CHAPTER IX COST WORKPAPERS
Witness: J. M. Rivera

Pipeline Safety Enhancement Plan Summary
Enterprise Asset Management System and
Implementation Costs Workpapers

	Workpapers	Testimony Section	Corresponding Testimony Tables	Workpaper Page
Summary	Enterprise Asset Management System	IX.C.3	N/A	WP-IX-5-1
SoCalGas	Enterprise Asset Management System	IX.C.3	N/A	WP-IX-5-3
SDG&E	Enterprise Asset Management System	IX.C.3	N/A	WP-IX-5-5
SoCalGas	Implementation Costs	IX.B.5	N/A	WP-IX-5-10
SDG&E	Implementation Costs	IX.B.5	N/A	WP-IX-5-14

OPERATIONS AND MAINTENANCE WORKPAPER

WORKPAPER TITLE	FERC ACCT.
Summary of Enterprise Asset Management System O&M	859
WITNESS	
Joseph Rivera	

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.5	-	-	-	0.5	-	0.5
DIRECT NON-LABOR	6.0	-	-	-	6.0	-	6.0
TOTAL DIRECT O&M	6.5	-	-	-	6.5	-	6.5

Project Description

The Enterprise Asset Management (EAM) program is focused on applying industry leading records management practices and information technology solutions to govern, record, store, secure, maintain, access, search and analyze transmission pipeline system data in response to the increased volume of pipeline work and associated records driven by the Pipeline Safety Enhancement Program. The program will support leading records and data governance practices and controls; ensure the validity, traceability and completeness of pipeline data; and provide SoCalGas and SDGE personnel with secure anytime, anywhere access to critical pipeline system data. The proposed RIM system is composed of four key data repositories as well as both an enterprise data store for integrating data across the data repositories and a web-portal for enabling anytime, anywhere access to the data. This Blueprint phase will develop an overall plan and costs for the EAM program, establish the EAM program's organizational structure and policies and procedures, and establish processes for data capture of new construction from now forward.

Forecast Methodology

Costs include labor and non-labor costs in order to develop an EAM Technical Blueprint, establish an organization to manage EAM, develop an EAIM process / policy Blueprint, and develop processes for data capature of new construction going forward. Costs are based on rates used in prior company software development projects and include standard expenses and 20% contingency. Internal labor rates are estimated at $50 an hour. External labor rates are estimated at $300 an hour for senior consultants and $150 an hour for contract resources. Costs were allocated to SoCalGas and SDG&E baesd on miles of DOT pipe: 93.7% SoCalGas, 6.3% SDG&E.

The following assumptions were used to establish costs:

- Develop Technical Blueprint: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 6 months
- Establish Organization: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 3 months
- Develop Process / Policy Blueprint: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 6 months
- Develop Processes for Data Capture: 2 Internal and 3 Contract Resources for 9 months

OPERATIONS AND MAINTENANCE WORKPAPER

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WITNESS	
Joseph Rivera	

Please see the following workpapers for more details:
- SoCalGas Transmission Enterprise Asset Management System O&M
- SDG&E Transmission Enterprise Asset Management System O&M

The costs for each area are summarized below.

SoCalGas Transmission Enterprise Asset Management System

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.5	-	-	-	0.5	-	0.5
DIRECT NON-LABOR	5.6	-	-	-	5.6	-	5.6
TOTAL DIRECT O&M	6.1	-	-	-	6.1	-	6.1

SDG&E Transmission Enterprise Asset Management System

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.0	-	-	-	0.0	-	0.0
DIRECT NON-LABOR	0.4	-	-	-	0.4	-	0.4
TOTAL DIRECT O&M	0.4	-	-	-	0.4	-	0.4

Schedule

The EAM Program Blueprint phase is scheduled to complete in 2012.

OPERATIONS AND MAINTENANCE WORKPAPER

WORKPAPER TITLE	FERC ACCT.
SoCalGas Transmission Enterprise Asset Management System O&M	859
WITNESS	
Joseph Rivera	

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.5	-	-	-	0.5	-	0.5
DIRECT NON-LABOR	5.6	-	-	-	5.6	-	5.6
TOTAL DIRECT O&M	6.1	-	-	-	6.1	-	6.1

Project Description

The Enterprise Asset Management (EAM) program is focused on applying industry leading records management practices and information technology solutions to govern, record, store, secure, maintain, access, search and analyze transmission pipeline system data in response to the increased volume of pipeline work and associated records driven by the Pipeline Safety Enhancement Program. The program will support leading records and data governance practices and controls; ensure the validity, traceability and completeness of pipeline data; and provide SoCalGas and SDGE personnel with secure anytime, anywhere access to critical pipeline system data. The proposed EAM system is composed of four key data repositories as well as both an enterprise data store for integrating data across the data repositories and a web-portal for enabling anytime, anywhere access to the data. This Blueprint phase will develop an overall plan and costs for the EAM program, establish the EAM program's organizational structure and policies and procedures, and establish processes for data capture of new construction from now forward.

Forecast Methodology

Costs include labor and non-labor costs in order to develop an EAM Technical Blueprint, establish an organization to manage EAM, develop an EAM process / policy Blueprint, and develop processes for data capature of new construction going forward. Costs are based on rates used in prior company software development projects and include standard expenses and 20% contingency. Internal labor rates are estimated at $50 an hour. External labor rates are estimated at $300 an hour for senior consultants and $150 an hour for contract resources. Costs were allocated to SoCalGas and SDG&E baesd on miles of DOT pipe: 93.7% SoCalGas, 6.3% SDG&E.

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- Establish Organization: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 3 months
- Develop Process / Policy Blueprint: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 6 months
- Develop Processes for Data Capture: 2 Internal and 3 Contract Resources for 9 months

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Schedule

The EAM Program Blueprint phase is scheduled to complete in 2012.

OPERATIONS AND MAINTENANCE WORKPAPER

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SDG&E Transmission Enterprise Asset Management System O&M	859
WITNESS	
Joseph Rivera	

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.0	-	-	-	0.0	-	0.0
DIRECT NON-LABOR	0.4	-	-	-	0.4	-	0.4
TOTAL DIRECT O&M	0.4	-	-	-	0.4	-	0.4

Project Description

Costs include labor and non-labor costs in order to develop an Enterprise Asset Management (EAM) Technical Blueprint, establish an organization to manage EAM, develop an EAM process / policy Blueprint, and develop processes for data capature of new construction going forward. Costs are based on rates used in prior company software development projects and include standard expenses and 20% contingency. Internal labor rates are estimated at $50 an hour. External labor rates are estimated at $300 an hour for senior consultants and $150 an hour for contract resources. Costs were allocated to SoCalGas and SDG&E baesd on miles of DOT pipe: 93.7% SoCalGas, 6.3% SDG&E.

The following assumptions were used to establish costs:

- Develop Technical Blueprint: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 6 months
- Establish Organization: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 3 months
- Develop Process / Policy Blueprint: 3 Senior Consultants, 2 Internal and 3 Contract Resources for 6 months
- Develop Processes for Data Capture: 2 Internal and 3 Contract Resources for 9 months

Forecast Methodology

Costs include labor and non-labor expenses to develop an EAM Technical Blueprint, establish an organization to manage EAM, develop an EAM process / policy Blueprint, and develop processes for data capture of new construction going forward. Costs are based on utilizing approximately 8 SoCalGas & SDG&E internal resources and 21 external consulting resources for each of the activities mentioned above throughout 2012. Costs are based on rates used in prior company software development application implementations. Costs were allocated to SoCalGas and SDG&E baesd on miles of DOT pipe: 93.7% SoCalGas, 6.3% SDG&E.

WORKPAPER TITLE	FERC ACCT.
SDG&E Transmission Enterprise Asset Management System O&M	859
WITNESS	
Joseph Rivera	

Schedule

The EAM Program Blueprint phase is scheduled to complete in 2012.

			Data		
Item #	Title	Category	Sum of Labor Cost	Sum of Non-Labor Cost	Sum of Total Cost
1	Develop EAM System Technical Blueprint	Blueprint & Organization	104,000	1,404,000	1,508,000
1 Total			104,000	1,404,000	1,508,000
2	Establishment of Organization to Manage EAM System2	Blueprint & Organization	52,000	702,000	754,000
2 Total			52,000	702,000	754,000
3	Develop EAM System Process/Policy Blueprint2	Blueprint & Organization	104,000	1,404,000	1,508,000
3 Total			104,000	1,404,000	1,508,000
9	Process for data capture of new construction going forward	Process	156,000	702,000	858,000
9 Total			156,000	702,000	858,000
12	Miscellaneous Expenses	Expenses	0	432,000	432,000
	(blank)		0	351,000	351,000
12 Total			0	783,000	783,000
Grand Total			416,000	4,995,000	5,411,000

Contingency 20% (Costs in Thousand $)	499.2	5,994.0	6,493.2
SoCalGas Miles DOT of Pipe	3756	93.7%	
SDG&E Miles of DOT Pipe	252	6.3%	
Total	4008		
SoCalGas EAM Costs	$0.5	$5.6	$6.1
SDG&E EAM Costs	$0.0	$0.4	$0.4
Total (Millions)	$0.5	$6.0	$6.5

Item #	Title	Description	Cost Elements	Labor Cost	Non-Labor Cost	Total Cost	% Capital	%O&M	FERC Account
1	Develop EAM System Technical Blueprint	Use a mix of company personnel and consultants to develop an overall plan for: 1) what data is needed to be retrieved quickly 2) into which system this data is to be stored 3) Data Management Jurisdication	Develop Technical Blueprint Assumption: 3 Consultants; 2 SEU and 3 Contract Resources	$104,000	$1,404,000	$1,508,000	0%	100%	303
2	Establishment of Organization to Manage EAM System	Establish the size and responsibility of a department to set and update policies and procedures, ensure compliance, develop and issues reports, determine supercedence rules, etc.	Establish Organization Assumption: 3 Consultants; 2 SEU and 3 Contract Resources	$52,000	$702,000	$754,000	0%	100%	303
3	Develop EAM System Process/Policy Blueprint	Determine management structure for developing the blueprint, running a project to install new systems and conducting conversions, and developing an organization to keep RIM up and running in the future	Develop Process / Policy Blueprint Assumption: 3 Consultants; 2 SEU and 3 Contract Resources	$104,000	$1,404,000	$1,508,000	0%	100%	303
9	Process for data capture of new construction from now forward	For all new construction projects need to ensure all relevant information is captured and is traceable. Need additional resources to ensure this. Major items to capture for electronic storage include Material Information; Design Data Sheets; Test Records; As-builts, etc	Establish process(es) and identify system(s) for capture Assumption: 2 SEU and 3 Contract Resources	$156,000	$702,000	$858,000	0%	100%	303
12	Miscellaneous Expenses	Miscellaneous SEU and Contract Resource Expenses	Expenses Assumption: 9 Resources @ $4K / month	0	$432,000	$432,000	0%	100%	303
12		Miscellaneous Consultant Resource Expenses	Expenses Assumption: 9 Consultant Resources @ 15% of rate - 6 each for 6 months, 3 each for 3 months	0	$351,000	$351,000	0%	100%	303
				$416,000	$4,995,000	$5,411,000			
			Total with 20% Contingency	$499,200	$5,994,000	$6,493,200			

					O&M		
Item #	**Title**	**Start Date**	**Duration**	**Category**	**2012**	**2013**	**Total (2012 - 2015)**
1	Develop EAM System Technical Blueprint	Q1, 2012	6 months	Blueprint & Organization	$1,508,000		$1,508,000
2	Establishment of Organization to Manage EAM System	Q1, 2012	3 months	Blueprint & Organization	$754,000		$754,000
3	Develop EAM System Process/Policy Blueprint	Q1, 2012	6 months	Blueprint & Organization	$1,508,000		$1,508,000
9	Process for data capture of new construction from now forward	Q2, 2012	9 months	Process	$858,000		$858,000
12	Miscellaneous Expenses	Q1, 2012	12 months	Expenses	$432,000		$432,000
12		Q1, 2012	6 months	Expenses	$351,000		$351,000
					$5,411,000	**$0**	**$5,411,000**
			Total with 20% Contingency		**$6,493,200**	**$0**	**$6,493,200**

OPERATIONS AND MAINTENANCE WORKPAPER

WORKPAPER TITLE	FERC ACCT.
Summary SoCalGas Implementation Costs to Enhance Billing Systems	905
WITNESS	
Joseph Rivera	

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.5	-	-	-	0.5	-	0.5
DIRECT NON-LABOR	-	-	-	-	-	-	-
TOTAL DIRECT O&M	0.5	-	-	-	0.5	-	0.5

Project Description

Enhance and modify customer billing system to reflect Pipeline Safety Enhancement Plan Surcharge. SoCalGas has two major systems, CISCO and Special Customer Billing System.

Forecast Methodology

See Attached.

OPERATIONS AND MAINTENANCE WORKPAPER

WORKPAPER TITLE	FERC ACCT.
SoCalGas Implementation Costs to Enhance CISCO Billing System	905
WITNESS	
Joseph Rivera	

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.3	-	-	-	0.3	-	0.3
DIRECT NON-LABOR	-	-	-	-	-	-	-
TOTAL DIRECT O&M	0.3	-	-	-	0.3	-	0.3

Project Description

Provide a separate per customer surcharge on the customer invoice to recover PSEP project costs. This estimate is for the the CIS Billing system only.

Forecast Methodology

$306,250 based on 2,500 IT hrs @ $100/hr = $250,000; plus 750 COT hrs @ $75/hr = $56,250.

1. Add a new Line Item on the bill.
2. New surcharge to be a fixed amounts for all accounts.
3. No exemptions to be applied.
4. Apply the 20% CARE discount, where applicable.

OPERATIONS AND MAINTENANCE WORKPAPER

WORKPAPER TITLE	FERC ACCT.
SoCalGas Implementation Costs to Enhance the Special Customer Billing System	905
WITNESS	
Joseph Rivera	

PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.2	-	-	-	0.2	-	0.2
DIRECT NON-LABOR	-	-	-	-	-	-	-
TOTAL DIRECT O&M	0.2	-	-	-	0.2	-	0.2

Project Description

Provide a separate per customer surcharge on the customer invoice to recover PSEP project costs. This estimate is for the Special Customer Billing system only.

Forecast Methodology

The total number of man hours times $100 per hour (1711 hrs x 100 = $171,100)

Cost Development for Specialized Customer Billing System (SCBS)

Description	Total hrs w/ Contngcy
Interfaces	
- CIS	86
Account Workbook	
- Billing Data can be used to exempt the customers from this charge	29
Online Maintenance	
-Tariff Maintenance: new surcharges.	
Online Calc	
- New charge is captured	230
Bill Calc and Presentation	
- New box on bill	230
Bill Revenue Posting (Include Patrick's group based on CARB project actual hour)	
- New charges to be set up in SCBS and CIS to report revenue.	72
EDI	
- New box for Pipeline Safety Surcharge	86
CCS	
- Add new surcharge as bundled	86
Sub Total - SCBS development without Testing	821
Testing	
System Testing	115
Integration Testing (Include Patrick's group based on CARB project actual hour)	115

OPERATIONS AND MAINTENANCE WORKPAPER

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Regression Testing	115
UAT Support	115
Storm Support(20% CFG, 20% CFNC)	58
Sub Total - SCBS tasks	1,339
Architect (20% CFG, 20% CFNC)	
Information Security(20% CFG, 20% CFNC)	
Middleware(20% CFG, 20% CFNC)	
DBA(20% CFG, 20% CFNC)	86
Sub Total of Non-SCBS Resources	86
Project Management & Coordination(20% CFG, 20% CFNC)	285
Totals	1,711

SCBS Assumptions and Impacts:

Cost	Assume fully loaded cost of approximately $100/hr.
	The safety surcharge should work similarly to Public Purpose Program surcharge. Different tariff rates can have different PPP charges.
	It is now proposed to have fixed charge for all customers. To be implemented consistent with existing functionality based on customer classes/tariff rates.
	Customers can be exempted from the charge.
	This charge can be bundled.
	New detail charge box on the bill
	New line item on the Summary of Billing Charges on the bill
	New charge type to report revenue
Online Calc	- Modify Billing Schedule Tariff Charge and Rate Change screens
Bill Calc and Presentation	- One new Box on the bill
EDI	One new Box on Bill
Bill Viewer	No impacts.
Interfaces	CCS: - Add new surcharge as bundled
Reports	No new reports
Revenue Posting	- No new Tariffs
Batch Billing PREPARE	No changes

OPERATIONS AND MAINTENANCE WORKPAPER

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SDG&E Implementation Costs to Enhance Billing Systems	905
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PROJECT COST ($000,000 IN 2011$)	2012	2013	2014	2015	2012-2015	2016-2021	Total
DIRECT LABOR	0.1	-	-	-	0.1	-	0.1
DIRECT NON-LABOR	-	-	-	-	-	-	-
TOTAL DIRECT O&M	0.1	-	-	-	0.1	-	0.1

Project Description

Develop, test, and implement changes to the customer billing system to show the PSEP Surcharge.

Forecast Methodology

The total number of programning, testing, and contingency hours is 536 + 46 = 582 hrs. The cost is 582 hrs times $100/hr or $58,200.

Schedule

Project is estimated to take 40 weeks to complete.

SDG&E Project Estimate: PSEP - **Revenue**

Requirement		Description	Routine Type	Complexity	New / Existing	Developer Skill	Model Hours	design	code & test	Adjustment	Estimated Hours	CFG %	CFG Hours	Total Hours	Notes / Assumptions
	REVENUE														
1	CUXRV035	add new charge code to Gas Extract report	Batch Driver	Low	Existing	Average	30	6	24	20	20	20%	4	24	
2	CUXRV036	add new charge code to Gas Extract report	Batch Driver	Low	Existing	Average	30	6	24	4	4	20%	0.8	4.8	
3	CUXRV037	add new charge code to Gas Extract report	Batch Driver	Low	Existing	Average	30	6	24	20	20	20%	4	24	
4	CUCBRV35	add new charge code to copybook	Parm Table Maint	Low	Existing	Average	6	1.2	4.8		6	20%	1.2	7.2	
5	CUCBRV36	add new charge code to copybook	Parm Table Maint	Low	Existing	Average	6	1.2	4.8		6	20%	1.2	7.2	
6	CU07TB15	add new entries into table for CC&R report	Parm Table Maint	Low	Existing	Average	6	1.2	4.8		6	20%	1.2	7.2	
7	Modify PARMSRC.FERCMAP file	Update the file to keep F&RC in sync with CC&R	Parm Table Maint	Low	Existing	Average	6	1.2	4.8		6	20%	1.2	7.2	
8	update Gas Extract "cheat sheet"	Revenue	Parm Table Maint	Low	Existing	Expert	4	0.8	3.2	2	2	5%	0.1	2.1	
6	create new report program - model after CARB Credit	COBOLB ex: CUXRV051	Batch Driver	Low	New	Average	45	9	36		45	5%	2.25	47.25	
6	create new report program	COBOLB ex: CRRV010Y	Batch Driver	Low	New	Average	45	9	36		45	5%	2.25	47.25	
6	Modify JCL for new PROC	JCL = CIRV007D	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	Modify JCL for new PROC	JCL = CIRV017M	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	Modify JCL for new PROSE	PROSE = CIRV007D	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	Modify JCL for new PROSE	PROSE = CIRV017M	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	create new PROC	PROC ex: CUXRV051	Parm Table Maint	Medium	Existing	Beginner	12	2.4	9.6		12	5%	0.6	12.6	
6	create new PROC	PROC ex: CRRV010Y	Parm Table Maint	Medium	Existing	Beginner	12	2.4	9.6		12	5%	0.6	12.6	
6	create new PROC	PROC ex: CRRV010Z	Parm Table Maint	Medium	Existing	Beginner	12	2.4	9.6		12	5%	0.6	12.6	
6	create new report control card	CNTL ex: CUXRV051	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	create new report control card	CNTL ex: CUXRV051A	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	create new report control card	CNTL ex: CUXRV051B	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
6	create new report control card	CNTL ex: CRRV010Y	Parm Table Maint	Medium	Existing	Average	8	1.6	6.4		8	5%	0.4	8.4	
	subtotal										**260**		**23.2**	**283.2**	
Total CISCO Development											**260**		**23.2**	**283.2**	

Requirements Analysis / Testing / Su		Requirements, Testing and Support based on a percent of the				Percent of Devl Effort	Estimated Hours	CFG %	CFG Hours	Total Hours	Notes
1	IT Requirements Analysis					10%	26	20%	5	31	0.1 of total development
2	Offshore Components										
2.1	Offshore Packet Creation					0%	0	20%	0	0	Percentage will vary based on
2.3	Offshore Support (package management, meeting, issue)					0%	0	20%	0	0	
2.4	Validate Offshore Test Results					0%	0	20%	0	0	
3	IT Integration Test					10%	26	10%	3	29	0.1 of total development
4	System Test - CST					40%	104	20%	21	125	0.4 of total development

	Requirement	Description	Routine Type	Complexity	New / Existing	Developer Skill	Model Hours	design	code & test	Adjustment	Estimated Hours	CFG %	CFG Hours	Total Hours	Notes / Assumptions
5	System Test - IT									10%	26	20%	5	31	0.1 of total development
6	Testing - BOS									0%	0	10%	0	0	0 of total development
7	Rate Setup - BOS										0	10%	0	0	As Required
8	Controls Reports									0%	0	10%	0	0	0 of total development
10	Data Base Admin Support									0%	0	10%	0	0	0 of total development
11	Infrastructure Support										0	10%	0	0	As Required
12	Information Protection Support										0	10%	0	0	As Required
13	IT Lead									3%	8	10%	1	9	As Required
14	Project Management									0%	0	10%	0	0	0 of total requirements +
15	Post Production Support									0%	0	10%	0	0	0 of total development
16	Contingency for New & Change	Additional Scope Requirements								10%	26	10%	3	29	0.1 of total development
17	Regression Testing									0%	0	10%	0	0	0 of total development
18	Merge									0%	0	25%	0	0	0 of total development
19	Impact to Add'l Modules- Recompiles									0%	0	20%	0	0	0 of total development
	subtotal										**216**		**37**	**253**	
	TOTAL CISCO Requirements Analysis, Development and Test										**476**		**60**	**536**	

SDG&E Project Estimate - Pipeline Safety Enhancement Plan Surcharge

Requirement		Description	Routine Type	Complexity	New / Existing	Developer Skill	Model Hours	Adjustment	Estimated Hours	CFG %	CFG Hours	Total Hours	Notes / Assumptions
1 - Billing Changes													
1.1	Charge Decode Tables	Add new charge codes	Parm Table Maint	Low	Existing	Average	6		6	25%	1.5	7.5	
1.2	Bill print dontables	Add new charge code for Regular & Group bill	Parm Table Maint	Low	Existing	Average	6		6	25%	1.5	7.5	
1.3	EDI	Add new charge code to DB2 table	Parm Table Maint	Low	Existing	Average	6		6	25%	1.5	7.5	
1.4	Bill Calc	Add code to CUMBI227 if PTMC charge or possibly CUMBI246 if PTAR charge	Common Module	Very Complex	Existing	Average	70		70	25%	17.5	87.5	
	subtotal								**18**		**4.5**	**22.5**	
TOTAL CISCO Development									**18**		**4.5**	**22.5**	

Requirements Analysis / Testing / Support		Requirements, Testing and Support based on a percent of the Development effort.	Percent of Devl Effort	Estimated Hours	CFG %	CFG Hours	Total Hours	Notes
1	IT Requirements Analysis -		10%	2	20%	0	2	0.1 of total development effort.
2	IT Integration Test		10%	2	20%	0	2	0.1 of total development effort.
3	System Test - STS		40%	7	20%	1	9	0.4 of total development effort.
4	System Test - IT		20%	4	20%	1	4	0.2 of total development effort.
5	Testing - BOS		5%	1	10%	0	1	0.05 of total development effort.
6	Rate Setup - BOS			0	10%	0	0	As Required
7	Controls Reports		5%	1	10%	0	1	0.05 of total development effort.
8	Data Base Admin Support			0	10%	0	0	As Required
9	Infrastructure Support			0	10%	0	0	As Required
10	Information Protection Support			0	10%	0	0	As Required
11	Project Management		10%	3	10%	0	3	0.1 of total requirements + development + testing effort.
12	Post Production Support		5%	1	10%	0	1	0.05 of total development effort.
13	Contingency for New & Change	Additional Scope Requirements	0%	0	10%	0	0	0 of total development effort.
	subtotal			**20**		**3**	**23**	
TOTAL CISCO Requirements Analysis, Development and Test				**38**		**8**	**46**	

SDG&E Project

Phase 1 Schedule

Project Stage	Hours	Duration	WK-1	WK-2	WK-3	WK-4	WK-5	WK-6	WK-7	WK-8	WK-9	WK-10	WK-11	WK-12	WK-13	WK-14	WK-15	WK-16	WK-17	WK-18	WK-19	WK-20	WK-21	WK-22	WK-23	WK-24	WK-25	WK-26	WK-27	WK-28	WK-29	WK-30	WK-31	WK-32	WK-33	WK-34	WK-35	WK-36	WK-37	WK-38	WK-39	WK-40
Requirements Analysis	31	4																																									
Detail Design	57	5																																									
Development	227	18																																									
IT Integration Test	29	3																																									
IT System Test	31	4																																									
Production Support	0	6																																									