



**GMC Unbundling Steering Committee
Meeting Agenda
June 13, 2000
10:00 a.m. – 2:00 p.m. in 101A-1a & 1b**

- | | |
|-------------------------|-------------------------------------------------------------------------------------|
| 10:00 a.m. – 11:00 a.m. | Gross vs. Net and Other Issues
Roger Smith |
| 11:00 a.m. – 12:00 p.m. | Review of Billing Determinants
Congestion & Market
Mike Epstein & Mike Turner |
| 12:00 p.m. – 12:30 p.m. | Lunch |
| 12:30 p.m. – 1:00 p.m. | Review of Buckets
Phil Leiber & Mike Epstein |
| 1:00 p.m. – 1:30 p.m. | Next Meeting |

Open discussions of any additional comments are welcome

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**GMC Unbundling Steering
Committee Meeting
June 13, 2000
10:00 a.m. – 2:00 p.m. in 101A-1a**

Sign-in Sheet

Charlotte Martin	CAISO
Bent Hansen	SCE
Romulo Barenno	CalPX
Larry Lau	CalPX
RAY BLIVEN	CAC/EPUC (pres)
Carolyn Kehrein (2)	Board
Phil Jordan & Julia Moon - Smidler	
Michelle Wynne	
Cheryl Beach	RT - Kudder
Roger Smith	CAISO
Jerry Green - <small>Angreen@wiscron.com</small>	CDWR Fax (916) 653-9378 (916) 654-8359
Allen Yoho	CAISO
Bill Regan	CAISO
Spence Garber	CAISO
Deanne Nelson	CAISO
Mike Epstein	CAISO
Phil Leiber	CAISO
Mike Turner	CAISO
Ed Lucero	Sempra

* 6 min

Call-in

Ated

GMC UNBOUNDUNG STEERING COMMITTEE

JUNE 13, 2000

• AGENDA

10:00 GROSS VS. NET
and other issues

• Roger Smith

11:00 REVIEW OF BILLING DETERMINANTS,
Competition & Market

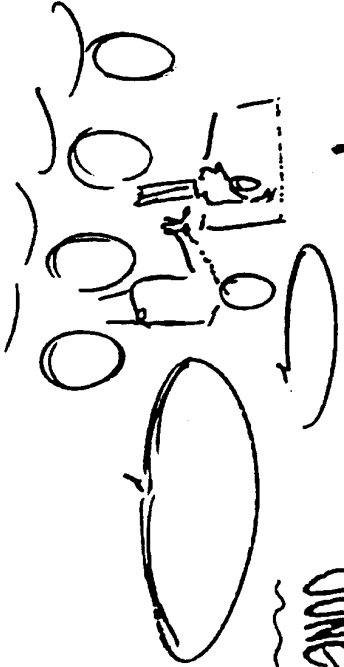
• Mike Epstein & Mike Turner

12:00 LUNCH

1:30 REVIEW OF BUCKETS

• Phil Leiber & Mike Epstein

1:00 NEXT MEETING



INTRODUCTION - GROSS vs NET & ...



Write Paper
not yet ready - Applies

Can you show EXAMPLES of how the budget will work?

Yes.

Of load issue - extend to which initial metering (time delay) - how the ISO will meterize data during clearance

We can discuss - if it becomes difficult we'll have to estimate (will need to be resolved)

Increase any power in gross loads?

What part of meter's gross load could be billed?
Meter - needs to be consistently applied

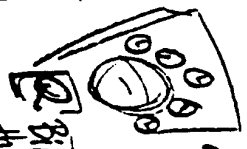
Control Area Services billed to all load in a the Control Area.

Gross load approved as billing determinant.

Post-market billed on transmission clearance... Why is one exempted & not the other?

No basis for distinction betw. new & existing ops

It's an outstanding issue
FERC wants us to make sure it's consistently applied



Billing on gross load - recovering the cost of metering - Issue - cost recovery of meters

I'm told you can't get in to the info
I'm told you don't have ability to measure load behind meter

In addition to meter - what kind of communication line?

We want to be flexible in how we implement

What authority would we get if a meter DOES need to be installed?

We won't require every instance to have 180 metering (exceptions)

How big is THE PROBLEM?

How many smart meters to be able to calculate

We'd need to install another meter

CALCULATION - meter at generator, meter at net point, might not be revenue quality

Independent power producer - his load locked at 230?

Yes!

Bring up issues at this Board mtg. (or in Sept.)

What precedent would gross load set (e.g. railway...)?

Think gross load is consistent w/ tariff - don't anticipate ripple effect.

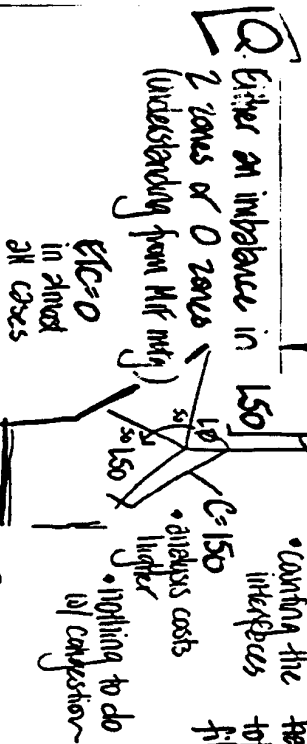
Would it additional meters help the situation?

Yes

cal310

BILLING DETERMINANTS

Concession additive across zones



Will ETC change if # of zones increases?

Yes - rates will increase after filed bills

Standard ~~estimated~~ costs would vary to control price change.

Non ETC joins - into new-use bucket?

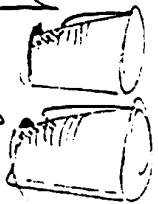
Same costs? Based on implementation of concession reform - gas subject to review every year

All infrastructure allocated to it's bucket

Over & shorts carried up annually - offset against next year (GNC - Same @ bucket level)

REVENUE STABILITY

- Need to cover our costs -
- We believe it's are predictable & revenues will be stable



buckets
fewer segments?

Yes

There are times when there is no competition at all - affect rates? No - it's an analysis change

Q. New zones - competitive & non-competitive zones - = Any analysis or a tanks? Yes. Competition Reform - No not considering this impact.

Q. If ETCs join & Concession is gone - who will pay this bucket? Still need to pay off 7% of CONG.

Q. If we do model instead of zones? Will have to develop another determinant

Call it a transition fee, not concession change

Q. On final schedule? Yes. in HA

Q. What drives the increase?

Only reflects deficiency in billing determinant volume - at budget level

Deviations of < 5% - will change rate in next (quarter) quarter

Well also establish a LINE of GOVT

decision

BILINGUAL DETERMINANTS

Zone transaction fee
unit work...

Names:
 • Congestion analysis fee (New)
 • Intra-zonal scheduling fee (New)
 • Interzonal transaction fee

- Cong. Mgmt. fee 4
- Zonal transaction fee
- Interzonal transaction fee

With more zones,
you might have parallel
zones & would need to
revisit...

MARKET OPS

REC bids too?
- If accepted

Self-protecting SCs
changes?

- Not a settlement -
provided in the clearing

Cont.

Submit seeds -

20L
 20G
 40L
 40G
 after 10 min.

More would show
 (non-decisions)

Should bill on
 per unit.
 Need to bid or
 on a zonal basis
 (not if you self provide)

Is there a
 opening oppy?

Shouldn't be
 penalized when you
 can meet your own load
 - Difficult from
 ancillary services?

10 min. settlements.

leave as an
 open issue -
 more always
 preferred than
 present will be
 picked up as a unit.

Build your
 own
 GNC

Our model isn't exact -
 still working on the
 details

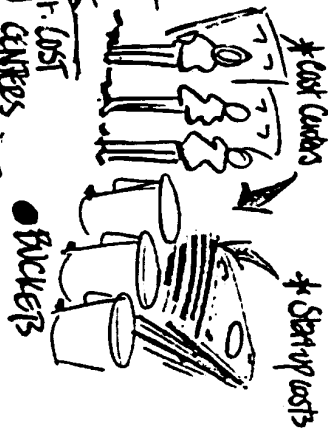
Generator's charges for...

Essentially all of the
 charge types

REVIEW OF BUDGETS

Amendment
16
April 99

• Total operating budget -
→ defined 3 (5) buckets -
gather each dept. mgr. last
about how their losses
would be allocated.



→ Also added in START-UP/TEAM
INFRASTRUCTURE COSTS

Waterfall broken down systematically
in the past -

we allocated by ALLESTRAKES

• How \$s were hand
allocated in a
HEAD COUNT basis

• Users' perceptions -
as per original contract
too early?

Will go over
details with you
if you're interested

Will continue to
work on this as we
develop the budget

NEXT STEPS

• Another meeting?
→ Probably early Aug /
late July.

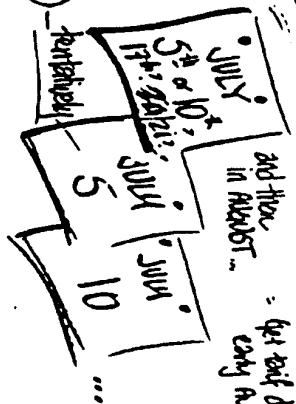
• Implementation issues
(eg. of ... the buckets...)
need to know what
you're planning

• Com. mgmt. results?

June 30 - paper out
July 21 - bread w/ty.

• GIVE MEY get accelerated
doctor & done in half. THE

??



• meeting discussion - Board can still
• foster ALSO thinking in Sept
we're at... \$...

If consensus gets
put in limbo?

• Will change based
on their changes
or uncertainties

• Include examples
in Board mtg?

No - it's already done -
can include new
have on slides

1/13/00

4

CAISO Proposed Billing Determinants and Current Charge Types

CONTROL AREA SERVICES (including Scheduling)

- Gross Load with QFs - Control Area Metered Load & Exports in MWh including loads served by internal generation (behind the meter) for Munis and QFs. Total load and export volumes reported prior to any discounts.

CONGESTION

- Net scheduled load and generation by a SC on an Inter-Zonal basis - The net MWh flow by SC on each inter-zonal interface, excluding ETC's, taking into account each SC's Final Scheduled Load, Generation, Transfers and Inter-SC Trades by zone.

CONG, the ISO's Congestion Management Program, looks at each SC's Scheduled Generation, Load, Intertie Transfers and Inter-SC Trades on a zonal basis, along with each inter-zonal path's Mw rating to adjust Interface Transfer schedules in both the DA and HA Markets. Those SC's with FTR's must exercise their physical rights associated with the FTR in the DA Market or they lose scheduling priority in the HA market. When CONG runs, if adjustments must be made to Interface Transfer schedules, CONG does them based on the following ranking method: New Firm Use, Firm Transmission Rights, and Existing Contracts. For example, an interface with a rating of 1000 Mw's has 500 Mw's of ETC's, 300 Mw's of FTR's that were exercised in the DA market and 200 Mw's of NFU scheduled. If the path is derated to 800 Mw's, then the 200 Mw's of NFU is cut and the ETC's and FTR's are not touched. If the path is derated to 750 Mw's, then the additional 50 Mw's is cut from the FTR users. The proposed output table, SC_Branch_Group_Audit, to be used for the Unbundled GMC bucket contains the ETC and NFU MWh's and can be based on the Final Hour-Ahead Market data. Thus, SC's using ETC's can be exempted easily, while FTR and NFU users would not be exempted.

There is a potential situation when a SC brings in energy from the Northwest and delivers it to Southern California that they are charged for every path that is crossed. Although each zone is balanced, there is actually energy that flows over the interface and the SC_Branch_Group_Audit table picks it up. The billable quantity for the SC is the net flow of energy over each interface. From a cost-causation approach, if the Mw's are brought in from NW1 over COI, down over Path 15 and Path 26 into SP15, then those Mw's are considered by CONG when it runs. One thing to consider is what the possible outcomes from the Congestion Reform process are and what their impacts would be on our methodology.

MARKET OPERATIONS (including Billings and Settlements)

- A/S & Real Time traded volumes (purchases and sales) in MWh - This is the net sum of the Billable Quantity of a SC's Ancillary Services. Charges/Payments and their Real Time quantities. The Billable Quantity of the Ancillary Services Charges/Payments comes from the Charge Types 1, 2, 3, 4, 5, 6, 51, 52, 53, 54, 55, 56, 111, 112, 114, 115 and 116. The Billable Quantity of a SC's Real Time quantities were derived from Charge Types 301, 402, 403, 404 and 405. For both Billable Quantity amounts, the absolute value of the positive and negative billable quantities of the above Charge Types were added together to derive this Billing Determinant.

Charge Type Listing

Auxiliary Services

- 0001 Day-Ahead Spinning Reserve due SC
- 0002 Day-Ahead Non-Spinning Reserve due SC
- 0003 Day-Ahead AGC/Regulation due SC (discontinued)
- 0004 Day-Ahead Replacement Reserve due SC
- 0005 Day-Ahead Regulation Up due SC
- 0006 Day Ahead Regulation Down due SC

- 0051 Hour-Ahead Spinning Reserve due SC
- 0052 Hour-Ahead Non-Spinning Reserve due SC
- 0053 Hour-Ahead AGC/Regulation due SC (discontinued)
- 0054 Hour-Ahead Replacement Reserve due SC
- 0055 Hour Ahead Regulation Up due SC
- 0056 Hour Ahead Regulation Down due SC

- 0111 Spinning Reserve due ISO
- 0112 Non-spinning Reserve due ISO
- 0113 AGC/Regulation due ISO
- 0114 Replacement Reserve due ISO
- 0115 Regulation Up due ISO
- 0116 Regulation Down due ISO

Supplemental Energy

- 0301 Ex-Post A/S Energy due SC

Imbalance Energy

- 0402 Generation Deviation Settlement
- 0403 Load Deviation Settlement
- 0404 Export Deviation Settlement
- 0405 Import Deviation Settlement

- 0502 Effective Price Generation Deviation Settlement
- 0503 Effective Price Load Deviation Settlement
- 0504 Effective Price Export Deviation Settlement
- 0505 Effective Price Import Deviation Settlement

2000 Unbundling	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Operations	Congestion	Market Operations	Total	
Department Summary							
Operations	\$ 32,751	100%	68%	9%	23%	215.5	
Client Services	5,243	100%	23%	6%	71%	36.5	
IT	64,593	100%	48%	6%	46%	98.5	
Legal	12,362	100%	45%	5%	50%	33.5	
Finance	9,299	100%	21%	2%	77%	45.5	
HR	8,969	100%	51%	7%	42%	22.5	
Department Costs	133,217	100%	50%	6%	44%	452.0	
Expense Recovery	(2,004)	100%	73%	3%	24%	-	
Net Operating Costs	131,213	100%	50%	6%	44%	452.0	
Debt Service	48,070	100%	44%	8%	48%	-	
Revenue Requirement	\$ 179,283	100%	48%	7%	45%	452.0	
Operations Department							
Planning	\$ 2,055	100%	100%	0%	0%	15.0	1999 Direct allocation
Outage Coordination	1,383	100%	88%	12%	0%	11.0	1999 Direct allocation
Operations Engineering	2,543	100%	85%	3%	12%	17.0	1999 Direct allocation
Operations Scheduling	4,221	100%	82%	11%	7%	29.0	1999 Direct allocation
Grid Operations	6,462	100%	75%	5%	20%	49.0	1999 Direct allocation
Security Coordination	806	100%	100%	0%	0%	6.0	Collected from WSCC
Engineering & Maintenance	2,011	100%	86%	7%	7%	11.0	1999 Direct allocation
Market Operations	3,111	100%	20%	20%	60%	13.0	1999 Direct allocation
Manager of Markets	2,320	100%	20%	20%	60%	19.0	1999 Direct allocation
Application Development	1,304	100%	20%	20%	60%	12.0	1999 Direct allocation
Subtotal Direct Costs	26,216	100%	67%	10%	23%	182.0	
Training	424	100%	68%	9%	23%	3.0	Direct department headcount %
Training Management	3,929	100%	68%	9%	23%	25.0	Direct department headcount %
Operations R&D	981	100%	100%	0%	0%	4.0	Direct department headcount %
Subtotal Department Costs	31,550	100%	68%	9%	23%	214.0	
Operations General	1,201	100%	68%	9%	23%	1.5	Department cost %
Total Operations Department	\$ 32,751	100%	68%	9%	23%	215.5	
Client Services Department							
Contracts & Compliance	\$ 2,290	100%	35%	10%	55%	17.0	1999 Direct allocation
Client Relations	2,598	100%	13%	2%	85%	18.0	1999 Direct allocation
Subtotal Direct Costs	4,888	100%	23%	6%	71%	35.0	
Services General	355	100%		6%	71%	1.5	Direct Department cost %
Client Services Department	\$ 5,243	100%		6%	71%	36.5	

2000 Unbundling

	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Operations	Conges-tion	Market Operations	Total	
IT Department							
Application Services	\$ 4,721	100%	25%	5%	70%	20.0	1999 Functional use estimate
Computing Services	16,574	100%	33%	5%	62%	19.0	1999 Functional use estimate
Telecommunications - MO	33,341	100%	53%	7%	40%	12.0	1999 Separate allocation %s
EMS/SCADA	2,272	100%	100%	0%	0%	14.0	1999 Direct allocation
MDAS	2,033	100%	10%	0%	90%	15.0	1999 Direct allocation
Operating systems	250	100%	98%	2%	0%	2.0	1999 Direct allocation
GCP	2,446	100%	100%	0%	0%	5.0	2000 Functional use estimate
Subtotal Direct Costs	61,637	100%	48%	6%	46%	87.0	
Information Security	2,394	100%	48%	6%	46%	9.0	Direct Department cost %
IT General	562	100%	48%	6%	46%	2.5	Direct Department cost %
Total IT Department	\$ 64,593	100%	48%	6%	46%	98.5	
Legal Department							
Communications	\$ 605	100%	50%	6%	44%	3.0	Combined Direct Cost %
Legal	7,631	100%	50%	6%	44%	18.0	Combined Direct Cost %
Market Surveillance	2,453	100%	25%	0%	75%	9.0	1999 Direct allocation
Subtotal	10,689	100%	44%	5%	51%	30.0	
Board	1,130	100%	50%	6%	44%	2.0	Combined Direct Cost %
Subtotal Department Costs	11,819	100%	45%	5%	50%	32.0	
Legal General	543	100%	45%	5%	50%	1.5	Department cost %
Total Legal Department	\$ 12,362	100%	45%	5%	50%	33.5	
Finance Department							
Billing & Settlements	\$ 886	100%	3%	0%	97%	3.0	1999 Direct allocation
Application Support	1,122	100%	0%	0%	100%	6.0	1999 Direct allocation
Preliminary Settlement Statements	1,360	100%	0%	0%	100%	11.0	1999 Direct allocation
Final Settlement Statements	1,807	100%	0%	0%	100%	14.0	1999 Direct allocation
Subtotal Direct Costs	5,175	100%	1%	0%	99%	34.0	
Accounting	2,135	100%	50%	6%	44%	7.0	Combined Direct Cost %
Budget	1,449	100%	50%	6%	44%	3.0	Combined Direct Cost %
	8,759	100%	21%	2%	77%	44.0	
CFO - general	540	100%	21%	2%	77%	1.5	Department cost %
Total Finance Department	\$ 9,299	100%	21%	2%	77%	45.5	
Department							
CFO	\$ 3,653	100%	7%	7%	42%	10.5	Total headcount %

	Dollars		Per Cent (%)			Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Operations	Conges-tion	Market Operations	Total	
Administrative Services	1,661	100%	51%	7%	42%	9.0	Total headcount %
Facilities	3,655	100%	51%	7%	42%	3.0	Total headcount %
Total HR Department	<u>\$ 8,969</u>	<u>100%</u>	<u>51%</u>	<u>7%</u>	<u>42%</u>	<u>22.5</u>	
Expense Recovery							
Interest	\$ (1,100)	100%	50%	6%	44%		Combined Direct Cost %
WSCC security coordinator fees	(904)	100%	100%	0%	0%		Collected from WSCC
Total expense recovery	<u>\$ (2,004)</u>	<u>100%</u>	<u>73%</u>	<u>3%</u>	<u>24%</u>		Combined Direct Cost %
Capital							
<u>Infrastructure Costs</u>							
EMS	\$ 11,383	100%	100%	0%	0%		1999 Direct allocation
St,SA,BBS	53,263	100%	28%	10%	62%		1999 Direct allocation
BBS - Accounting	2,992	100%	50%	6%	44%		Combined Direct Cost %
MCI	27,447	100%	53%	7%	40%		Department expense %
MDAS	5,541	100%	10%	0%	90%		Department expense %
IBM	7,329	100%	33%	5%	62%		Department expense %
Facilities	14,442	100%	50%	6%	44%		Combined Direct Cost %
User Groups	977	100%	50%	6%	44%		Combined Direct Cost %
Area Control Center Upgrades	1,367	100%	100%	0%	0%		1999 Direct allocation
Subtotal Infrastructure	<u>124,741</u>	<u>100%</u>	<u>44%</u>	<u>7%</u>	<u>49%</u>		
Project Management	23,241	100%	44%	7%	49%		Infrastructure cost %
Phase II Capital	52,243	100%	36%	13%	51%		1999 Direct allocation
1998 Capital Expenditures	8,208	100%	50%	6%	44%		Combined Direct Cost %
1999 Capital Expenditures	9,456	100%	50%	6%	44%		Combined Direct Cost %
Total Infrastructure Costs	<u>217,889</u>	<u>100%</u>	<u>42%</u>	<u>8%</u>	<u>50%</u>		
<u>Start-up Costs</u>							
Start-up Costs	47,888	100%	50%	6%	44%		Combined Direct Cost %
Working Capital	21,692	100%	50%	6%	44%		Combined Direct Cost %
Trust Administration	5,743	100%	44%	7%	49%		Infrastructure cost %
Capitalized Interest	2,713	100%	50%	6%	44%		Combined Direct Cost %
Interest & Other	5,475	100%	44%	7%	49%		Infrastructure cost %
Total Start-up Costs	<u>83,511</u>	<u>100%</u>	<u>49%</u>	<u>6%</u>	<u>45%</u>		
Total Capital	<u>\$ 301,400</u>	<u>100%</u>	<u>44%</u>	<u>8%</u>	<u>48%</u>		
Service % of Capital	<u>\$ 48,070</u>	<u>100%</u>	<u>8%</u>	<u>48%</u>			Total Capital %

1999 Unbundling

	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Ops	Congestion	Market Ops	Total	
Department Summary							
Operations	\$ 23,046	100%	68%	9%	23%	147.5	
Client Services	11,056	100%	9%	2%	89%	60.5	
IT	57,092	100%	50%	6%	44%	50.5	
Legal	10,537	100%	42%	7%	51%	22.5	
Finance	3,748	100%	48%	6%	46%	11.5	
HR	7,583	100%	50%	7%	43%	15.5	
Subtotal O&M costs	113,062	100%	49%	6%	45%	308.0	
Expense Recovery	(3,148)	100%	94%	1%	5%	-	
Total Operating Costs	109,914	100%	48%	6%	46%	308.0	
Debt Service	48,820	100%	43%	8%	49%	-	
Revenue Requirement	\$ 158,734	100%	46%	7%	47%	308.0	
Operations Department							
Planning	\$ 1,214	100%	100%	0%	0%	8.0	Direct allocation
Market Operations	1,778	100%	20%	20%	60%	5.0	Direct allocation
Manager Markets	1,601	100%	20%	20%	60%	14.0	Direct allocation
Application Develop	828	100%	20%	20%	60%	7.0	Direct allocation
Outage Coordination	1,099	100%	88%	12%	0%	8.0	Direct allocation
Operations Engineering	1,860	100%	85%	3%	12%	13.0	Direct allocation
Engineering & Maintenance	426	100%	86%	7%	7%	3.0	Direct allocation
Operations Scheduling	3,384	100%	82%	11%	7%	26.0	Direct allocation
Grid Operations	5,731	100%	75%	5%	20%	42.0	Direct allocation
Security Coordination	688	100%	100%	0%	0%	5.0	Collected from WSCC
Subtotal Direct Costs	18,609	100%	68%	9%	23%	131.0	
Operations Engineering General	2,113	100%	67%	10%	23%	1.0	Direct department cost %
Training	669	100%	69%	9%	22%	5.0	Direct department headcount %
Training Management	1,196	100%	69%	9%	22%	9.0	Direct department headcount %
Principle Engineer	-	0%	0%	0%	0%	-	
Subtotal	22,587	100%	68%	9%	23%	146.0	
Operations General	459	100%	67%	10%	23%	1.5	Department cost %
Total Operations Department	\$ 23,046	100%	68%	9%	23%	147.5	

1999 Unbundling

	Dollars	Per Cent (%)				Employees	
	Total (\$ 000)	Total	Control Area Ops	Congestion	Market Ops	Total	Allocation Method
Client Services Department							
Billing & Settlements	\$ 990	100%	3%	0%	97%	4.0	Direct allocation
Application Support	1,009	100%	0%	0%	100%	5.0	Direct allocation
Metering	1,822	100%	10%	0%	90%	14.0	Direct allocation
Preliminary Settlement Statements	1,414	100%	0%	0%	100%	6.0	Direct allocation
Final Settlement Statements	1,412	100%	0%	0%	100%	7.0	Direct allocation
Contracts & Compliance	1,238	100%	35%	10%	55%	6.0	Direct allocation
Client Relations	2,841	100%	13%	2%	85%	17.0	Direct allocation
Subtotal Direct Costs	10,726	100%	9%	2%	89%	59.0	
Client Services General	330	100%	9%	2%	89%	1.5	Direct Department cost %
Total Client Services Department	\$ 11,056	100%	9%	2%	89%	60.5	
IT Department							
Application Services	\$ 4,425	100%	25%	5%	70%	12.0	Functional use estimate
Computing Services	12,618	100%	33%	5%	62%	8.0	Functional use estimate
Telecommunications - MCI	32,952	100%	53%	7%	40%	10.5	Separate allocation
Phase II GCP charges	2,160	100%	100%	0%	0%	-	Offset against exp recoveries
System Support	2,994	100%	98%	2%	0%	13.0	Direct allocation
Subtotal Direct Costs	55,149	100%	50%	6%	44%	43.5	
Information Security	1,225	100%	48%	6%	46%	5.5	Direct Department cost %
IT General	718	100%	48%	6%	46%	1.5	Direct Department cost %
Total IT Department	\$ 57,092	100%	50%	6%	44%	50.5	
Legal Department							
Market Surveillance	\$ 1,788	100%	15%	10%	75%	8.0	Direct allocation
Communications	590	100%	48%	6%	46%	3.0	Combined Direct Cost %
Legal	5,355	100%	48%	6%	46%	9.0	Combined Direct Cost %
Subtotal	7,733	100%	40%	7%	53%	20.0	
Board	823	100%	48%	6%	46%	1.0	Combined Direct Cost %
FERC Fees	1,500	100%	48%	6%	46%	-	Combined Direct Cost %
Legal General	481	100%	40%	7%	53%	1.5	Department cost %
Total Legal Department	\$ 10,537	100%	42%	7%	51%	22.5	
Finance Department:	\$ 3,748	100%	48%	6%	46%	11.5	Combined Direct Cost %
HR Department							
HR/CEO	\$ 2,660	100%	50%	7%	43%	7.5	Total headcount %
Administrative Services	1,559	100%	50%	7%	43%	5.0	Total headcount %
Facilities	3,364	100%	50%	7%	43%	3.0	Total headcount %

1999 Unbundling

	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Ops	Conges- tion	Market Ops	Total	
Total HR Department	\$ 7,583	100%	50%	7%	43%	15.5	

1999 Unbundling

	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Ops	Congestion	Market Ops	Total	
Expense Recovery							
Interest & MCI charges	\$ (300)	100%	48%	6%	46%		Combined Direct Cost %
Phase II GCP charges	(2,160)	100%	100%	0%	0%		
WSCC security Fees	(688)	100%	100%	0%	0%		
Total Expense Recovery	\$ (3,148)	100%	95%	1%	4%		Combined Direct Cost %
Capital							
<u>Infrastructure Costs</u>							
EMS	\$ 11,383	100%	100%	0%	0%		Direct allocation
SI,SA,BBS	53,263	100%	28%	10%	62%		Direct allocation
BBS - Accounting	2,992	100%	48%	6%	46%		Combined Direct Cost %
MCI	27,447	100%	53%	7%	40%		Department expense %
MDAS	5,541	100%	10%	0%	90%		Department expense %
IBM	7,329	100%	33%	5%	62%		Department expense %
Facilities	14,442	100%	48%	6%	46%		Combined Direct Cost %
User Groups	977	100%	48%	6%	46%		Combined Direct Cost %
Area Control Center Upgrades	1,367	100%	100%	0%	0%		Direct allocation
Subtotal Infrastructure	124,741	100%	43%	7%	50%		
Project Management	23,241	100%	44%	7%	49%		Infrastructure cost %
Phase II Capital	52,243	100%	36%	13%	51%		Direct allocation
1998 Capital Expenditures	8,208	100%	48%	6%	46%		Combined Direct Cost %
1999 Capital Expenditures	9,456	100%	48%	6%	46%		Combined Direct Cost %
Total Infrastructure Costs	217,889	100%	42%	8%	50%		
<u>Start-up Costs</u>							
Start-up Costs	47,888	100%	47%	6%	47%		Combined Direct Cost %
Working Capital	21,692	100%	47%	6%	47%		Combined Direct Cost %
Trust Administration	5,743	100%	43%	7%	50%		Infrastructure cost %
Capitalized Interest	2,713	100%	47%	6%	47%		Combined Direct Cost %
Interest & Other	5,475	100%	43%	7%	50%		Infrastructure cost %
Total Start-up Costs	83,511	100%	46%	6%	48%		
Total Capital	\$301,400	100%	43%	8%	49%		
Debt Service % of Capital	\$ 48,820	100%	47%	8%	49%		

2000 Unbundling	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Operations	Congestion	Market Operations	Total	
Department Summary							
Operations	\$ 32,751	100%	68%	9%	23%	215.5	
Client Services	5,243	100%	23%	6%	71%	36.5	
IT	64,593	100%	48%	6%	46%	98.5	
Legal	12,362	100%	45%	5%	50%	33.5	
Finance	9,299	100%	21%	2%	77%	45.5	
HR	8,969	100%	51%	7%	42%	22.5	
Department Costs	133,217	100%	50%	6%	44%	452.0	
Expense Recovery	(2,004)	100%	73%	3%	24%	-	
Net Operating Costs	131,213	100%	50%	6%	44%	452.0	
Debt Service	48,070	100%	44%	8%	48%	-	
Revenue Requirement	\$ 179,283	100%	48%	7%	45%	452.0	
Operations Department							
Planning	\$ 2,055	100%	100%	0%	0%	15.0	1999 Direct allocation
Outage Coordination	1,383	100%	88%	12%	0%	11.0	1999 Direct allocation
Operations Engineering	2,543	100%	85%	3%	12%	17.0	1999 Direct allocation
Operations Scheduling	4,221	100%	82%	11%	7%	29.0	1999 Direct allocation
Grid Operations	6,462	100%	75%	5%	20%	49.0	1999 Direct allocation
Security Coordination	806	100%	100%	0%	0%	6.0	Collected from WSCC
Engineering & Maintenance	2,011	100%	86%	7%	7%	11.0	1999 Direct allocation
Market Operations	3,111	100%	20%	20%	60%	13.0	1999 Direct allocation
Manager of Markets	2,320	100%	20%	20%	60%	19.0	1999 Direct allocation
Application Development	1,304	100%	20%	20%	60%	12.0	1999 Direct allocation
Subtotal Direct Costs	26,216	100%	67%	10%	23%	182.0	
Training	424	100%	68%	9%	23%	3.0	Direct department headcount %
Training Management	3,929	100%	68%	9%	23%	25.0	Direct department headcount %
Operations R&D	981	100%	100%	0%	0%	4.0	Direct department headcount %
Subtotal Department Costs	31,550	100%	68%	9%	23%	214.0	
Operations General	1,201	100%	68%	9%	23%	1.5	Department cost %
Total Operations Department	\$ 32,751	100%	68%	9%	23%	215.5	
Client Services Department							
Contracts & Compliance	\$ 2,290	100%	35%	10%	55%	17.0	1999 Direct allocation
Client Relations	2,598	100%	13%	2%	85%	18.0	1999 Direct allocation
Subtotal Direct Costs	4,888	100%	23%	6%	71%	35.0	
Client Services General	355	100%		6%	71%	1.5	Direct Department cost %
Total Client Services Department	\$ 5,243	100%		6%	71%	36.5	

2000 Unbundling	Dollars	Per Cent (%)			Employees	Allocation Method	
	Total (\$ 000)	Total	Control Area Operations	Congestion	Market Operations		Total
IT Department							
Application Services	\$ 4,721	100%	25%	5%	70%	20.0	1999 Functional use estimate
Computing Services	16,574	100%	33%	5%	62%	19.0	1999 Functional use estimate
Telecommunications - MCI	33,341	100%	53%	7%	40%	12.0	1999 Separate allocation %s
EMS/SCADA	2,272	100%	100%	0%	0%	14.0	1999 Direct allocation
MDAS	2,033	100%	10%	0%	90%	15.0	1999 Direct allocation
Operating systems	250	100%	98%	2%	0%	2.0	1999 Direct allocation
GCP	2,446	100%	100%	0%	0%	5.0	2000 Functional use estimate
Subtotal Direct Costs	61,637	100%	48%	6%	46%	87.0	
Information Security	2,394	100%	48%	6%	46%	9.0	Direct Department cost %
IT General	562	100%	48%	6%	46%	2.5	Direct Department cost %
Total IT Department	\$ 64,593	100%	48%	6%	46%	98.5	
Legal Department							
Communications	\$ 605	100%	50%	6%	44%	3.0	Combined Direct Cost %
Legal	7,631	100%	50%	6%	44%	18.0	Combined Direct Cost %
Market Surveillance	2,453	100%	25%	0%	75%	9.0	1999 Direct allocation
Subtotal	10,689	100%	44%	5%	51%	30.0	
Board	1,130	100%	50%	6%	44%	2.0	Combined Direct Cost %
Subtotal Department Costs	11,819	100%	45%	5%	50%	32.0	
Legal General	543	100%	45%	5%	50%	1.5	Department cost %
Total Legal Department	\$ 12,362	100%	45%	5%	50%	33.5	
Finance Department							
Billing & Settlements	\$ 886	100%	3%	0%	97%	3.0	1999 Direct allocation
Application Support	1,122	100%	0%	0%	100%	6.0	1999 Direct allocation
Preliminary Settlement Statements	1,360	100%	0%	0%	100%	11.0	1999 Direct allocation
Final Settlement Statements	1,807	100%	0%	0%	100%	14.0	1999 Direct allocation
Subtotal Direct Costs	5,175	100%	1%	0%	99%	34.0	
Accounting	2,135	100%	50%	6%	44%	7.0	Combined Direct Cost %
Budget	1,449	100%	50%	6%	44%	3.0	Combined Direct Cost %
	8,759	100%	21%	2%	77%	44.0	
CEO - general	540	100%	21%	2%	77%	1.5	Department cost %
Total Finance Department	\$ 9,299	100%	21%	2%	77%	45.5	
Department							
	\$ 3,853	100%	7%	7%	86%	10.5	

1990 Unbundling	Dollars	Per Cent (%)				Employees	Allocation Method
	Total (\$ 000)	Total	Control Area Operations	Congestion	Market Operations	Total	
Administrative Services	1,661	100%	51%	7%	42%	9.0	Total headcount %
Facilities	3,655	100%	51%	7%	42%	3.0	Total headcount %
Total HR Department	\$ 8,969	100%	51%	7%	42%	22.5	
Expense Recovery							
Interest	\$ (1,100)	100%	50%	6%	44%		Combined Direct Cost %
WSCC security coordinator fees	(904)	100%	100%	0%	0%		Collected from WSCC
Total expense recovery	\$ (2,004)	100%	73%	3%	24%		Combined Direct Cost %
Capital							
Infrastructure Costs							
BMS	\$ 11,383	100%	100%	0%	0%		1999 Direct allocation
SA, BBS	53,263	100%	28%	10%	62%		1999 Direct allocation
BBS - Accounting	2,992	100%	50%	6%	44%		Combined Direct Cost %
ICI	27,447	100%	53%	7%	40%		Department expense %
MDAS	5,541	100%	10%	0%	90%		Department expense %
DM	7,329	100%	33%	5%	62%		Department expense %
Facilities	14,442	100%	50%	6%	44%		Combined Direct Cost %
User Groups	977	100%	50%	6%	44%		Combined Direct Cost %
Area Control Center Upgrades	1,367	100%	100%	0%	0%		1999 Direct allocation
Subtotal Infrastructure	124,741	100%	44%	7%	49%		
Project Management	23,241	100%	44%	7%	49%		Infrastructure cost %
Phase II Capital	52,243	100%	36%	13%	51%		1999 Direct allocation
1998 Capital Expenditures	8,208	100%	50%	6%	44%		Combined Direct Cost %
1999 Capital Expenditures	9,456	100%	50%	6%	44%		Combined Direct Cost %
Total Infrastructure Costs	217,889	100%	42%	8%	50%		
Start-up Costs							
Start-up Costs	47,888	100%	50%	6%	44%		Combined Direct Cost %
Working Capital	21,692	100%	50%	6%	44%		Combined Direct Cost %
Trust Administration	5,743	100%	44%	7%	49%		Infrastructure cost %
Capitalized Interest	2,713	100%	50%	6%	44%		Combined Direct Cost %
Interest & Other	5,475	100%	44%	7%	49%		Infrastructure cost %
Total Start-up Costs	83,511	100%	49%	6%	45%		
Total Capital	\$ 301,400	100%	44%	8%	48%		
Service % of Capital	\$ 48,070	100%	50%	6%	44%		