DOCKET
09-IEP-1C
DATE Feb 17 2009
RECD. FEB 18 2009

DWR's pump load is primarily dependent on precipitation, contractor demand for water, and the cumulative effect on reservoir storage of aqueduct operations (particularly the effect of operations in the previous two or three years). As a consequence, the timing and magnitude of DWR's yearly energy requirement shows substantial year to year variation: for example, during the last 10 years, the total yearly pump demand in the highest demand years exceeded the demand of the lowest by nearly three *times.* Energy production at DWR's hydro generation facilities shows similar variability.

Demand and energy supply modeling is accomplished using an in-house designed aqueduct operations simulations model that calculates water flows past selected points in DWR's system and provides corresponding energy demands or supplies.

Inputs for modeling efforts include:

- Forecast precipitation levels based on data from a periodic snow surveys combined with precipitation data from remote sensors.
- Historical hydrology based on a 90% exceedence level and a 50% delivery for the Feather River Service Area.
- Contractor water demands: contractor-supplied forecasts of total turnout delivery.
- Forecast outages.
- Reservoir storage carryover.
- Adjustments reflecting operational constraints (e.g., possible constraints at Devil Canyon reflecting expected afterbay demand pattern).
- Delta operations assumptions appropriate to environmental and operational restrictions.
- Forecast generation for non-aqueduct energy supplies under contract to DWR.
- Aqueduct generation assumptions: Hyatt/Thermalito generation is maximized on-peak except that a minimum of 8% of the generation is off-peak to approximate actual operation. All other pumping is maximized off-peak, all other aqueduct generation is maximized on-peak.

In modeling DWR's future demand and supply, DWR is mindful that:

- Many factors that traditionally play a significant role in projections of load growth for electric utilities (customer demographics, econometric modeling, etc.) are of little direct use in forecasting DWR's energy requirement.
- As DWR's load is limited by aqueduct capacity, and as that capacity is not presently expected to increase significantly, the concept of "load growth" as applied by traditional electric utilities is not useful for DWR.
- The accuracy of supply forecasts is primarily limited by accuracy of forecast precipitation, while the accuracy of demand forecasts is primarily limited by the

accuracy of contractor supplied demand estimates. Both are outside DWR's direct control.