CALIFORNIA ISO

California Independent
System Operator

Memorandum

To: Market Issues/ADR Committee

From: Anjali Sheffrin, Director of Market Analysis

CC: ISO Governing Board, ISO Officers

Date: September 14, 1999

Re: ***Market Analysis Report***

Key Market Conditions for August 1999:

This memorandum summarizes key market conditions, developments, and trends for August. More detailed information is provided in the attached Weekly Market Reports.

In the California Energy Markets:

- System loads were unusually moderate for the first three weeks of August (August 1-22) with peak loads typically under 38,000 MW. Loads increased significantly during the fourth week of August (August 23-27) with peak loads exceeding 40,000 MW throughout the week and topping out to near 44,000 MW on August 25th. Peak energy prices during the month of August averaged $37.67/MWh for the PX Day-Ahead Unconstrained Market and approximately $43/MWh in the ISO real-time imbalance market. During the off-peak hours of the latter part of August, the real-time market was often split into northern and southern regions to mitigate south to north congestion on Path 15.

In the Ancillary Service Markets:

Day-ahead Ancillary Service Prices

- With system loads unusually moderate during the first few weeks of August, average day-ahead ancillary service prices were lower than the average prices for July. Both the rational buyer protocol and separate pricing for upward and downward regulation were implemented in the day-ahead market on August 17 for trading day August 18.

	Jul 1-31, 1999		**Aug 1-31, 1999**	
	Peak	**Off-Peak**	**Peak**	**Off-Peak**
Reg. Down	28.08	24.60	12.55	13.70
Reg. Up	28.08	24.60	18.95	10.03
Spin	12.58	0.55	10.14	0.96
Non-spin	12.11	0.09	4.78	0.10
Replacement	12.44	0.00	6.50	0.00

Ancillary Service Costs

- The average daily cost of ancillary services declined significantly in August, averaging approximately $1.3 million. This represents only 5% of the estimated overall energy cost for August. Lower daily costs are mainly attributable to generally more moderate loads in August, the introduction of separate prices for upward and downward regulation, and the implementation of Rational Buyer.

  The preliminary analysis of Rational Buyer results indicates an average savings of 24% in the first two weeks of implementation, amounting to a cost reduction of $390,000 per day when compared to the cost that would have resulted from sequential processing without the Rational Buyer pre-processor.

  During the same period, the implementation of separate pricing of Upward and Downward Regulation resulted in savings of about $290,000 per day.

Month	Avg. Daily Cost* ($ million)	% of Energy Costs*
June	1.442	9%
July	1.801	8%
August	1.289	5%

*** Includes day-ahead and hour-ahead procurement costs**

**** Energy cost = actual hourly loads multiplied by the PX Day-ahead Unconstrained MCP.**

In the Congestion Management Markets:

- August congestion patterns on the northwest paths were generally higher than levels experienced in July. Day-ahead congestion occurred on COI in 57% of peak hours and 46% of off-peak hours. Higher congestion levels on COI are primarily attributed to several days (August 27-29) where COI was derated to approximately 2,000 MW. Day-ahead congestion occurred on NOB in 35% of peak hours and 16% of off-peak hours. August congestion patterns on the southwest paths were similar to July levels. There was very little congestion during peak hours on the Eldorado branch group; however, congestion occurred in about 42% of off-peak hours. Off-peak prices on Eldorado ranged from $.01/MW to $16.44/MW and averaged $4.64/MW. Path 15 experienced significant congestion during peak hours (north to south) and off-peak hours (south to north) with congestion occurring in 19% of peak hours and 47% of off-peak hours. Day-ahead prices on Path 15 ranged from $.01/MW to $76.10/MW and averaged $7.51/MW.

Issues under Investigation:

- **Possible Data Release Schedule.** At its July 9 meeting, the Market Surveillance Committee recommended that the ISO should release aggregate bid data as soon as practicable, and release all bid and schedule data (including the identity of the bidders) with a three-month time lag. A vote by the ISO Board and a FERC tariff change are required to implement this recommendation. The DMA staff has developed detailed specifications for the public release of bid data from the ISO markets. Some conceptual proposals addressing the content and implementation of this data release were presented at the September MIF meeting, and will be developed in more detail as Management reviews the policy options. The Board is scheduled to consider this topic at its October meeting and, if the Board adopts a policy at that time, the ISO would file any necessary Tariff language in December, for implementation during the first quarter of 2000.

- **Defining the Criteria and Attributes of Workable Competition.** DMA is developing a general procedure for assessing market power in ISO markets. The procedure may be used to analyze the existence of workable competition in the context of new zone creation, and New Generation Connection policy. The procedure's systematic steps define the boundary of relevant geographic markets, screen geographic boundaries based on expected or historical congestion frequency, compute the Residual Supply Index (RSI) profile for the selected markets/boundaries (*i.e.,* the minimum supplier RSI for each hour) over a designated time interval (*e.g.,* a year), and determine the frequency of RSI falling below a designated threshold (*e.g.,* 100%). If the result indicates that the RSI is above the designated threshold for a substantial period of the year (*e.g.,* more than 99.5% of the time) sufficiently workable competition is assumed for the specific geographic market/boundary. Otherwise, further detailed study in the relevant market/boundary is to be carried out including tracking of bid markup.

- **Market Power Mitigation for Divestiture of PG&E Hydro Resources.** In July, the state legislature asked the DMA to analyze alternative divestiture options for the PG&E hydro facilities from the perspective of mitigating market power. The DMA evaluated the following divestiture options:

  – ***Base Line option***: Divestiture to one unregulated entity who does not operate any thermal generation in the California energy market. Mitigation measures will apply only to the hydro assets.

  – ***Increased Market Power Scenario***: Divestiture of all or a major portion of the hydro assets to an entity that also operates thermal generation units in the California energy market. Mitigation measures would need to be extended to the owner's entire portfolio.

  – ***Medium Market Power Scenario***: New owner owns more than 50% of PG&E Hydro assets, but its combined generation assets (hydro and thermal) is less than the original PG&E hydro capacity (5000 MW). This represents less of a market power concern than the previous two scenarios, but still requires market power mitigation.

  – ***Low Market Power Scenario***: Each new owner holds less than 20% of the PG&E hydro portfolio (1000 MW) with no or a small amount of other generation such that the combined capacity owned by each new owner is less than 20% 0f the total generation capacity in NP15. The new hydro owners will have limited market power.

  Based on the DMA's analysis, potential market power risks from different divestiture options for PG&E hydro portfolio can be mitigated. The Low Market Power divestiture scenario is the preferred option, and the Increased Market Power scenario is the least desirable option. In each case, however, it will be necessary to have the flexibility to design measures to mitigate the specific risks that could emerge. It is important that legislation not attempt to prescribe one specific remedy in advance.

- **Market Redesign 2000 Market Efficiency and Market Power Issues.** The DMA is actively participating in the ISO's MR 2000 Team, including two sub-teams devoted Managing Large Uninstructed Deviations and Portfolio Bidding of Energy. The Team started with a list of 12 proposed market redesign elements, to which about 20 more were added by the Stakeholders at the September 2 Market Redesign meeting. The DMA proposed a number of criteria to evaluate the market impact of the MR2000 proposals. The criteria proposed include reduction of market power and gaming potential, increased market efficiency, reduction of barriers to entry, increased supply or depth of market, reduced cost to end-use consumers, and avoidance of unintended impacts on other markets. The DMA will collaborate with the MR 2000 team to identify potential unintended or undesirable impacts, recommend improvements where appropriate, and help establish priorities for implementation.