) For each row in the outputYYYMMDD.csv files, multiply the basepoint of the generator in the SCED simulation (column GD if not "NA") by the LMP of the generator (column GE) in the SCED simulation and divide by 4. This is the revenue for that generator for that 15 minute interval in the SCED simulation.

2) Next, multiply the basepoint of the generator in the co-optimization simulation (column GH if not "NA") by the LMP of the generator in the co-optimization simulation (column GL) and divide by 4. This is the revenue for that generator for that 15 minute interval in the co-optimization simulation.

3) Compare the value from step 1 to the value from step 2; that is the change in revenue.

4) Sum the results of step 3 up over the year. The results are the change in annual revenue by generator. Then,

5) Map the generators to zones and sum the results of step 4 by zone. Those results are the change in annual revenue by zone.