February 1, 2011

VIA ELECTRONIC MAIL

Mr. L. Jan Reid
Coast Economic Consulting
3185 Gross Road
Santa Cruz, CA 9506-2091

Re: ISO Response to the first set of L. Jan Reid Data Requests

Dear Mr. Reid:

Enclosed please find the ISO response to the first set of L. Jan Reid Data Requests propounded in the Long Term Procurement Proceeding, CPUC Docket R.10-05-006.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Judith B. Sanders
Senior Counsel
California Independent System Operator

Cc: Service List R.10-05-006

BEFORE
THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate And Refine Procurement Policies and Consider Long-Term Procurement Plans	)))	R.10-05-006

RESPONSES OF THE
THE CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION TO
THE FIRST SET OF DATA REQUESTS FROM
L. JAN REID

Data Request No. 1:

Pursuant to Public Utilities Code § 1822(a), please provide a working copy of the model(s) used by the CAISO (CAISO Model) which was used to produce results presented by the CAISO at the CPUC's November 30, 2010 workshop.

Response to Data Request No. 1:

For the Step 1 analysis the ISO used software developed by Pacific Northwest National Laboratory (PNNL). The ISO cannot make the software available due to commercial licensing restrictions but has made the input data available:

http://www.caiso.com/23bb/23bbc01d7bd0.html

At that page please reference:

33% RPS Study Step 1 Input Profile Data
zip 16497K | Abstract | 11/15/2010 08:57

For the Step 2 analysis the ISO uses the commercially available production simulation software PLEXOS that can be acquired. The ISO has posted the input data used, which is available data are available on the ISO website at

http://www.caiso.com/23bb/23bbc01d7bd0.html

At that page please reference:

Getting to 33% RPS
33% RPS Integration Study Step 2 Production Simulation Input Data
zip 15048K | Abstract | 01/07/2011 11:57

Data Request No. 2:

. Pursuant to Public Utilities Code § 1822(b), please provide a listing of all of the equations and assumptions built into the CAISO Model.

Response to Data Request No. 2:

Please refer to the Integration of Renewable Resources: Technical Appendices for California ISO Renewable Integration Studies Volume 1 post on the CAISO website at:

http://www.caiso.com/282d/282d85c9391b0.pdf

Data Request No. 3:

Pursuant to Public Utilities Code § 1822(c), please provide an electronic copy of any and all data bases used by the CAISO's Model.

Response to Data Request No. 3:

See response to Data Request No. 1. Step 2 data inputs and other related data are available on the CAISO website at

http://www.caiso.com/23bb/23bbc01d7bd0.html

Data Request No. 4:

Please provide a list of the hardware requirements necessary to run the CAISO's Model. Hardware requirements include computer type, processor speed, available memory, and free hard drive space.

Response to Data Request No.4:

The hardware requirement to run Plexos is dictated by the Xpress Solver that Plexos uses. Here is a link to the requirement http://www.fico.com/en/Products/DMTools/xpress-overview/Pages/Xpress-Hardware.aspx.

The ISO uses virtual machines with the following configuration

CPU: Six-Core AMD Opteron(tm) Processor 8435 (2 Cores available for each virtual machine)

Memory – 8 GB

HD Space – 10 GB

Plexos Software

PLEXOS Version - 6.104 R16

Solver - Xpress-MP 20.00.11 (component - PLEXOS Support for Xpress-MP and Xpress-MP Base Product)

Data Request No. 5

Please provide the CAISO Model's run time for one year of data. (e.g., 36 hours)

Response to Data Request No. 5:

The total run time for the "33% Reference Case with no Load Following Down Requirement" case is 751.1 hours on one ISO virtual machine (it was actually run on four virtual machines simultaneously).

Run time by month (hours)

Jan – 80.2, Feb – 71.0, Mar – 85.9, Apr – 96.9, May – 70.1, Jun – 71.7,

Jul – 21.5, Aug – 23.3, Sep – 39.9, Oct – 61.3, Nov – 71.3, Dec – 58.0

Data Request No. 6:

Please provide an electronic copy of any CAISO studies which show that the T-2 persistence method is more accurate than the T-1 persistence method for estimating improved error values

Response to Data Request No. 6:

The CAISO has not asserted that the T-2 persistence method is more accurate than the T-1 method and therefore has no studies to provide. The T-2 was used for analysis of forecast error. The ISO has also performed analysis using T-1 persistence. The ISO proposes to use T-1 persistance as the basis for improved solar forecasting error approach after perfuming T-2 and T-1 persistance analysis on the new profiles being developed based on the new CPUC scenarios.

Data Request No. 7:

At the December 20, 2010 pre-hearing conference (PHC) in this proceeding, Judith Sanders of the CAISO stated that the CAISO would be able to model two additional scenarios by March, 2011. (December 20, 2010 PHC Transcript, p. 145, lines 6-23) Please provide a detailed explanation of why it will take the CAISO two months to model two additional scenarios.

Response to Data Request No. 7:

As noted in the response to Data Request No.5, the production simulation is simulation of all 8760 hours an operational year given the input requirements. This process requires significant amount of computational time as well as running, review of results a rerunning to resolve observed violations until all violations are resolved. This effort takes approximately 1 month per scenario.