

Exhibit No. ISO 2(6)

July 9, 1998

**STEERING COMMITTEE MEETING**



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## GMC UBUNDLING STUDY

Lake Natoma Inn  
July 9, 1998

### Agenda

- 1) Background for Unbundling Study – Why are we doing this?
- 2) Discussion of ISO Functionalization Rationale and analysis performed.
- 3) Review of Functionalization Matrix
- 4) Transaction Record “Tutorial” – What is it? How is it impacted by schedules? How will it change with more SCs and PX Hour-Ahead Market.
- 5) Revenue Certainty Provisions- Impact on clients.
- 6) Discussion on CONG {Congestion Management} and Existing Contracts.
- 7) Open Discussion

July 23 BOARD  
Report to BOARD

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# CALIFORNIA ISO

## GMC UNBUNDLING

July 9, 1998

### Sign-In Sheet

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CAISO

FUNCTIONAL OVERVIEW

by

R.J. Rudden Associates

July 9, 1998

STATE #3

# CAISO

## Functional Overview

### A. Staffing by Departments

1. Executive Offices (Staff of 2)
2. Operations (Staff of 142)
  - a. Planning
  - b. Operations Engineering
  - c. Power Management Systems/Scheduling Infrastructure/Scheduling Applications
3. Customer Service (Staff of 56)
  - a. Business Systems
  - b. Client Relations
4. Finance and Administration (Staff of 14)
  - a. Controller
  - b. Treasury
  - c. Internal Audits
  - d. Financial Planning
5. Human Resources (Staff of 12)
  - a. Recruiting
  - b. Training
  - c. Office Management
6. Computing and Communications (Staff of 36)
  - a. Systems Integration
  - b. Computing Infrastructure
  - c. Telecommunications
7. Legal and Regulatory ( Staff of 11)
  - a. Regulatory Affairs
  - b. Market Surveillance
  - c. Communications

Total Budgeted Staff

273

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## B. Department Responsibilities

### 1. Operations Department - Main Operations of the ISO (61% of Non O/H Personnel):

- |  |     |
|--|-----|
| a. Real Time Dispatching                               | 40% |
| b. PMS (EMS)<br>SI and SA - Scheduling and Cong. Mgt.) | 32% |
| c. Planning - System Upgrades/Expansion                | 28% |

### 2. Customer Services Department - Implementing Settlements and Billing for All Administrative Charges and Market Transactions (24% of Non O/H Personnel):

- a. Customer Credit Issues.
- b. Meter Data Collection and Analysis.
- c. Client Relations.
- d. Organize and Implement SC Training.

### 3. Finance and Administration Department - (Overhead Function)

- a. Financial Planning.
- b. Banking - ISO Operating Funds v. Market Transaction Funds.
- c. Maintain Fiscal Records and Prepare Financial Statements.
- d. Payroll, Other Compensation, Accounts Receivable and Payable.

### 4. Human Resources - (Overhead Function)

### 5. Computing and Communications Department - (15% of Non-Overhead Personnel):

- a. System Integration.
- b. Computing Infrastructure.
- c. Communications.

### 6. Legal and Regulatory (Overhead Function)



SLIDE #3

## CAISO Budget Costs

### I. Start-up and Development Costs.

a. Establish a Complete Transmission Control Center to Safely and Reliably Operate the Grid Under its Control:

1. Equipment
2. Staff

b. Cost Incurred Prior to March 31, 1998 Start of Operations:

1. Equipment Purchases - PMS (EMS) SI, SA and BBS.
2. Trust Administration
3. Expenses
4. Consultants
5. Legal Fees
6. Salaries
7. Facility Construction

### II. Ongoing Operating Costs

1. Salaries and Benefits - 33% of Total Ongoing Costs.
2. Third-Party Vendor Contracts - Primarily Computer and Communications - 45% of Ongoing Costs.
3. Building Lease & Facilities Cost - 2% of Total Ongoing Costs.
4. Technical Consulting Services - 5% of Total Ongoing Costs.
5. Legal and Regulatory Consulting Services - 5% of Total Ongoing Costs.
6. Employee Training, Travel and Professional Dues - 3% of Total Ongoing Costs.
7. Other Costs and Contingency - 7% of Total Ongoing Costs.

SLIDE #4

CAISO

Primary Third Party Vendor Contracts

I.	MCI Communications and Services Contract	\$28,500,000
II.	IBM Computer Services Contract	\$9,535,000
III.	UTS Meter Data Acquisition Contract	\$1,536,000
IV.	Alliance Service Contract	\$1,271,000
	Total Cost of These Service Contracts	\$48,842,000
	Percent of Annual Operating Cost Budget	45%

SLTD: 25

## MCI Communications and Services Contract

### The Communications Infrastructure Includes:

a. State-Wide Network for Voice and Data Communications that allow the ISO to:

1. Communicate with Market Participants.
2. Control and Monitor the Power Grid.
3. Transport Meter Data and ISO Operating to Folsom and Alhambra.

b. Customer Services Includes a Wide Area Network:

1. Data communications between ISO and 2,000 connected entities over defined facilities with redundant capacity
2. Local area networks at the two ISO sites.
3. Connection to 8 area control centers.
4. Security Services.

c. Customer Services Includes Voice Communications Network:

1. Between ISO and the PX, Area Control Centers.
2. Tariff Telephone Services.
3. Premise Equipment including:
  - i. PBX
  - ii. Voice Mail
  - iii. Multiple Line Communications Consoles
  - iv. Paging Systems.
  - v. Dial-up Emergency Satellite Systems.

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## IBM Computing and Services Contract

1. The ISO Does Not Own Any of the Computers Supplied by IBM.
  
2. Under the Contract with the ISO, IBM will Own, Service and Maintain All Computers and Office Equipment.
  
3. The Primary Areas of Services Provided by the IBM Contract are:
  - a. Cost Center/ Help Desk for the ISO Communications Facilites.
  
  - b. Office Automation Services - Provides ISO Staff with Desktop and Laptop Computes as well as E-Mail, Directory Systems, Printers, Copiers and Fax Machines.

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## UTS Meter Data Acquisition Contract

**1. MDAS Allows the ISO to Collect Metering Data From All Generators and Others Connected to:**

- a. Transmission Lines.
- b. Tie Points.
- c. Zonal Interface Point (future goal).

**2. UTS Services Will Support the Following ISO Activities:**

- a. Metering Standards.
- b. Data Servers.
- c. Interface Equipment
- d. Data Base and Software Development.

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## Alliance Maintenance Contract

### I. Includes the Support for the Scheduling Infrastructure (SI) and Applications (SA):

- a. Hardware, Software and Data Bases Which Allow the ISO to Collect, Validate, Store, Transfer, Archive and Audit the Energy and Ancillary Services Schedules Submitted by the PX and SCs and Accepted by the ISO.
- b. Supports the Scheduling Applications (SA) System Which Allows the ISO to Assess the State of the Transmission System, Evaluate Preferred Schedules Submitted by SCs and to Establish the Committed Operating Schedule.
- c. Supports the Congestion and Transmission Management Software Which Includes the Determination of the Transmission Price Associated With the Use of Congested Inter-Zonal Transmission Paths.

### II. Includes Support for the Balance of Business Systems (BBS):

- a. Settlements for Payments Owed to the ISO From SCs and to SCs from the ISO for:
  1. Energy Imbalances.
  2. Ancillary Services.
  3. Market Based Congestion Management.
- b. Billings and Credit to Support Accounting Systems, Invoices, Payments and Collections.
- c. Administration Services to Provide General Accounting and Daily Administration of the ISO.

SLIDE # 9

## CAISO

1998 Cost of Service  
by  
FERC ACCOUNT

<u>FERC ACCT</u>	<u>ACCOUNT DESCRIPTION</u>	<u>AMOUNT</u>	<u>% of Total</u>
560,561,566	Grid Operations -		
	1. Operations	\$34,640,000	
	2. Maintenance	<u>2,421,000</u>	
	Total	\$37,061,000	34%
901-905	Customer Account Expense	\$7,960,000	
907-913	Customer Services	<u>2,502,000</u>	
		\$10,462,000	10%
920 to 931	Admin and General Expenses	\$60,757,000	
	Maintenance of General Plant	<u>1,000,000</u>	
		\$61,757,000	57%
	Total Operating Costs	\$109,280,000	100%
	Debt Service	<u>\$43,450,000</u>	
	Total Annual Cost of Service	\$152,730,000	
	Forecasted Metered Volumes Transmitted On or Through the Grid.	208,000,000 MWh	
	Grid Management Charge	\$0.7343 /MWh	

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SUMMARY

## CAISO

## Start-Up and Development Costs

A. Infrastructure

1. Power Management System	\$14,166,000
2. SI/SA/BBS	64,175,000
3. Staged SI/SA/BBS	18,000,000
4. Communications Infrastructure	31,201,000
5. MDAS	5,659,000
6. Computing Management	7,663,000
7. Primary and Back-Up Centers	14,416,000
8. User Groups	1,220,000
9. ACC Upgrades	1,500,000
10. Project Management	21,442,000
11. Start-Up Costs - Operating Expenses	44,381,000
12. Working Capital	31,829,000
13. Trust Admin., Capitalized Interest, Contingency	<u>21,024,000</u>
 Total Infrastructure and Start-Up Cost	 <u>\$301,397,000</u>



# Functional Diagram of the ISO System

