Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2019   (U 904-G))

Application No. 17-10-___

Exhibit No.: (SCG-26-CWP)

CAPITAL WORKPAPERS TO

PREPARED DIRECT TESTIMONY

OF CHRISTOPHER R. OLMSTED

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

OCTOBER 2017

SoCalGas

A Sempra Energy utility

2019 General Rate Case - APP
INDEX OF WORKPAPERS

Exhibit SCG-26-CWP - INFORMATION TECHNOLOGY

DOCUMENT	PAGE

2019 General Rate Case - APP
INDEX OF WORKPAPERS

Exhibit SCG-26-CWP - INFORMATION TECHNOLOGY

Exhibit SCG-26-CWP - INFORMATION TECHNOLOGY

Exhibit SCG-26-CWP - INFORMATION TECHNOLOGY

Overall Summary For Exhibit No. SCG-26-CWP

Area:	**INFORMATION TECHNOLOGY**
Witness:	**Christopher R. Olmsted**

	In 2016 $ (000)		
	Adjusted-Forecast		
	2017	**2018**	**2019**
A. Controller, Reg Affrs, Legal	847	1,192	1,123
B. CS - Field	6,838	5,040	3,472
C. CS - Information	4,464	6,510	12,483
D. CS - Office Operations	13,190	12,412	23,663
E. Gas System Operations	3,401	3,806	4,771
F. Fleet Services	502	2,387	7,601
G. IT	50,879	73,648	81,227
H. Procurement	2,201	270	0
I. Gas System Integrity	34,970	38,000	36,223
J. HR	300	491	791
K. Supply Management	2,657	2,547	0
M. AM Infrastructure	0	1,768	4,815
N. Corporate	2,404	427	0
Total	**122,653**	**148,498**	**176,169**

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	A. Controller, Reg Affrs, Legal
Workpaper:	VARIOUS

Summary for Category: A. Controller, Reg Affrs, Legal

| | In 2016$ (000) | | | |
| | Adjusted-Recorded | Adjusted-Forecast | | |
	2016	**2017**	**2018**	**2019**
Labor	0	158	567	574
Non-Labor	0	689	625	549
NSE	0	0	0	0
Total	**0**	**847**	**1,192**	**1,123**
FTE	0.0	1.4	4.9	5.0

00776AE 81495 FINANCIAL PLNG & BUDGETING

Labor	0	10	0	0
Non-Labor	0	218	0	0
NSE	0	0	0	0
Total	**0**	**228**	**0**	**0**
FTE	0.0	0.1	0.0	0.0

00776B 84284 TARIFF MANAGER 2 REPLACEMENT

Labor	0	41	0	0
Non-Labor	0	261	0	0
NSE	0	0	0	0
Total	**0**	**302**	**0**	**0**
FTE	0.0	0.4	0.0	0.0

00776E 84248 2019 RO MODEL & GRID ENHANCEMENT

Labor	0	107	0	0
Non-Labor	0	210	0	0
NSE	0	0	0	0
Total	**0**	**317**	**0**	**0**
FTE	0.0	0.9	0.0	0.0

00786C 19116 FoF - Claims Analytics

Labor	0	0	567	574
Non-Labor	0	0	625	549
NSE	0	0	0	0
Total	**0**	**0**	**1,192**	**1,123**
FTE	0.0	0.0	4.9	5.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776AE - 81495 FINANCIAL PLNG & BUDGETING

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AE - 81495 FINANCIAL PLNG & BUDGETING

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	10	0	0
Non-Labor	Zero-Based	0	0	0	0	0	218	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**228**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Business Purpose:

Replace BPS with a system that enhances the overall budgeting process, promotes process integration (i.e, workforce planning should be integrated with any labor budgeting activities) and migrates the 5-Year financial planning process into a supported application. Capabilities of the new system to include: complete Cost Center budget forecasting of O&M, Capital, Refundable, Billable and Clearing expenditures, Earnings Plan development and forecasting updates (Outlooks) of financial results. The new planning & budgeting system will provide administrative tools which allows Central Planning to manage budgeting assumptions (e.g. labor inflation, etc.), grant system access, permit status monitoring, and implement global adjustments for updated forecasting scenarios. The new planning & budgeting system will also be enabled to support process improvements such as Rolling/Multi-Year O&M budgeting as well as enhanced reporting and variance analysis drill-down.

Physical Description:

Utilize the same key accounting objects (cost centers, orders, accounts, etc.) as our core SAP system.
Most integrated Planning & Budgeting solution – with SAP data: Actual $'s, cost centers, work orders, security settings, etc.
Most efficient leverage of existing IT infrastructure and support.
Best position for future integration with SAP HANA.
End users are familiar with SAP/BW applications for reporting and analysis.

Project Justification:

Provide Analysis of Earnings Plan Variances more quickly and accurately.
Provide more efficient tools for preparing Outlook forecasts and "what-if" scenarios.
Calculate all Clearing budget allocations (Shared Service, Overheads, etc.) in order to forecast complete financial results.
Ability to track budget/plan preparation statuses, approvals and produce comparisons between versions.
Standardize Executive Reporting of meaningful data through reporting enhancements.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: A. Controller, Reg Affrs, Legal

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776AE - 81495 FINANCIAL PLNG & BUDGETING

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AE**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AE - 81495 FINANCIAL PLNG & BUDGETING
Workpaper Detail:	00776AE.001 - 81495 FINANCIAL PLNG & BUDGETING

In-Service Date: 03/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	10	0	0
Non-Labor	218	0	0
NSE	0	0	0
Total	**228**	**0**	**0**
FTE	0.1	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776B - 84284 TARIFF MANAGER 2 REPLACEMENT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776B - 84284 TARIFF MANAGER 2 REPLACEMENT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	41	0	0
Non-Labor	Zero-Based	0	0	0	0	0	261	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	302	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0

Business Purpose:

Management Corrective Action (MCA) – Audit #15-257 (CAU CPUC Tariff Management)
This project will mitigate Business Control issue #1 by:
Leveraging the services of an experienced application solution provider to rewrite the Tariff Manager v2 (TM2) application using current and standard technologies
Ensuring the redeveloped tariff management system complies with current Sempra Energy Utilities Top Information Security Controls.

Physical Description:

Upgrade the legacy software language platform to a supported product.

Ensure the current SoCalGas and SDG&E tariff filing business processes (those enabled by the Tariff Manager application) continue to function in the new environment.

Project Justification:

Implementation will satisfy the Management Corrective Action (MCA) and close the VB6 risk as described per Audit #15-257 (CAU CPUC Tariff Management).

Eliminating this risk of system failure will avoid needing to hire additional 3+ FTEs per utility to manually manage the Tariff filing lifecycle. Manually managing the filings is a labor-intensive process.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776B - 84284 TARIFF MANAGER 2 REPLACEMENT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776B - 84284 TARIFF MANAGER 2 REPLACEMENT
Workpaper Detail:	00776B.001 - 84284 TARIFF MANAGER 2 REPLACEMENT

In-Service Date: 04/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	41	0	0
Non-Labor	261	0	0
NSE	0	0	0
Total	302	0	0
FTE	0.4	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776E - 84248 2019 RO MODEL & GRID ENHANCEMENT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776E - 84248 2019 RO MODEL & GRID ENHANCEMENT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	107	0	0
Non-Labor	Zero-Based	0	0	0	0	0	210	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	317	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0

Business Purpose:

Enhance the General Rate Case Results of Operations (RO) model for the following:
Add reporting segment for PSEP
Update cost reporting to conform with SMAP/RAMP requirements
Sync up calculation of tax module in RO model with Power Tax
Create variance analysis tool to run various scenarios
Streamline rate base calculation
Enhance data transfer process from the General Rate Case Integrated Database with the RO model
Use of consultant will be required to enhance the model
The integrated SoCalGas and SDG&E General Rate Case RO Model from the 2016 GRC must be updated to conform to
the CPUC requirements and recommendations as defined in the 2016 GRC decision.

Physical Description:

Developed new database queries and linkages, add reports, and enhance Visual Basic (VB) code to create PSEP revenue
requirement
Developed new database queries and linkages, add reports, and enhance VB code to categorize safety spending
New tax module will align with Power Tax
Developed VB code and macros to create variance reports for different areas in the RO model
Redesign calculations to eliminate wasted calculations and reduce to 10 mins or less
Dedicated server to improve access and run time for GRID

Project Justification:

The primary objective of this project is to satisfy CPUC filing requirements and thus reduce the potential for a delay in GRC
filing approval. Benefits include:
Accurate representation of SDG&E and SoCalGas GRC request ensure proper recovery of authorized costs
Avoid unnecessary audits from the CPUC
Accurate internal assessment of earnings and cash flow by Financial Planning, Accounting, and GRC Case Management
Accurate assessment of bill impacts for Rate Design
Accurate and timely information will be available for Witness Presentation to Executive Committee held in June 2017

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: A. Controller, Reg Affrs, Legal

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776E - 84248 2019 RO MODEL & GRID ENHANCEMENT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776E**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776E - 84248 2019 RO MODEL & GRID ENHANCEMENT
Workpaper Detail:	00776E.001 - 84248 2019 RO MODEL & GRID ENHANCEMENT

In-Service Date: 07/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	107	0	0
Non-Labor	210	0	0
NSE	0	0	0
Total	317	0	0
FTE	0.9	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00786C - 19116 FoF - Claims Analytics**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	4. Business Optimization
Workpaper Group:	00786C - 19116 FoF - Claims Analytics

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	567	574
Non-Labor	Zero-Based	0	0	0	0	0	0	625	549
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**1,192**	**1,123**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	4.9	5.0

Business Purpose:

Sempra currently uses various claims and asset management systems (RiskMaster, GIS, SAP, CASCADE) that are separately maintained and supported by various departments. Between these systems, there is no unique "identifier" that would enable data to be easily extracted for reporting or analytics. The company's ability to analyze claims, identify trends and avoid future litigation can be greatly improved by the ability to access, report, anlatyze and model data within these separate systems (collectively referred to as Claims Analytics).

Physical Description:

Project will deliver an IT solution that will make data from RiskMaster, GIS, SAP and CASCADE accessible for analytics and reporting. The focus will be on predictive analytics in order to identify trends and help decision makers take correction action to avoid future litigation.

Project Justification:

Sempra can achieve soft benefits in the following areas using Claims Analytics: fraud detection,outlier claims, litigation expense management and defense strategy. In addition, project would result in efficiency and productivity savings in making data more easily acceptable for analytics and reporting. By improving our Claims Management processes, this could also have a positive impact on customer interactions.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	4. Business Optimization
Workpaper Group:	00786C - 19116 FoF - Claims Analytics

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00786C**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	4. Business Optimization
Workpaper Group:	00786C - 19116 FoF - Claims Analytics
Workpaper Detail:	00786C.001 - 19116 FoF - Claims Analytics

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	567	0
Non-Labor	0	625	0
NSE	0	0	0
Total	0	1,192	0
FTE	0.0	4.9	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	A. Controller, Reg Affrs, Legal
Category-Sub:	4. Business Optimization
Workpaper Group:	00786C - 19116 FoF - Claims Analytics
Workpaper Detail:	00786C.002 - 19116 FoF - Claims Analytics

In-Service Date: 10/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	574
Non-Labor	0	0	549
NSE	0	0	0
Total	**0**	**0**	**1,123**
FTE	0.0	0.0	5.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY		
Witness:	Christopher R. Olmsted		
Category:	B. CS - Field		
Workpaper:	VARIOUS		

Summary for Category: B. CS - Field

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	2,948	702	638
Non-Labor	0	3,890	4,338	2,834
NSE	0	0	0	0
Total	**0**	**6,838**	**5,040**	**3,472**
FTE	0.0	25.6	6.1	5.6

00774U 84227 SCG CUSTOMER SERVICE ROUTING

Labor	0	776	0	0
Non-Labor	0	780	0	0
NSE	0	0	0	0
Total	**0**	**1,556**	**0**	**0**
FTE	0.0	6.7	0.0	0.0

00785A 19108 FoF - CSF PACER Mobile Platform

Labor	0	867	296	101
Non-Labor	0	2,559	3,966	1,490
NSE	0	0	0	0
Total	**0**	**3,426**	**4,262**	**1,591**
FTE	0.0	7.5	2.6	0.9

00754E 81499 MSA INSPECTION PROJECT

Labor	0	328	0	0
Non-Labor	0	0	0	0
NSE	0	0	0	0
Total	**0**	**328**	**0**	**0**
FTE	0.0	2.9	0.0	0.0

00754C 84291 PACER OCS ORDER REPRIOR PH1

Labor	0	208	0	0
Non-Labor	0	232	0	0
NSE	0	0	0	0
Total	**0**	**440**	**0**	**0**
FTE	0.0	1.8	0.0	0.0

00784B 19109 FoF - Energy Diversion

Labor	0	469	234	0
Non-Labor	0	319	0	0
NSE	0	0	0	0
Total	**0**	**788**	**234**	**0**
FTE	0.0	4.1	2.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Category: B. CS - Field

Workpaper: VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00784D 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II				
Labor	0	300	172	537
Non-Labor	0	0	372	1,344
NSE	0	0	0	0
Total	**0**	**300**	**544**	**1,881**
FTE	0.0	2.6	1.5	4.7

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774U - 84227 SCG CUSTOMER SERVICE ROUTING

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774U - 84227 SCG CUSTOMER SERVICE ROUTING

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	776	0	0
Non-Labor	Zero-Based	0	0	0	0	0	780	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,556	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0

Business Purpose:

Mission critical CSF routing system shall undergo server, and client replacement, application upgrades and functional enhancements. Obsolete applications will be replaced and enhanced. End-to-end programs and process to maintain facility and street location currency, accuracy and consistency will be developed for ongoing operations.
The Automated Resourcing Tool (ART) shall undergo server replacement, application upgrades and functional enhancements to sustain daily operations, support MSA Inspections and improve route planning efficiencies.
A new application will be deployed to efficiently plan MSA Inspection routes and support stranded AMIGO business functions remaining Advanced Meter Deployment. (i.e. Legal Jurisdictions, Annexation, Cycle Balancing, Section, Segment).
A new in-vehicle turn-by-turn navigation application shall be deployed to replace the IGuidance application which is no longer supported by the vendor and requires critical functional fixes, enhancements and data updates. The new application shall enable CSF field employees to navigate more safely and effectively to work locations by providing real-time traffic updates, improved address locations, periodic data updates and real-time re-routing when same-day route changes occur.
Integrate and enhance map and facility data accuracy, consistency, across CSF routing applications. Develop capabilities for route analysis, mileage reporting. Develop programs and processes for ongoing maintenance of facility locations and street map data.

Physical Description:

1A: Tier 1 system supported by IT and Vendor. Improved system performance.
1B: MSA Inspection Route Assignment, Route planning efficiencies.
2A: A new system to plan, optimize and manage MSA Inspection Routes and forecast workload that integrates with CIS, PACER, and DART
2B: Tools and processes to support business requirements for customer and billing factor initiation and maintenance in CIS after Advanced Meter is deployed.
Implement a new fleet navigation application to include enhancements including real-time traffic. Street map updates and enhanced address and coordinate compatibility.
Improved consistency in mapping, mileage reporting. Ongoing maintenance programs and processes to maintain consistent and accurate facility location and street network data. Enhance capability for route analysis and continuous improvement.

Project Justification:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: B. CS - Field

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00774U - 84227 SCG CUSTOMER SERVICE ROUTING

Avoid outages of Tier 1 ART system which would result in significant CSF productivity losses, overtime.

MSA Inspection compliance, MSA inspection route planning efficiency.

Decommission legacy AMIGO Meter Route Planning Application.

Sustain operations of stranded Meter Reading business processes after Advanced Meter deployment.

Sustain operations of navigation capability for CSF Technicians; Improved effectiveness and efficiency for in-vehicle work-order navigation.

Efficiencies in CSF route planning and assignment - Enables and implements GROW program recommendations.

Improve reporting for miles driven, route compliance, opportunity to balance efficiency and customer satisfaction.

Compliance with Data Center Refresh Project server standards and vendor support agreements

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Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774U - 84227 SCG CUSTOMER SERVICE ROUTING

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774U**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774U - 84227 SCG CUSTOMER SERVICE ROUTING
Workpaper Detail:	00774U.001 - 84227 SCG CUSTOMER SERVICE ROUTING

In-Service Date: 03/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	776	0	0
Non-Labor	780	0	0
NSE	0	0	0
Total	**1,556**	**0**	**0**
FTE	6.7	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00785A - 19108 FoF - CSF PACER Mobile Platform**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00785.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00785A - 19108 FoF - CSF PACER Mobile Platform

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	867	296	101
Non-Labor	Zero-Based	0	0	0	0	0	2,559	3,966	1,490
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**3,426**	**4,262**	**1,591**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	7.5	2.6	0.9

Business Purpose:

This project will:
Eliminate pagers for CSF Technicians
Reduction in Break/Fix cost of MDT hardware and Software
Increase field efficiency through remote assist, automated route optimization and visual situational awareness
Reduce incomplete rates of QA orders due to real time updates
Reduce Back On/FNP (Off for Non Payment) orders due to Credit Card payments
Reduction in CGI's incomplete rates due to Call Ahead feature

Physical Description:

The following software need to be migrated or adapted to achieve this goal:
Replace the windows PACER MDT with a PACER Mobile application (650)
Replace iGuidance with a new platform to provide:
visual situational awareness (641)
automate route re- optimization (auto re-route) for field technicians (129)
Develop a mobile version of the Aclara's STAR Programmer software and change the Programming coil interface from USB
to Bluetooth or other untethered means (Advanced Meter)

Migration to Smartphones / mobile platform will allow the development of the following capabilities:
Use of video for remote assistance (645)
Work Order management on smart phone (650)
Customer call ahead to reduce CGI ("Can't Get In" – Repeat Orders) rates (61)
Near Real Time QA Inspections (111)
Credit Card Payments via Bill Matrix (254)

Project Justification:

The objective is to replace current MDTs with Smartphones to reduce the total cost of ownership. Moving to a modern
mobile platform will enable new, value-added functionality that will improve efficiency and customer satisfaction.
The project scope includes the following FoF submissions: 3-650, 3-61, 3-129, 3,641, 3-645, 3-254, 4-111

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00785.0

Category: B. CS - Field

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00785A - 19108 FoF - CSF PACER Mobile Platform

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00785A**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00785.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00785A - 19108 FoF - CSF PACER Mobile Platform
Workpaper Detail:	00785A.001 - 19108 FoF - CSF PACER Mobile Platform

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	867	0	0
Non-Labor	2,559	0	0
NSE	0	0	0
Total	**3,426**	**0**	**0**
FTE	7.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00785.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00785A - 19108 FoF - CSF PACER Mobile Platform
Workpaper Detail:	00785A.002 - 19108 FoF - CSF PACER Mobile Platform

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	296	0
Non-Labor	0	3,966	0
NSE	0	0	0
Total	**0**	**4,262**	**0**
FTE	0.0	2.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00785.0
Category:	B. CS - Field
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00785A - 19108 FoF - CSF PACER Mobile Platform
Workpaper Detail:	00785A.003 - 19108 FoF - CSF PACER Mobile Platform

In-Service Date: 06/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	101
Non-Labor	0	0	1,490
NSE	0	0	0
Total	**0**	**0**	**1,591**
FTE	0.0	0.0	0.9

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00754E - 81499 MSA INSPECTION PROJECT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	B. CS - Field
Category-Sub:	3. Mandated
Workpaper Group:	00754E - 81499 MSA INSPECTION PROJECT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	328	0	0
Non-Labor	Zero-Based	0	0	0	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	328	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0

Business Purpose:

The objective of the MSA Inspection Project is to establish the business process for the MSA inspections as required by DOT CFR 192.481, modify/enhance affected IT applications to accommodate the new business process, define and set up the organiza tional structure for the MSA Inspection workforce and ensure all affected groups are informed and ready for SCG to start the MSA inspections in Q1 2016.

Physical Description:

Route creation.
Inspection Cycle.
Notification Process.
ART System Work Assignment.
Interface Processes (CIS > PACER, PACER MF > PACER MDT, ART > PACER).
Post Inspection to Facility Folder (Service Request).
Download and Process Order.
Update MPO /FARO Window.
Handling and Logic for Partial/Remnant Routes.
MSA Work Queue.
Aging Reports & DART Reporting.
Provision of MDT and vehicle hardware.

Project Justification:

Compliance with DOT federal regulation.
Existing meter reading system (MVRS) and AMIGO are obsolete and unable to support this MSA Inspection process. This project will integrate the inspection process into SCG's current C/Svc field systems which can be enhanced to meet our compliance requirements.
Support the implementation of Advanced Meter.
Excerpt below from Advance Meter proceeding (A.08-09-023) from Mark Serrano's testimony (p. III-24):
After the deployment of gas AMI, SoCalGas will conform to the industry standard practice of inspecting above ground pipelines for corrosion every three calendar years. SoCalGas will create special routes for the personnel performing this work and tools will be acquired to facilitate reporting.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	B. CS - Field
Category-Sub:	3. Mandated
Workpaper Group:	00754E - 81499 MSA INSPECTION PROJECT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00754E**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	B. CS - Field
Category-Sub:	3. Mandated
Workpaper Group:	00754E - 81499 MSA INSPECTION PROJECT
Workpaper Detail:	00754E.001 - 81499 MSA INSPECTION PROJECT

In-Service Date: 11/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	328	0	0
Non-Labor	0	0	0
NSE	0	0	0
Total	**328**	**0**	**0**
FTE	2.9	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00754C - 84291 PACER OCS ORDER REPRIOR PH1

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00754C - 84291 PACER OCS ORDER REPRIOR PH1

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	208	0	0
Non-Labor	Zero-Based	0	0	0	0	0	232	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	440	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0

Business Purpose:

The purpose for Phase I of this project is to improve the Customer Services Field Dispatch (PACER) work order scheduling and management, providing the ability to better and more granularly prioritize work based on order types, for all SCG CSF Company generated orders: MSA Inspections and Advanced Meter have added substantial maintenance and compliance follow-up work order types, many requiring due-by-dates, impacting Billing and Compliance. This Project will provide PACER Dispatch views of those work order streams, further enabling compliance aging and Dispatch and Routing capabilities for these orders. Following design criteria, a Summary Screen for order types, volumes, an overall totals summary, with drill down capabilities within the Regions, Districts, Section and orders for dispatching, scheduling and routing will be delivered. The intent of Phase I of the project is to provide PACER system visibility for all Company generated maintenance and compliance work order processing in order to effectively manage the increasing volume and CCC user visibility in CIS for pending maintenance work in folder history.

Physical Description:

Centralize the increase in compliance (MSA) and other company generated maintenance work threads (AM, PMC) to provide visibility and workload balance in PACER for CSF Dispatch Operations.
Creation of company generated maintenance and compliance orders for Customer Services Field for unscheduled/pending orders.

Project Justification:

Providing centralized view of all pending company generated work.
Provide aging & Prioritization.
Integrate CSF availability.
Optimize operations work by reducing manual work effort.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00754C - 84291 PACER OCS ORDER REPRIOR PH1

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00754C**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00754.0

Category: B. CS - Field

Category-Sub: 4. Business Optimization

Workpaper Group: 00754C - 84291 PACER OCS ORDER REPRIOR PH1

Workpaper Detail: 00754C.001 - 84291 PACER OCS ORDER REPRIOR PH1

In-Service Date: 03/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	208	0	0
Non-Labor	232	0	0
NSE	0	0	0
Total	440	0	0
FTE	1.8	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00784B - 19109 FoF - Energy Diversion**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784B - 19109 FoF - Energy Diversion

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	469	234	0
Non-Labor	Zero-Based	0	0	0	0	0	319	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	788	234	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.1	2.0	0.0

Business Purpose:

Visibility to Energy Diversion Orders and general awareness to MTU alarms, is a strategic priority to manage suspected customer facilities with diversion conditions. Implementation of an Energy Diversion order will allow us to implement business and system processes across multiple organizations to better document, track, and manage energy diversion cases, such as:
• Monitored Consumption – Facilities with indication of occupancy where customers have failed to establish service after moving into a SoCalGas facility. Escalation processes will transition these facilities into a Chronic Vacant with consumption category.
• Unauthorized Turn/Ons – Facilities with signs of consumption after hard-closing the meter.
• Tampering – Facilities with verified MTU Alerts and anomalous gas consumption during an MTU alert event.
• Bypass – Facilities suspected of diverting the path of gas without authorization.
• Suspected Diversion and Tampering – Facilities reported by other processes; MSA Inspections, On-Cycle Bill Reads.

Physical Description:

Develop an Energy Diversion program, required to effectively manage, track, and report energy diversion cases. Enhancements to CIS will provide visibility to Customer Contact Center, High Bill Investigation, Special Investigations, Set Desks, Billing, and Collections in support of new processes to manage operational activities at these facilities. Enhancements to PACER Desktop, ART, and PACER MDT will ensure Diversion Mitigation orders are assigned and completed by specially trained Energy Technical Residential field employees.

Project Justification:

Energy Diversion visibility will provide valuable situational awareness to office and field employees; thus allowing heightened caution and increase safety of our employees in the field.
 - Awareness to office and field employees will help implement business processes regarding facilities with suspected diversion conditions.
 - An Energy Diversion Order will gain CSF efficiencies and increase capacity by targetting the customer facilities with higher probabilities of diversion, in order to process more investigations. Enhanced processes will streamline information and reduce manual input to help manage the multiple sources of Energy Diversion leads, such as chronic vacant, MSA inspection orders, and tamper alerts.
 - The program will provide critical awareness to the Advanced Meter Network Operations to help identify faulty MTUs.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784B - 19109 FoF - Energy Diversion

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784B**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: B. CS - Field

Category-Sub: 4. Business Optimization

Workpaper Group: 00784B - 19109 FoF - Energy Diversion

Workpaper Detail: 00784B.001 - 19109 FoF - Energy Diversion

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	469	0	0
Non-Labor	319	0	0
NSE	0	0	0
Total	788	0	0
FTE	4.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784B - 19109 FoF - Energy Diversion
Workpaper Detail:	00784B.002 - 19109 FoF - Energy Diversion
In-Service Date:	05/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	234	0
Non-Labor	0	0	0
NSE	0	0	0
Total	**0**	**234**	**0**
FTE	0.0	2.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	300	172	537
Non-Labor	Zero-Based	0	0	0	0	0	0	372	1,344
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	300	544	1,881
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.6	1.5	4.7

Business Purpose:

The main driver for this project is improved Customer Services Field order scheduling and management, providing the ability to better and more granularly prioritize work based on order type, for all SCG CSF order types. Customer Services' O&M budget is expected to remain aggressive, with the need for more efficient and effective schedule balancing for all fielded work orders, including customer-driven orders (CES), Billing, Collections (Revenue), post-Advanced Meter maintenance, regulatory (PMC/REG), Meter Set (Builder Services) and other categories and order types. The current PACER Order Completion Schedule manages order types by "Categories" rather than targeted order types/priorities; i.e., New SET Meter orders, with an identified imbalance of current order categories. CSF Order Category assignments have not changed in CIS/PACER systems in approximately 15 years and are in need of updating to reflect current business conditions. It is estimated that 2350-3850 customer-generated calls/orders can be moved from CCC/CSR's to the IVR and Web Customer channels. In addition to creating more granular order categories for improved order prioritization, this project will enable consistent handling of water heater orders across web, phone and IVR channels.

Physical Description:

The scope of the PACER OCS Order Re-Prioritization Project is to enable more granular work order management in SCG's CSF Dispath Offices, by order type, eliminating Order Categories.   The increased granularity will also enable the re-channeling of Water Heater orders to self-service channels.   The Project will include reviewing/addressing employee availabity calculations, order on-premises times, drive times, etc., comparing order volumes, which make up the entire OCS PACER Program.

Project Justification:

Increased customer satisfaction, improved emergency response time, reduction in unplanned field overtime (possibly savings), targeting specific orders, rather than Categories, a reduction in schedule overrides when schedules are full, and providing Disaptch with methods to strategically manage Company and Customer priorities. Savings and Benefits, Customer Experience, Work Order and WorkForce efficiencies; managing/avoiding unplanned field overtime and Customer order priority strategy improvements, to be defined in Business Case.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784D**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: B. CS - Field

Category-Sub: 4. Business Optimization

Workpaper Group: 00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

Workpaper Detail: 00784D.001 - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	300	0	0
Non-Labor	0	0	0
NSE	0	0	0
Total	300	0	0
FTE	2.6	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II
Workpaper Detail:	00784D.002 - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	172	0
Non-Labor	0	0	0
NSE	0	0	0
Total	**0**	**172**	**0**
FTE	0.0	1.5	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: B. CS - Field

Category-Sub: 4. Business Optimization

Workpaper Group: 00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

Workpaper Detail: 00784D.003 - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	537
Non-Labor	0	0	538
NSE	0	0	0
Total	**0**	**0**	**1,075**
FTE	0.0	0.0	4.7

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II
Workpaper Detail:	00784D.004 - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II
In-Service Date:	12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	372	0
NSE	0	0	0
Total	**0**	**372**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	B. CS - Field
Category-Sub:	4. Business Optimization
Workpaper Group:	00784D - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II
Workpaper Detail:	00784D.005 - 19111 FoF - PACER OCS - Order Re-Prioritization Project Phase II

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	0	806
NSE	0	0	0
Total	0	0	806
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	C. CS - Information
Workpaper:	VARIOUS

Summary for Category: C. CS - Information

| | In 2016$ (000) | | | |
| | Adjusted-Recorded | Adjusted-Forecast | | |
	2016	2017	2018	2019
Labor	0	1,518	1,677	2,085
Non-Labor	0	2,946	4,833	10,398
NSE	0	0	0	0
Total	**0**	**4,464**	**6,510**	**12,483**
FTE	0.0	13.2	14.4	18.1

00774H 19048 Data Driven Customer Communications

Labor	0	0	500	284
Non-Labor	0	0	1,718	1,918
NSE	0	0	0	0
Total	**0**	**0**	**2,218**	**2,202**
FTE	0.0	0.0	4.3	2.5

00774L 19053 My Account Additional Self-Service Features and Transactional Improvements

Labor	0	0	119	1,063
Non-Labor	0	0	815	5,280
NSE	0	0	0	0
Total	**0**	**0**	**934**	**6,343**
FTE	0.0	0.0	1.0	9.2

00774M 19054 My Account Customer Engagement Improvements

Labor	0	0	175	264
Non-Labor	0	0	1,206	1,808
NSE	0	0	0	0
Total	**0**	**0**	**1,381**	**2,072**
FTE	0.0	0.0	1.5	2.3

00774N 19055 Optimizing Self-Service Payment Extensions

Labor	0	0	256	0
Non-Labor	0	0	230	0
NSE	0	0	0	0
Total	**0**	**0**	**486**	**0**
FTE	0.0	0.0	2.2	0.0

00774O 19057 Socalgas.com/My Account Alignment

Labor	0	0	244	474
Non-Labor	0	0	696	1,392
NSE	0	0	0	0
Total	**0**	**0**	**940**	**1,866**
FTE	0.0	0.0	2.1	4.1

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Category: C. CS - Information

Workpaper: VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00774T 84285 CUSTOMER EXPERIENCE				
Labor	0	1,059	0	0
Non-Labor	0	2,228	0	0
NSE	0	0	0	0
Total	**0**	**3,287**	**0**	**0**
FTE	0.0	9.2	0.0	0.0
00754A 84303 AB802 Building Benchmarking				
Labor	0	193	0	0
Non-Labor	0	418	0	0
NSE	0	0	0	0
Total	**0**	**611**	**0**	**0**
FTE	0.0	1.7	0.0	0.0
00754F 19130 GT-NC Rate Changes				
Labor	0	256	383	0
Non-Labor	0	220	168	0
NSE	0	0	0	0
Total	**0**	**476**	**551**	**0**
FTE	0.0	2.2	3.3	0.0
00774W 84310 SOCALGAS.COM TRANSACTIONAL AND REGULATOR				
Labor	0	10	0	0
Non-Labor	0	80	0	0
NSE	0	0	0	0
Total	**0**	**90**	**0**	**0**
FTE	0.0	0.1	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774H - 19048 Data Driven Customer Communications

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774H - 19048 Data Driven Customer Communications

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	500	284
Non-Labor	Zero-Based	0	0	0	0	0	0	1,718	1,918
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**2,218**	**2,202**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	4.3	2.5

Business Purpose:

Improve the customer experience and overall outbound marketing touchpoint effectiveness by delivering more relevant, personalized, engaging, and responsive transactional and triggered emails.
  * Email content includes payment reminders, alerts to better manage usage, cross-sell recommendations for EE, CARE and non-tariff programs and services, information to help drive operational efficiencies from increased self-service (deflected CCC calls), paperless adoption, reduced general billing and HBI calls, decreased fielded HBIs and CGIs, and ongoing customer rate education and safety communication.
  * By delivering more engaging and tailored emails, along with improved deliverability, customer engagement and value will increase, thereby generating higher click through rates and conversion rates.
  * Setting up the infrastructure for delivering smarter, tailored, flexible, responsive outbound customer communications is a long-term investment in the customer experience and marketing communications roadmap.

Physical Description:

  * Phase 1: Bill Tracker Alerts (7.2MM /year) & Bill Ready Notifications (30MM/year) & Foundational technologial improvements; timing 6/1/17 - 5/31/18
  * Phase 2: Bill Tracker Alerts (7.2MM / year)
  * Phase 3: EZ Enroll emails (1.7MM/year), My Acct emails (6.8MM/year, of which 3 emails comprise 85% of volume), new "Welcome" My Account email, new appointment reminders (My Acct and non My Act), & wrong address turn-on emails; email deliverability enhancements; timing 4/1/18 - 12/31/18
(2) Features / Functionality:
  * Include tailored, rule-based content, images, & links; optimize for mobile; enable customized thresholds for alerts (e.g., frequency or dollar amount triggers); facilitate "bundling" of online tools thru BTA auto-enrollment; retain BTA enrollment when customers transfer; increase accuracy of online tools (e.g., BTA for LPP situation); align BTAs to billig cycle; introduce local weather data to help customers correlate usage patterns
(3) Customers / channels:
  * Both Residential and C/I customers; My Account & Business My Account
(4) Other:
  * Relevant tracking and reporting, to facilitate tailored treatments, and improve marketing effectiveness; testing tools; CSR ability to view personalized data within emails

Project Justification:

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774H - 19048 Data Driven Customer Communications

(1) Improved customer experience:
 * Increased customer understanding of usage and bills
 * More personal, relevant, and engaging email content
 * Anywhere, anytime, any device email display
 * Ability to tailor email preferences (e.g., BTA frequency and thresholds)
(2) Improved SCG reputation
 * Demonstrates more innovative, customer-centric, tailored treatment approach
 * Improved accuracy of alerts (e.g., custom LPP BTA)
(3) Other benefits
 * Ability for CSRs to view personalized data in emails, can be leveraged for future projects
 * Better tracking ability, to improve marketing effectiveness
 * Inclusion of localized weather data can be leveraged for future projects

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774H - 19048 Data Driven Customer Communications

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774H**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774H - 19048 Data Driven Customer Communications
Workpaper Detail:	00774H.001 - 19048 Data Driven Customer Communications

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	500	0
Non-Labor	0	1,374	0
NSE	0	0	0
Total	0	1,874	0
FTE	0.0	4.3	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: C. CS - Information

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774H - 19048 Data Driven Customer Communications

Workpaper Detail: 00774H.003 - 19048 Data Driven Customer Communications

In-Service Date: 10/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	284
Non-Labor	0	0	1,534
NSE	0	0	0
Total	**0**	**0**	**1,818**
FTE	0.0	0.0	2.5

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774H - 19048 Data Driven Customer Communications
Workpaper Detail:	00774H.004 - 19048 Data Driven Customer Communications

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	344	0
NSE	0	0	0
Total	0	344	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774H - 19048 Data Driven Customer Communications
Workpaper Detail:	00774H.006 - 19048 Data Driven Customer Communications

In-Service Date: 10/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	0	384
NSE	0	0	0
Total	0	0	384
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774L - 19053 My Account Additional Self-Service Features and Transactional
Improvements**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774L - 19053 My Account Additional Self-Service Features and Transactional Improvements

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	119	1,063
Non-Labor	Zero-Based	0	0	0	0	0	0	815	5,280
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	934	6,343
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.0	9.2

Business Purpose:

This project will enhance and expand self-service transactions supported by My Account. For example, our Start and Transfer Service Orders in My Account are high volume transactions that show great promise for growth. Analysis by various teams has shown that there are various impactful ways of increasing completion rates for these two transactions. These series of enhancements focus on removing some major roadblocks currently inherent in these transactions. Aside from making each transaction shorter and more concise, we are focusing on raising the confidence level of customers by providing newly found important information that are causing frequent drop-offs and calls to the CCC.

In addition to improving this major transaction, we also need to finish building out some of the other major transactions for My Account. Payment Extension in Residential My Account should also be offered Outside of My Account alongside the other 4 major transactions. Also Business My Account should also have the other major self-service transactions along with building a more effective CSO that is aligned with the various scheduling overrides that the CCC currently implements for our C&I customers.

We are also adding the credit reference letter and service verification letter within My Account. Both of these can be used to drive customers to My Account and to alleviate CCC calls and paper/postage.

Physical Description:

Updates to our existing Residential Start Service order both inside and outside of My Account that will increase the success rates of these orders.

We are also expanding our self-service capabilities by adding the following functions to both inside and outside of My Account: Payment Extension for Residential customers outside of My Account, Payment Extension for Business customers, Start, Stop and a Business specific CSO for Business customers. All of these enhancements and added functionality will be leveraged by the IVR to increase self-service within the IVR channel. We are also adding the Service Verification and Credit Reference letters to My Account.

Project Justification:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: C. CS - Information

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774L - 19053 My Account Additional Self-Service Features and Transactional Improvements

1. Enable customers who are registered and not yet registered with My Account to easily and more efficiently complete a turn-on order and transfer through our online channel.

2. Target steps contributing to the largest amount of customer drop-offs/digital leakage and enhance the online experience to reduce customer frustration and friction. These changes will also result in further improvements for the experience on mobile devices (i.e. Address Look-Up and Address Validation).

3. Assist in call deflection at the CCC by helping to reduce online user error and customer doubt (increase customer confidence in order) by providing more relevant customer content (FAQs)

4. Adding additional functions to Residential and Business My Account will help to drive My Account adoption and continue to meet the expectation of customers that we provide more of our services online.

5. IVR channel will be able to leverage new web services to further enhance and optimize the channel which will add to the overall benefits. This also promotes cross channel consistency for an improved customer experience.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774L - 19053 My Account Additional Self-Service Features and Transactional Improvements

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00774L

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774L - 19053 My Account Additional Self-Service Features and Transactional Improvements
Workpaper Detail:	00774L.001 - 19053 My Account Additional Self-Service Features and Transactional Improvements
In-Service Date:	12/31/2018
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	119	0
Non-Labor	0	815	0
NSE	0	0	0
Total	0	934	0
FTE	0.0	1.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774L - 19053 My Account Additional Self-Service Features and Transactional Improvements
Workpaper Detail:	00774L.002 - 19053 My Account Additional Self-Service Features and Transactional Improvements

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	1,063
Non-Labor	0	0	5,280
NSE	0	0	0
Total	**0**	**0**	**6,343**
FTE	0.0	0.0	9.2

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774M - 19054 My Account Customer Engagement Improvements

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774M - 19054 My Account Customer Engagement Improvements

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	175	264
Non-Labor	Zero-Based	0	0	0	0	0	0	1,206	1,808
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**1,381**	**2,072**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.3

Business Purpose:

This project has 2 phases and includes enhancements that address three main concerns. The first is to address NACHA Audit requirements that require us to change our My Account Registration Process. The second is to address lower than normal CES scores that are due to various problems around logging in to My Account.
The third is to deflect calls around various login functions, including resetting passwords and obtaining username information. We are also implementing multi-factor authentication as requested by Information Security to ensure the identity of our customers that log in to My Account.
Another component of this project is to bring more customers to My Account and to increase our paperless numbers by allowing CSR's a quick and easy way of enrolling customers in My Account and Paperless through various orders within CIS.

Physical Description:

Updates to Residential and Business My Account log in, adding the remember username function to socalgas.com, adding the ability to login using different credentials such as Facebook credentials and allowing customers to use their email address as their username.
Redesigning the Forgot Username and Password flows, implementing multi-factor authentication, changing the Registration process by making it easier for customers to register for My Account, and enabling CSR's to easily register customers through various CIS windows. These various enhancements will not only widen the entry point into My Account but will also help to migrate more customers over to self-service.
The first phase of the project will address the login and forgot username/password flows. The second phase will focus on the registration related enhancements including the customer driven registration enhancements and the CSR driven registration enhancements.

Project Justification:

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774M - 19054 My Account Customer Engagement Improvements

1. Enable My Account customers to make payments, continue to increase self-service for major transactions (Start, Transfer, CSO, Stop, Payment Arrangements), increase electronic payments and paperless rates by updating critical roadblocks on entry to My Account.

2. Assist in call deflection at the CCC by cutting down on online technical and user errors.

3. Improve the Log In and Registration customer experience by making the process more efficient and effective. Aim to have fewer steps offered to users and fewer errors performed by users. This also benefits the mobile experience

4. Comply with NACHA Audit recommendation of making the My Account Registration process more secure.

5. Improve Customer Engagement Survey CES scores and OpinionLab Feedback (NPS and Overall Ratings) by focusing on these areas which have the most negative scores.

6. CSR initiated My Account Registration and Paperless enablement will establish My Account access easily and efficiently for a customer which should improve customer satisfaction and allow them to more easily engagement with us through our digital channel.

7. Implement multi-factor authentication per the request of Information Security to ensure the identity of our users when logging in to My Account.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: C. CS - Information

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774M - 19054 My Account Customer Engagement Improvements

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774M**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774M - 19054 My Account Customer Engagement Improvements
Workpaper Detail:	00774M.001 - 19054 My Account Customer Engagement Improvements

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	175	0
Non-Labor	0	1,206	0
NSE	0	0	0
Total	**0**	**1,381**	**0**
FTE	0.0	1.5	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774M - 19054 My Account Customer Engagement Improvements
Workpaper Detail:	00774M.002 - 19054 My Account Customer Engagement Improvements

In-Service Date: 09/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	264
Non-Labor	0	0	1,808
NSE	0	0	0
Total	0	0	2,072
FTE	0.0	0.0	2.3

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774N - 19055 Optimizing Self-Service Payment Extensions

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774N - 19055 Optimizing Self-Service Payment Extensions

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	256	0
Non-Labor	Zero-Based	0	0	0	0	0	0	230	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**486**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0

Business Purpose:

While payment arrangements and payment extensions (PA/PE) are a large percent of the overall self-serve rate across the customer facing channels, the number of PA/PE calls handled by CSRs is still sizeable. This proposal is to maximize the PA/PE self-serve rate and migrate as many customers as possible to self-service.

Physical Description:

The scope of the project is to address seven PA/PE areas that (1) are known to hold customers back from self-serving, (2) ensure channel alignment, or (3) could help customers stay on track to pay their PA/PE.

Project Justification:

Improved customer experience, increased self-service, channel alignment, improved real time customer communications, and simplified business rules.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: C. CS - Information

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774N - 19055 Optimizing Self-Service Payment Extensions

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774N**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774N - 19055 Optimizing Self-Service Payment Extensions
Workpaper Detail:	00774N.001 - 19055 Optimizing Self-Service Payment Extensions

In-Service Date: 10/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	256	0
Non-Labor	0	230	0
NSE	0	0	0
Total	0	486	0
FTE	0.0	2.2	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774O - 19057 Socalgas.com/My Account Alignment**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774O - 19057 Socalgas.com/My Account Alignment

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	244	474
Non-Labor	Zero-Based	0	0	0	0	0	0	696	1,392
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	940	1,866
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.1	4.1

Business Purpose:

Currently, customer experience across SoCalGas.com and SCG My Account is not aligned: Content is different, look and feel, functionality and engagement models are inconsistent. This creates a fractured customer experience and creates the potential for customer confusion and inefficiencies. Main objective of this project is to address such gaps and provide an excellent customer experience on the Web in support of SCG customer enablement goals.

Physical Description:

Updates to both sites navigation, content offering, copy, page structure, visual design. This requires front end development, some back end development and functional QA testing. Through this we will have aligned and consolidated the content and features across both sites, and applied the SoCalGas.com look and feel on My Account Business and Residential portals.

Project Justification:

Better customer experience on the web channel and customer SAT improvements. Increase in customer self-service transactions and paperless bill and e-pay adoption. Reduction in CSR handle time.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: C. CS - Information

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774O - 19057 Socalgas.com/My Account Alignment

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774O**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774O - 19057 Socalgas.com/My Account Alignment
Workpaper Detail:	00774O.001 - 19057 Socalgas.com/My Account Alignment
In-Service Date:	12/31/2018
Description:	

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	244	0
Non-Labor	0	696	0
NSE	0	0	0
Total	**0**	**940**	**0**
FTE	0.0	2.1	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: C. CS - Information

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774O - 19057 Socalgas.com/My Account Alignment

Workpaper Detail: 00774O.002 - 19057 Socalgas.com/My Account Alignment

In-Service Date: 02/28/2019

Description:

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	474
Non-Labor	0	0	1,392
NSE	0	0	0
Total	0	0	1,866
FTE	0.0	0.0	4.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774T - 84285 CUSTOMER EXPERIENCE

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774T - 84285 CUSTOMER EXPERIENCE

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	1,059	0	0
Non-Labor	Zero-Based	0	0	0	0	0	2,228	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	3,287	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0

Business Purpose:

The Customer Experience Project is focused on improving our customer's experience while utilizing SoCalGas's customer facing systems by removing some barriers to self-service, providing information customers need in a timely manner, and allowing the systems to more quickly adapt to the changing customer needs. The project focuses on enhancing shared services behind customer facing systems (ex. My Account, socalgas.com, Mobile, IVR, etc.). The interfaces of the customer facing systems will be updated as part of this project to take advantage of enhanced common/shared functions.
The objectives of this effort are as follows:
Channel alignment
Omni-channel customer experience
Agility/maintainability, and
Reduced costs through increased customer self-service.

Physical Description:

Enable self-service for close orders that can only be performed with a CSR today (CSA in a business name) and better explain some ineligibility reasons.
Customers will be able to edit existing PA/PE and see if there is a better option prior to cancelling their existing option. In addition the PA/PE will offer to auto pay at the PA/PE due dates via the My Account scheduled payment functionality.
ANI match is the easiest way for a customer to self-serve in the IVR. By allowing customers with multiple accounts associated with their phone number to easily ANI match (these customers might be managing their parent's/ child's account), it will increase self-service and reduce customer fatigue.
By allowing My Account customers to leverage Pay-by-Phone using the bank accounts they already have, it will improve the experience for those that try today and reduce the paper processing costs. Making the FNP amount available to the self-serve systems will help with both the collections process (ex. outbound dialing) and getting those customer reinstated.

Project Justification:

Improved customer experience and customers' ability to self-serve.
Align business rules across CSR, IVR and Web channels.
Improve CSR experience and reduce call handle time.
Make payment process more efficient and easier for customers to improve timely payments, reduce collections, and reduce customer calls.
Improve customer communication (#27) through consistent transaction confirmations.
Supports 5 year Channel Service Plan.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774T - 84285 CUSTOMER EXPERIENCE

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774T**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774T - 84285 CUSTOMER EXPERIENCE
Workpaper Detail:	00774T.001 - 84285 CUSTOMER EXPERIENCE

In-Service Date: 09/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	1,059	0	0
Non-Labor	2,228	0	0
NSE	0	0	0
Total	**3,287**	**0**	**0**
FTE	9.2	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00754A - 84303 AB802 Building Benchmarking**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00754A - 84303 AB802 Building Benchmarking

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	193	0	0
Non-Labor	Zero-Based	0	0	0	0	0	418	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	611	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0

Business Purpose:

SCG will leverage existing business process and systems to develop the future system. We will enhance the existing EPA tracker application to support the new AB802 requirements. The enhanced EPA tracker application will provide fully automated support for all "Happy Path" transactions while also monitoring and managing the transactions. A workflow capability will be needed to support the manual handling of transactions that fall out of the automated process.
The application for manual manipulation of requests and CISR form as well as workflow managed will RSA ARCHER.
Archer has proven capability to support the AB802 requirements as defined by the business and is currently supporting SDG&E capabilities. This may lead to leveraging some of the SDG&E work on the Archer workflows definition. The Archer team can also provide development and maintenance support.
This project is specifically intended to support SCG's compliance with the provisions of AB802 as well as the proposed City of Los Angeles ordinance for Building Benchmarking.

Physical Description:

Online capabilities through SoCalGas.com to access the program and submit requests.
Initial validation of the form / request during submission.
New CISR submissions will be selected by ARCHER.
Online form with electronic signing capabilities and is stored in the EPA Database.
Enhance EPA Database and EPA Administrator to serve as repository for AB802 request form and CISR.
Enhance EPA tracker to process valid AB802 requests automatically.
This will include:
Validation Rules.
Aggregated whole building usage.
Meter Mapping.

Project Justification:

AB802 was signed into law in October 2015. The overall intent of AB802 is to provide building owners with whole building energy usage data in aggregated form without the need for their tenants' consent.
AB802 also contains the "to code" changes for Energy Efficiency

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00754A - 84303 AB802 Building Benchmarking

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00754A

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00754A - 84303 AB802 Building Benchmarking
Workpaper Detail:	00754A.001 - 84303 AB802 Building Benchmarking
In-Service Date:	07/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	193	0	0
Non-Labor	386	0	0
NSE	0	0	0
Total	579	0	0
FTE	1.7	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00754.0

Category: C. CS - Information

Category-Sub: 3. Mandated

Workpaper Group: 00754A - 84303 AB802 Building Benchmarking

Workpaper Detail: 00754A.002 - 84303 AB802 Building Benchmarking

In-Service Date: 03/31/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	32	0	0
NSE	0	0	0
Total	**32**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00754F - 19130 GT-NC Rate Changes**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00754F - 19130 GT-NC Rate Changes

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	256	383	0
Non-Labor	Zero-Based	0	0	0	0	0	220	168	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	476	551	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.2	3.3	0.0

Business Purpose:

Per CPUC decision D.16-07-008, Curtailment Procedures Settlement Agreement, SoCalGas is mandated to implement a new rate/tariff (GT-NC) and modify current curtailment rules.

Physical Description:

Software changes will be made to SCBS (Specialized Customer Billing System), CCS (Customer Contract System), CIS (Customer Information System) and MCS (Measurement Collection System) to support the tarrif changes required by the decision.

Project Justification:

Failure to comply may result in Rule 1 violation. Competing in-flight and FoF projects may result in lack of resources available for this project.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00754.0

Category: C. CS - Information

Category-Sub: 3. Mandated

Workpaper Group: 00754F - 19130 GT-NC Rate Changes

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00754F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00754F - 19130 GT-NC Rate Changes
Workpaper Detail:	00754F.001 - 19130 GT-NC Rate Changes

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	256	0	0
Non-Labor	220	0	0
NSE	0	0	0
Total	**476**	**0**	**0**
FTE	2.2	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00754F - 19130 GT-NC Rate Changes
Workpaper Detail:	00754F.002 - 19130 GT-NC Rate Changes

In-Service Date: 06/30/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	383	0
Non-Labor	0	168	0
NSE	0	0	0
Total	**0**	**551**	**0**
FTE	0.0	3.3	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774W - 84310 SOCALGAS.COM TRANSACTIONAL AND REGULATOR

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00774W - 84310 SOCALGAS.COM TRANSACTIONAL AND REGULATOR

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	10	0	0
Non-Labor	Zero-Based	0	0	0	0	0	80	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	90	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Business Purpose:

The project will support the creation of an automated batch process to migrate 4,000 regulatory PDFs (filings, decisions, etc.) and update all regulatory URLs and meet compliance. It will also incorporate a solution to have the functionality to add several files to the site at once.
The project will also utilize Responsive Web Design to recreate non-refundable in-scope forms in the new CMS (Oracle Web Center Sites) to provide a consistent user experience across all devices and platforms (e.g. mobile phones, tablets, desktop browsers). The development of the forms will leverage the use of established templates/components, design and content strategy in order to provide a cohesive and consistent brand experience. It will also create a Form Builder Template to create forms more easily without advanced development, as well as a more enhanced archiving tool for auditing.

Physical Description:

Integrate Responsive Design for forms/applications across all devices and platforms.
Accessibility of forms/applications for physically and visually impaired visitors.
Create template to create forms more easily without advanced development.
Integrate Responsive Design regulatory section and PDFs across all devices and platforms.

Project Justification:

Compliance
In order to meet compliance, project migrate 4,000 regulatory PDFs (filings, decisions, etc.) from a server that will soon be decommission to a new server and all regulatory URLs will be updated.
Added functionality will allow us to add several files to the site at once to better meet regulatory deadlines using less resources.
Risk Avoidance
Current CMS, TeamSite is unsupported and vulnerable to failure and can cause Regulatory section and numerous forms outages.
Operational Efficiencies
Reduces disruption of monthly labor required to address existing form and regulatory file maintenance issues with current CMS
New Oracle CMS is easier to use, allows for faster updating or additions to socalgas.com.
Customer Enablement
Responsive design allows a consistent presentation on all devices and platforms (i.e. mobile phones, tablets, Windows Internet Explorer, Safari, Chrome, etc.) and easier to fill out forms for increased self-service submissions and enrollments.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00774W - 84310 SOCALGAS.COM TRANSACTIONAL AND REGULATOR

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774W**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	C. CS - Information
Category-Sub:	3. Mandated
Workpaper Group:	00774W - 84310 SOCALGAS.COM TRANSACTIONAL AND REGULATOR
Workpaper Detail:	00774W.001 - 84310 SOCALGAS.COM TRANSACTIONAL AND REGULATOR
In-Service Date:	01/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	10	0	0
Non-Labor	80	0	0
NSE	0	0	0
Total	90	0	0
FTE	0.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	D. CS - Office Operations
Workpaper:	VARIOUS

Summary for Category: D. CS - Office Operations

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	0	4,018	3,941	7,164
Non-Labor	0	9,172	8,471	16,499
NSE	0	0	0	0
Total	**0**	**13,190**	**12,412**	**23,663**
FTE	0.0	35.0	34.3	62.2

00752A 19043 Seu Call Recording Refresh

Labor	0	153	0	0
Non-Labor	0	2,360	0	0
NSE	0	0	0	0
Total	**0**	**2,513**	**0**	**0**
FTE	0.0	1.3	0.0	0.0

00774C 19045 ACT/CCM Refresh Project

Labor	0	0	307	102
Non-Labor	0	0	0	0
NSE	0	0	0	0
Total	**0**	**0**	**307**	**102**
FTE	0.0	0.0	2.7	0.9

00774D 19046 Billing Projection Engine (Internal BTA Alert)

Labor	0	0	396	0
Non-Labor	0	0	539	0
NSE	0	0	0	0
Total	**0**	**0**	**935**	**0**
FTE	0.0	0.0	3.4	0.0

00774F 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

Labor	0	0	85	85
Non-Labor	0	0	345	345
NSE	0	0	0	0
Total	**0**	**0**	**430**	**430**
FTE	0.0	0.0	0.7	0.7

00774J 19050 IVR Usability Enhancements

Labor	0	0	173	0
Non-Labor	0	0	204	0
NSE	0	0	0	0
Total	**0**	**0**	**377**	**0**
FTE	0.0	0.0	1.5	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	D. CS - Office Operations
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00774K 19051 Major Markets Systems Enhancements				
Labor	0	0	702	1,403
Non-Labor	0	0	3,621	7,243
NSE	0	0	0	0
Total	**0**	**0**	**4,323**	**8,646**
FTE	0.0	0.0	6.1	12.2
00774Q 19059 CTAs Customer Data Exchange - EDI Option				
Labor	0	0	192	243
Non-Labor	0	0	77	88
NSE	0	0	0	0
Total	**0**	**0**	**269**	**331**
FTE	0.0	0.0	1.7	2.1
00774S 84254 SEU CCC WORKFORCE MGMT OPT SOLUTION				
Labor	0	135	0	0
Non-Labor	0	830	0	0
NSE	0	0	0	0
Total	**0**	**965**	**0**	**0**
FTE	0.0	1.2	0.0	0.0
00774Y 19128 CIS Front-end Replacement				
Labor	0	0	1,087	2,301
Non-Labor	0	0	1,375	6,985
NSE	0	0	0	0
Total	**0**	**0**	**2,462**	**9,286**
FTE	0.0	0.0	9.5	20.0
00774Z 19127 MCS Next Generation				
Labor	0	0	0	2,397
Non-Labor	0	0	0	660
NSE	0	0	0	0
Total	**0**	**0**	**0**	**3,057**
FTE	0.0	0.0	0.0	20.8
00784C 19110 FoF - ICDA Phase 3				
Labor	0	215	49	0
Non-Labor	0	1,330	485	0
NSE	0	0	0	0
Total	**0**	**1,545**	**534**	**0**
FTE	0.0	1.9	0.4	0.0
00784H 81470 INTEGRATED CUSTOMER DATA & ANALYTICS				
Labor	0	207	0	0
Non-Labor	0	313	0	0
NSE	0	0	0	0
Total	**0**	**520**	**0**	**0**
FTE	0.0	1.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	D. CS - Office Operations
Workpaper:	VARIOUS

| | In 2016$ (000) | | | |
| | Adjusted-Recorded | Adjusted-Forecast | | |
	2016	2017	2018	2019
00754B 84280 MY ACCOUNT FOR SCBS BILLED CUSTOMERS (MA				
Labor	0	689	0	0
Non-Labor	0	655	0	0
NSE	0	0	0	0
Total	**0**	**1,344**	**0**	**0**
FTE	0.0	6.0	0.0	0.0
00754D 84207 SEU CCC GENESYS REFRESH				
Labor	0	80	0	0
Non-Labor	0	289	0	0
NSE	0	0	0	0
Total	**0**	**369**	**0**	**0**
FTE	0.0	0.7	0.0	0.0
00774B 19044 Credit and Coll Optimization Phase 4				
Labor	0	535	545	633
Non-Labor	0	31	482	1,178
NSE	0	0	0	0
Total	**0**	**566**	**1,027**	**1,811**
FTE	0.0	4.7	4.7	5.5
00774E 84322 CIS Segregation of Duties (SoD) Project				
Labor	0	178	228	0
Non-Labor	0	198	27	0
NSE	0	0	0	0
Total	**0**	**376**	**255**	**0**
FTE	0.0	1.5	2.0	0.0
00774G 84324 Residential 2 PSI Service				
Labor	0	307	0	0
Non-Labor	0	485	0	0
NSE	0	0	0	0
Total	**0**	**792**	**0**	**0**
FTE	0.0	2.7	0.0	0.0
00784A 19107 FoF - CIS Pre-Bill AMI Enhancement				
Labor	0	120	0	0
Non-Labor	0	538	467	0
NSE	0	0	0	0
Total	**0**	**658**	**467**	**0**
FTE	0.0	1.0	0.0	0.0
00784E 19112 FoF - Paperless Initiatives				
Labor	0	988	89	0
Non-Labor	0	1,512	798	0
NSE	0	0	0	0
Total	**0**	**2,500**	**887**	**0**
FTE	0.0	8.6	0.8	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Category: D. CS - Office Operations

Workpaper: VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00784F 19113 FoF - Performance Management for office staff (Nice)				
Labor	0	411	88	0
Non-Labor	0	631	51	0
NSE	0	0	0	0
Total	**0**	**1,042**	**139**	**0**
FTE	0.0	3.6	0.8	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00752A - 19043 Seu Call Recording Refresh**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00752.0
Category:	D. CS - Office Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00752A - 19043 Seu Call Recording Refresh

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	153	0	0
Non-Labor	Zero-Based	0	0	0	0	0	2,360	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**2,513**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0

Business Purpose:

The shared NICE call recording system for SoCalGas and SDGE has approached the sunset date of 02/01/2016 and will be approaching end of expansion date and end of maintream software support on 08/01/2017. The proposed option will be to refresh all of the components of the Call recording system.

Physical Description:

Scope of the project will be to refresh the current shared Enterprise call recording system, extending the life of the system will benefit the CCC's, Gas Control, Gas Scheduling, E&FP, SoCalGas Dispatch offices and Grid Control. Credit and Collections group in Monterey Park has requested their extensions be recorded using this system.

Project Justification:

Upgrading the system will ensure that the call recording system is supportable by the manufacturer. System reliability and availability will be assured with continued manufacturer support.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00752.0
Category:	D. CS - Office Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00752A - 19043 Seu Call Recording Refresh

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00752A**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00752.0
Category:	D. CS - Office Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00752A - 19043 Seu Call Recording Refresh
Workpaper Detail:	00752A.001 - 19043 Seu Call Recording Refresh

In-Service Date: 11/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	153	0	0
Non-Labor	2,360	0	0
NSE	0	0	0
Total	2,513	0	0
FTE	1.3	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774C - 19045 ACT/CCM Refresh Project

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774C - 19045 ACT/CCM Refresh Project

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	307	102
Non-Labor	Zero-Based	0	0	0	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**307**	**102**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.9

Business Purpose:

Replace our CCM (Corporate Credit Manager) vendor application and refresh our ACT (Aggregated Customer Tool) in-house application. Our CCM and ACT applications were placed in service in 2003. The CCM software was purchased to store credit and collection information for various utility programs at a consolidated customer level. In order to feed CCM relevant data, the ACT system was created to combine information from various sources, perform credit calculations and consolidate this information at a customer level. This consolidated customer information is then passed from ACT to CCM on a daily basis.

For the last (13) years both applications have not had a major technology refresh and require older technologies to operate. For example, CCM requires Windows 2003 server with the clients utilizing terminal services to access. Our CCM vendor released a new web-based version of this application last year which is not compatible with our current CCM software version.

Our ACT in-house web based application was written in Coldfusion programming language that requires an upgrade to support the various web browsers in a Win10\O365 desktop environment. ACT will only work with an IE11 web browser using compatibility mode and currently does not support a Win10\O365 MS-Edge or Google Chrome browsers.

Physical Description:

Replace our vendor application CCM by integrating its functionality into our ACT in-house application. This would include adding new modules to ACT to store our credit exposure, credit lines, security, user notes, agreement details and general customer information that is currently in CCM. In addition, address Win10\O365 issues and fix other items such as expanding our ACT password that is currently limited to (10) characters. This could lead to a re-write of our ACT application potentially using a different programming language than Coldfusion. Also, the new replacement application should be able to support all IT standards including infrastructure, Information Security and Data Privacy.

Project Justification:

¦ Elimination of our CCM vendor annual software license and maintenance costs.
¦ Reduction in IT support and hardware costs to maintain a Windows 2003 server environment for CCM.
¦ Reduction in the risk of system failure due to older application servers.
¦ Reduction in the risk of our database password being compromised
  (Risk Exception 1397879 is set to expire on 4/28/2017).
¦ Reduction in the risk that our vendor will no longer support this version of the software.
¦ Increase the ability of the business to add to the CCM functionality that is not available in a vendor based solution.
¦ Cost avoidance of future upward pressures to manually perform system functions if ACT\CCM were to fail.
¦ Meet all IT standards including infrastructure, Information Security and Data Privacy.
¦ Reduction in physical server maintenance by leveraging virtual environment.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774C - 19045 ACT/CCM Refresh Project

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774C**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00774C - 19045 ACT/CCM Refresh Project

Workpaper Detail: 00774C.001 - 19045 ACT/CCM Refresh Project

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	307	0
Non-Labor	0	0	0
NSE	0	0	0
Total	**0**	**307**	**0**
FTE	0.0	2.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774C - 19045 ACT/CCM Refresh Project
Workpaper Detail:	00774C.002 - 19045 ACT/CCM Refresh Project

In-Service Date: 03/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	102
Non-Labor	0	0	0
NSE	0	0	0
Total	**0**	**0**	**102**
FTE	0.0	0.0	0.9

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774D - 19046 Billing Projection Engine (Internal BTA Alert)**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774D - 19046 Billing Projection Engine (Internal BTA Alert)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	396	0
Non-Labor	Zero-Based	0	0	0	0	0	0	539	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	935	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0

Business Purpose:

The purpose of this project is to bring in-house all aspects of the BTA Alerts. In particular, to develop a Billing Projection Engine that could be used for BTA alert calculations and other future strategic initiatives.

Physical Description:

Develop a Billing Projection Engine that calculates each customer's Bill-to-Date and Projected Next Bill at certain points in a given account's bill cycle and delivers an alert to the customer. Enhance existing Bill Tracker Alert modules to use calculations from the new engine as opposed to Aclara's BTA engine.

Project Justification:

• Developing an internal BTA alert engine will enable SCG to scale the BTA alert offering to a larger volume of customers (currently, the BTA Alert is limited to about 600k customers due to Aclara environment limitations).
• The expansion of the current BTA offering to accommodate a much greater portion of our customer base is beneficial as the BTA has proven to have a direct, positive impact on Customer Experience. In the last JD Power's study, SoCalGas' Customer Satisfaction score on the Billing and Payment index rose 5 points and was directly attributed to 8% of the My Account survey respondents being enrolled in Bill Tracker Alerts. Additionally, the BTA was prominently noted by customers in recent "High Bill" focus groups as being highly valued to help them avoid surprises in their winter bills.
• An internal BTA engine will provide more flexibility to enable future functional enhancements (e.g., tailored Bill Tracker Alerts targeted to different customer segments, such as LPP, new alert types, etc.)
• It will also eliminate some of the current BTA customer eligibility limitations, such as being able to offer BTAs to customers with more complex rate structures, etc.
• It will also increase internal confidence re: the reliability and accuracy of the alert calculations, eliminating the need to rely on manual auditing and testing of third party calculations (which has proven to be challenging since we do not have access to Aclara's proprietary calculation engine rules).
• It will remove the BTA dependency on Aclara and provide more flexibility in determining the strategy for the next generation of Ways to Save (WTS) tools in My Account (currently the BTA is a bundled offering of the Aclara suite of tools).

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774D - 19046 Billing Projection Engine (Internal BTA Alert)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774D**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774D - 19046 Billing Projection Engine (Internal BTA Alert)
Workpaper Detail:	00774D.001 - 19046 Billing Projection Engine (Internal BTA Alert)

In-Service Date: 11/30/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	396	0
Non-Labor	0	539	0
NSE	0	0	0
Total	**0**	**935**	**0**
FTE	0.0	3.4	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group

00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	85	85
Non-Labor	Zero-Based	0	0	0	0	0	0	345	345
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	430	430
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7

Business Purpose:

Implement additional Credit & Collections optimization and efficiency improvements focusing on key Collections processes, etc. to improve collections and reduce write-offs.

Physical Description:

• With AM ability to get an immediate read, the closing bill (if FNP) should be issued right after close, instead of waiting 21 cycles.
• Optimize Field Collect or Close notice/order prioritization and routing, based on behavior scoring, resulting in more efficient Field collections and help promote better customer payment practices.
• Print 41.6 Notice at base/district. Avoids manually delivered orders from the regions to bases (courrier/time savings). Forms are currently printing on old printers than can break down.
• Collection, Active/Closed Bill Notices (including form 41.6) redesign (including rewording and increased notice effectiveness) to improve the current 75% of customers who receive a late notice, but don't pay and require a truckroll to collect or close.

Project Justification:

Achieve higher collections rate with less operational impact.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)
Workpaper Detail:	00774F.001 - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	85	0
Non-Labor	0	207	0
NSE	0	0	0
Total	0	292	0
FTE	0.0	0.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)
Workpaper Detail:	00774F.002 - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

In-Service Date: 07/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	85
Non-Labor	0	0	207
NSE	0	0	0
Total	**0**	**0**	**292**
FTE	0.0	0.0	0.7

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)
Workpaper Detail:	00774F.003 - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	138	0
NSE	0	0	0
Total	**0**	**138**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774F - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)
Workpaper Detail:	00774F.004 - 19047 Collections Optimization Phase 5 (Misc. Collections Initiatives)
In-Service Date:	07/31/2019
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	0	138
NSE	0	0	0
Total	0	0	138
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774J - 19050 IVR Usability Enhancements**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774J - 19050 IVR Usability Enhancements

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	173	0
Non-Labor	Zero-Based	0	0	0	0	0	0	204	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**377**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0

Business Purpose:

Now that the IVR is running in the new Genesys environment and before the Customer Experience Project enhancements are fully implemented, the IVR interface requires streamlining to improve the customer experience. The IVR Doctors (IVR interface experts) recommended streamlining the IVR customer facing interface to improve the customer survey results.

Physical Description:

Analyze the usability of the IVR and update the IVR customer facing interface to streamline the customer experience by (1) removing steps from the IVR so customers can more quickly get to their desired tasks, (2) leverage the new Genesys functionality to allow customers to speak their choice (ex. the appliance they need serviced), and (3) prepare for the Customer Experience Project enhancements (ex. more tightly integrate Pay-by-Phone).

Project Justification:

(1) Improve the self-service rate,
(2) improved customer experience,
(3) reduced perceived complexity of the IVR,
(4) reduce the IVR handle time, and (5) improved "Easy To Understand Instructions", "Amount Of Time It Took To Complete Transaction" and "Easy To Use" as measured in the CES scores.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774J - 19050 IVR Usability Enhancements

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774J**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774J - 19050 IVR Usability Enhancements

Workpaper Detail: 00774J.001 - 19050 IVR Usability Enhancements

In-Service Date: 10/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	173	0
Non-Labor	0	204	0
NSE	0	0	0
Total	0	377	0
FTE	0.0	1.5	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774K - 19051 Major Markets Systems Enhancements

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774K - 19051 Major Markets Systems Enhancements

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	702	1,403
Non-Labor	Zero-Based	0	0	0	0	0	0	3,621	7,243
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	4,323	8,646
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	6.1	12.2

Business Purpose:

• SCBS has now been in service for 16+ years. CAT and CCS are in service for 10+ years. The underlying Java version
(1.6) is out-of-support as are many of the other components used by the application. Enhancements to these systems
have become more difficult and it has become harder and costlier to respond to business needs and/or regulatory changes.
• Major Market Billing (non-core accounts) charges calculation logic is composed of many complex formulas and business
rules for billing calculations. These formulas and rules are currently embedded within a large Excel-style spreadsheet
(many of the rules undocumented and not fully understood). This has become increasingly difficult to maintain, manage,
test, and audit.
• The current Excel bill engine is cumbersome and inflexible. A new bill engine is needed to sustain the integrity,
maintainability, accuracy, auditability, and provide agility/flexibility to quickly respond to future business and regulatory
needs.
• The reporting systems used by CAT, CCS and SCBS applications need to be upgraded.
• The future system will optimize the billing functions supporting Major Markets to streamline and automate processes in
the Specialized Customer Billing System (SCBS).

Physical Description:

Major Markets Modernization Includes:
- JDK Upgrade to 1.8 (current version of 1.6 is not supported)
- eSpreadsheet Billing Engine retirement and conversion to flexible and maintainable billing engine
- Ability to update Rules related to the Charges without changing the code
- Add auditability within SCBS to track customer bill updates
- Refactor system integrations and batch processing for billing engine replacement
- WebLogic migration to Tomcat
- Developing a work queue process to enhance quality control, work flow and ensure timely processing of bills
- Expand delivery options of customer bills based on customer preferences
- Prioritizing and balancing work load to match billing analyst capacity and increase timeliness of bills
- Improving workflow related to exceptions/data coming from CCS, CIS etc.
- Converting of 18 COBOL jobs to Java
- Refactoring 128 batch jobs
- JReport upgrade and rationalization of the existing 154 reports

Project Justification:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774K - 19051 Major Markets Systems Enhancements

Major Markets Modernization project will:
- Create a more flexible and agile architecture to manage user workload and quicker implementation of business requirements and regulatory compliance changes which would help avoid any penalties
- Minimize and reduce future licensing costs by moving to open-source frameworks and platforms. Moving to Tomcat is in alignment with long term IT Strategy
- Future proof our billing processes by moving eSpreadsheet Bill engine rules into something more maintainable and understandable by business and IT teams [At present, lot of billing rules are undocumented and not fully understood which causes delays in making any changes. By using a rules engine, the time taken to build the logic related to a charge is expected to reduce by more than ~50%. In 2015, we had 10 Excel related changes. Assume 5 more Java specific changes. We anticipate more rules changes in the future. The architecture will help us achieve those without adding more resources.
- Ensure short and long term stability of our systems to avoid business interruptions [Delays in billing can cause cash flow and operational issues based on the amount of delay. Assume 3 incidents per year. 6 Billing Analysts and IT experts have to work on average of 2 extra days working on the issues.
- Increase customer satisfaction by ensuring billing accuracy and improving email services [Reducing calls to customer service and subsequent billing reviews reduces costs and improves customer satisfaction and enables account executives to focus on increasing business instead of working with customer to resolve billing issues.
- Align technical skillsets within Major Markets group - IT professionals having knowledge of rare specialized technologies always command higher compensation [Technology used presently is outdated and specialized billing rules knowledge and how they are embedded in Excel increases the dependency on few critical resources.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774K - 19051 Major Markets Systems Enhancements

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774K**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774K - 19051 Major Markets Systems Enhancements
Workpaper Detail:	00774K.001 - 19051 Major Markets Systems Enhancements

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	702	0
Non-Labor	0	2,716	0
NSE	0	0	0
Total	**0**	**3,418**	**0**
FTE	0.0	6.1	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774K - 19051 Major Markets Systems Enhancements
Workpaper Detail:	00774K.002 - 19051 Major Markets Systems Enhancements

In-Service Date: 12/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	1,403
Non-Labor	0	0	7,243
NSE	0	0	0
Total	0	0	8,646
FTE	0.0	0.0	12.2

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774K - 19051 Major Markets Systems Enhancements
Workpaper Detail:	00774K.003 - 19051 Major Markets Systems Enhancements

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	905	0
NSE	0	0	0
Total	**0**	**905**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774Q - 19059 CTAs Customer Data Exchange - EDI Option

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Q - 19059 CTAs Customer Data Exchange - EDI Option

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	192	243
Non-Labor	Zero-Based	0	0	0	0	0	0	77	88
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	269	331
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.1

Business Purpose:

- In 2014, with the implementation of CPUC Rule 42, raising the standard of care to be taken when SoCalGas engages in the exchange of customer data including usage.
- Our current method (Email) to exchange data between SCG and the CTAs is not advised by Information Security and it is further compromised by manual intervention required to set up the data.
- The current system was developed over 20 years ago has not been maintained to address changes in our customer service procedures. This has createdd an impact to the routine billing of our customers.

Physical Description:

Use EDI for the file transfer between SoCalGas and the CTAs to be in compliance with security standards to safeguard the protection of customer data and fix current processes to improve data integrity and reduce impact on routine billing of customers.

Project Justification:

Reduction of risk for data breach, compliance with standards and improved controls reduce costs of remediation activities in the event of a breach.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Q - 19059 CTAs Customer Data Exchange - EDI Option

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00774Q

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Q - 19059 CTAs Customer Data Exchange - EDI Option
Workpaper Detail:	00774Q.001 - 19059 CTAs Customer Data Exchange - EDI Option

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	192	0
Non-Labor	0	77	0
NSE	0	0	0
Total	**0**	**269**	**0**
FTE	0.0	1.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Q - 19059 CTAs Customer Data Exchange - EDI Option
Workpaper Detail:	00774Q.002 - 19059 CTAs Customer Data Exchange - EDI Option

In-Service Date: 06/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	243
Non-Labor	0	0	88
NSE	0	0	0
Total	**0**	**0**	**331**
FTE	0.0	0.0	2.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774S - 84254 SEU CCC WORKFORCE MGMT OPT SOLUTION

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774S - 84254 SEU CCC WORKFORCE MGMT OPT SOLUTION

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	135	0	0
Non-Labor	Zero-Based	0	0	0	0	0	830	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**965**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0

Business Purpose:

Deploy a unified Workforce Management, Performance Management and Coaching system on a single Workforce Optimization (WFO) platform (NICE) with enhanced staff forecasting capabilities. Implement different WFM instances for SCG and SDGE.
•Replace Aspect with NICE WFM system and integrate with myTime to enable CSR's to manage their time in the new WFM system
•Upgrade Quality Monitoring and Quality Optimization (QM/QO) with tagging capabilities and additional KPI's
•Replace Nexidia Speech to Text and Analytics with NICE Interaction Analytics (IA)
•Upgrade Merced to current NICE version, decouple SCG from SDGE and update User Interface and Reports
•Integrate PM with WFM, Call Playback, IA and data import from Allconnect and Lead Consultants-Business Object data

Physical Description:

Implementation of WFM system for SDGE and SCG.
Integration of the WFM system with MyTime for SDGE and SCG.
Upgrade QM/OM add Tagging (Desktop Data Extraction and Call Tagging) for SCG.
Replace Nexidia Speech to Text and Analytics with NICE IA for SCG and SDGE.
Upgrade of PM System from version 3.8.4 to 6 for SDGE and SCG.
Separate NICE WFO platforms for SDGE and SCG including WFM, Coaching, Performance Management and Call Recording systems.

Project Justification:

•Support an enhanced coaching culture at by providing management staff tools to identify relevant calls to coach.
•Affirm employees that provide great customer service, thereby improving employee engagement
•Provide a mechanism to respond quickly to unsatisfactory customer interactions
•Reduce the high variability in call handling time which exists today by targeting the right calls
•Provide agents with capability to manage and trade time within the WFM system

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774S - 84254 SEU CCC WORKFORCE MGMT OPT SOLUTION

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774S**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774S - 84254 SEU CCC WORKFORCE MGMT OPT SOLUTION

Workpaper Detail: 00774S.001 - 84254 SEU CCC WORKFORCE MGMT OPT SOLUTION

In-Service Date: 05/31/2017

Description:

See workpaper Description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	135	0	0
Non-Labor	830	0	0
NSE	0	0	0
Total	965	0	0
FTE	1.2	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774Y - 19128 CIS Front-end Replacement

Area:	INFORMATION TECHNOLOGY	
Witness:	Christopher R. Olmsted	
Budget Code:	00774.0	
Category:	D. CS - Office Operations	
Category-Sub:	2. Improving Customer Experience	
Workpaper Group:	00774Y - 19128 CIS Front-end Replacement	

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,087	2,301
Non-Labor	Zero-Based	0	0	0	0	0	0	1,375	6,985
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	2,462	9,286
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	9.5	20.0

Business Purpose:

SoCalGas Customer Information System has been in use for 21 years and has used the same user interface during that extended time period. The software technology used for the current graphical user interface (GUI) is approaching obsolescence and, as a result, is becoming increasingly difficult to maintain and enhance. Resourcing the required skillsets for this technology is also becoming more difficult with a resulting increase in the duration of time required to implement system enhancements necessary to support mandated business changes. Alternative technologies will be evaluated to replace existing software with the expectation that the new software and architecture will result in reduced operating costs and quicker "time to market" for requested system enhancements.

Physical Description:

Current CIS GUI software is VisualAge Smalltalk V8.5.   This software communicates to the IBM mainframe CIS DB2 database via a standard IBM CICS transaction processing architecture. Scope of project will be to replace the Smalltalk "fat client" architecture with a new "thin client" architecture that will most likely consist of a browser based user interface utilizing Java, .Net or a similar technology.

Project Justification:

• Increased agility with business enhancements to the application offers quicker "time to market". With a readily available workforce on the market and more current application development tools, software enhancements will be easier to develop, maintain, test, and implement.
• Positions the CIS system for future expansion into the multiple devices and platforms.   For example, thin client technology can be ported into mobile platforms such as Android, iOS, etc and could eventually be leveraged by a mobile workforce (field technicians, support staff, etc).
• Ongoing application testing throughout the lifecycle can be simplified resulting in increased system reliability and lower associated costs. Automated testing tools currently in use at Sempra companies can be leveraged to improve ongoing testing efforts.
• Complex software distribution management process currently in place to support the fat client architecture will be simplified. Currently a software image is individually distributed to 2,500+ workstations each time a software enhancement is required. A new thin client architecture allows a single image to be posted to a small number of dedicated servers and can be done swiftly and with increased reliability and associated lower costs.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Y - 19128 CIS Front-end Replacement

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774Y**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Y - 19128 CIS Front-end Replacement
Workpaper Detail:	00774Y.001 - 19128 CIS Front-end Replacement

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	1,087	0
Non-Labor	0	1,375	0
NSE	0	0	0
Total	**0**	**2,462**	**0**
FTE	0.0	9.5	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Y - 19128 CIS Front-end Replacement
Workpaper Detail:	00774Y.002 - 19128 CIS Front-end Replacement
In-Service Date:	11/30/2019
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	2,301
Non-Labor	0	0	6,985
NSE	0	0	0
Total	0	0	9,286
FTE	0.0	0.0	20.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774Z - 19127 MCS Next Generation**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Z - 19127 MCS Next Generation

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	2,397
Non-Labor	Zero-Based	0	0	0	0	0	0	0	660
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	3,057
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.8

Business Purpose:

Client facing changes require software packaging process on dated Powerbuilder technology. It is becoming more and
more critical to re-design MCS front end application from thick client package to thin client.
Meter usage information from non-core customers are collected from dial up modems communication. Such dated
infrastructure has become obsolete and it is becoming impossible to find replacement hardware to support such
communication architecture.

Physical Description:

Software changes will be made to MCS application.
Redesign client application to be browser based.
Replace dated dial up telecom equipment with cellular on TCP-IP protocol.

Project Justification:

Ability to provide changes more quickly to the MCS application. Ensure long term stability of communciation channel
between non-core customer meters and SCG MCS system.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00774Z - 19127 MCS Next Generation

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774Z**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00774Z - 19127 MCS Next Generation

Workpaper Detail: 00774Z.001 - 19127 MCS Next Generation

In-Service Date: 11/30/2019

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	0	0	2,397
Non-Labor	0	0	660
NSE	0	0	0
Total	**0**	**0**	**3,057**
FTE	0.0	0.0	20.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00784C - 19110 FoF - ICDA Phase 3**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784C - 19110 FoF - ICDA Phase 3

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	215	49	0
Non-Labor	Zero-Based	0	0	0	0	0	1,330	485	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,545	534	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.9	0.4	0.0

Business Purpose:

ICDA Vision:
ICDA will enable SCG employees to use customer data to make smarter, faster, better-informed decisions.
ICDA will allow us to develop our capabilities, transform our operations and target business outcomes across five Major Customer Service business areas: 1) Billing & Collections, 2) Customer Usage, 3) Customer Analytics (Programs), 4) Consumption Forecasting, 5) Customer Service Orders (CSO).
Project Description: ICDA is a strategic priority and enabler for multiple projects within the Customer Services and Customer Solutions organizations. ICDA's goal is to develop data analytics capabilities (people, technology and process) that enable the future vision of Southern California Gas Company's customer analytics.
The technology solution accommodates platforms, tools and various sources of customer data, increased data volume generated from Advanced Meter (AM) interval data, customer self-service transactional data and external third party data.

Data Analysts, Data Scientists and Data subject-matter-experts (people) will use data to analyze customer behavioral patterns, trends, and preferences during the customer evolution process (starting service, requesting service orders, program participation, remittance processing, transferring service, etc.).
Integrated data will be leveraged for:
1) Operational and monitoring purposes in the form of self-serviced reports and dashboards
2) Exploratory and discovery purposes to gain insights from the data, identify patterns and develop models for future operationalization
3) Operationalization (actionable) implementation of models with transactional systems.

The project will continue to develop and enforce its Data Governance and Data Analytics lifecycle frameworks (processes) to develop data analytics capabilities at SoCalGas.

Physical Description:

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784C - 19110 FoF - ICDA Phase 3

Continue to enhance ICDA , this time around 5 key data analytics themes:
1. AM Consumption Analytics - ""Eyes on the Meter""
   a) Customer Consumption Profiles – Identify customer consumption patterns to be applied throughout multiple use cases
   b) Energy Diversion/Revenue Protection – Unauthorized Turn/Ons, Chronic Vacant with consumption, Tampering, Bypass
2. Collections Bad Debt Drivers - determine the factors having most influence on bad debt
3. Propensity for Self Service
4. Repeat Call Analytics / Contact Call Center Drivers

Foundational Data: Sustain adoption gain through continued data integration and data provisioning into existing data repository for consumption (Data Integration Roadmap)
Data Governance (DG): Continue to add content to DG tools, apply processes based on prioritized data analytics initiatives (Data Governance Roadmap)
Foundational Platform: Monitor and enhance platform scalability (Technology Roadmap)

Project Justification:

Having these analytical data attributes will enable data analysts to drill down into problem areas, identify root causes, initiate actions to mitigate problems, and measure the results of the action.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00784C - 19110 FoF - ICDA Phase 3

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784C**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784C - 19110 FoF - ICDA Phase 3
Workpaper Detail:	00784C.001 - 19110 FoF - ICDA Phase 3

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	215	0	0
Non-Labor	1,330	0	0
NSE	0	0	0
Total	**1,545**	**0**	**0**
FTE	1.9	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784C - 19110 FoF - ICDA Phase 3
Workpaper Detail:	00784C.002 - 19110 FoF - ICDA Phase 3

In-Service Date: 03/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	49	0
Non-Labor	0	485	0
NSE	0	0	0
Total	**0**	**534**	**0**
FTE	0.0	0.4	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00784H - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784H - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	207	0	0
Non-Labor	Zero-Based	0	0	0	0	0	313	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	520	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0

Business Purpose:

ICDA is a strategic priority and enabler for multiple projects within the Customer Service Enhancement Program (CSEP). ICDA will deliver an integrated data store that enables the future vision of Southern California Gas Company's customer analytics. The analytics solution will accommodate big data volumes generated from Advanced Meter (AM) interval data and self-service transactional data. The integration of this data will provide the ability to analyze customer behavioral data, trends, and preferences during the customer evolution process (starting service, requesting service orders, program participation, remittance processing, transferring service, etc.). By doing so, this will allow SCG to make operational, tactical and strategic decisions more efficiently and timely, by making data promptly accessible and available to SCG's data analysts.

Physical Description:

Implement ICDA customer data phases based on strategic SCG's priorities
•Run our business with excellence
•Facilitate the residential growth strategy
•Improve customer segmentation analysis
•Increase self-service reporting - how to create ad-hoc and canned reporting.
•Build a Data Governance team for post-implementation data request & source integration support.
•Provide advanced and predictive analytics capability to a broader audience.
•Provide more transparency of where data exists, who owns it and what it means to data consumers in order to conduct analysis more quickly.

Project Justification:

Upon implementation of this integrated data solution business units in scope will have the following opportunities to realize the following benefits:
•Improved analytics around inaccurate bills, process billing, exceptions/resolutions (failed edits) with the opportunity to reduce the number of monthly billing exceptions
•Increase in paperless billing rate
•Provide segmentation analysis on propensity to pay, method of payment, channel preference, behavior score, number of collection notices; improve uncollectable rate and collection agency annual referral amounts
•Improve target marketing effectiveness using customer segmentation
•Ability to reduce analytics time to insights (and time to business value) by investing in Information Governance and Data Management, Analytics Governance and Advanced Analytics capabilities. Current estimates are 80% of super-user time spent integrating data because of lack of foundational capabilities.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784H - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00784H

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	2. Improving Customer Experience
Workpaper Group:	00784H - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS
Workpaper Detail:	00784H.001 - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS

In-Service Date: 01/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	207	0	0
Non-Labor	300	0	0
NSE	0	0	0
Total	507	0	0
FTE	1.8	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 2. Improving Customer Experience

Workpaper Group: 00784H - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS

Workpaper Detail: 00784H.002 - 81470 INTEGRATED CUSTOMER DATA & ANALYTICS

In-Service Date: 01/31/2017

Description:

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	13	0	0
NSE	0	0	0
Total	13	0	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00754B - 84280 MY ACCOUNT FOR SCBS BILLED CUSTOMERS (MA

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	D. CS - Office Operations
Category-Sub:	3. Mandated
Workpaper Group:	00754B - 84280 MY ACCOUNT FOR SCBS BILLED CUSTOMERS (MA

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	689	0	0
Non-Labor	Zero-Based	0	0	0	0	0	655	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**1,344**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0

Business Purpose:

The "MAS" project will extend current Business My Account portal access and selected functionality to the approximately 700 core business accounts and 1,200 non core accounts that are billed through SCBS.
By further leveraging the MATRIX project infrastructure, these customers will be able to utilize the new Business My Account. Key self-service functionality extended to these customers includes:
1) access to certain EBPP functionality; 2) a new secured document repository system (Message Center) by which to receive documents with sensitive information; and 3) online presentment of hourly and daily gas usage data for core accounts that have been "advanced" with "Series 3000" MTUs through the AM project.

Physical Description:

Allow Registration and Link account functionality in Business My Account portal.
Allows AEs and SCBS billing analysts to upload documents via a secured portal to communicate and transmit documents.
Additional authorization code (likely info available in CIS like last 4 digits of Facility ID) to be provided by AE, CCC or C&I Billing Support.
Usage presentment graphs without cost information for Core Tariffed customers only.

Project Justification:

Customer/Strategic: Improved customer satisfaction with a new and self-service option to retrieve confidential/sensitive customer information and perform key account-related transactions. Business My Account would also be available to 3rd parties who obtain customer approval.
Regulatory/Privacy Compliance: Proactive approach to protecting customer-specific electronic information, while minimizing risks of security breaches and penalties.
Failure to comply may increase risk of audit findings which can result in daily fines and penalties to the Company as well as risk in negative media exposure.
As mandated per Rule 42*, provide a secure option to communicate to customers confidential/sensitive information to protect their privacy and reduce risk of unauthorized access.
Regulatory: Comply with Advanced Meter (AM) regulatory mandate to provide energy usage presentment to all AM customers.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	D. CS - Office Operations
Category-Sub:	3. Mandated
Workpaper Group:	00754B - 84280 MY ACCOUNT FOR SCBS BILLED CUSTOMERS (MA

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00754B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	D. CS - Office Operations
Category-Sub:	3. Mandated
Workpaper Group:	00754B - 84280 MY ACCOUNT FOR SCBS BILLED CUSTOMERS (MA
Workpaper Detail:	00754B.001 - 84280 MY ACCOUNT FOR SCBS BILLED CUSTOMERS (MA
In-Service Date:	06/30/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	689	0	0
Non-Labor	655	0	0
NSE	0	0	0
Total	1,344	0	0
FTE	6.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00754D - 84207 SEU CCC GENESYS REFRESH**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00754.0
Category:	D. CS - Office Operations
Category-Sub:	3. Mandated
Workpaper Group:	00754D - 84207 SEU CCC GENESYS REFRESH

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	80	0	0
Non-Labor	Zero-Based	0	0	0	0	0	289	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**369**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0

Business Purpose:

The objective is to upgrade all components of the Genesys production framework in RB to version 8.x and implement DR failover between RB and the new Genesys framework in Monterey Park (MPK). The upgrade is needed to address interim critical issues for SDGE and SCG that impact the Call Centers ability to service our customers as required. The upgrade will improve system stability, redundancy & optimize configuration by upgrading hardware and leveraging Virtual Servers.

Physical Description:

Rebuild of an upgraded production system in RB that is able to failover with the system in MPK.
Database migration from Oracle to Oracle RAC (Distributed RDMS).
Implementation of DR failover capabilities between RB and MPK.
Conversion of the IVR applications from version 7.6 to 8.x. This new version will utilize native Genesys capabilities, avoiding the current use of an interpreter application.
Upgrade GAD (Genesys Agent Desktop) to Genesys WorkSpace and the implementation of additional Genesys components.

Project Justification:

Upgrading the systems will ensure that the Genesys components are at the current level that will provide support to address bug fixes and enhancements which assures the Customer Contact Center a reliable and available system.
Additional API's and communication channels enables additional interactions between customer and agents.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00754.0

Category: D. CS - Office Operations

Category-Sub: 3. Mandated

Workpaper Group: 00754D - 84207 SEU CCC GENESYS REFRESH

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00754D**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00754.0

Category: D. CS - Office Operations

Category-Sub: 3. Mandated

Workpaper Group: 00754D - 84207 SEU CCC GENESYS REFRESH

Workpaper Detail: 00754D.001 - 84207 SEU CCC GENESYS REFRESH

In-Service Date: 02/28/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	80	0	0
Non-Labor	289	0	0
NSE	0	0	0
Total	369	0	0
FTE	0.7	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774B - 19044 Credit and Coll Optimization Phase 4

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774B - 19044 Credit and Coll Optimization Phase 4

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	535	545	633
Non-Labor	Zero-Based	0	0	0	0	0	31	482	1,178
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	566	1,027	1,811
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.7	4.7	5.5

Business Purpose:

Implement external Credit & Collections Module
1) Implement Customer Segmentation to determine "Unwilling to Pay", "Late Payers", and "Unable to Pay" customers.
Provide ability to optimize priority of orders.
2) Use external module to prioritize collect or close orders -- address "Unwilling to Pay" as the highest priority
3) Implement External Collection Timeline be able to reduce timeline and provide flexibility
 Improve on existing and introduce new customer behavior-based methodologies to enhance collections success. Use
targeted approaches to determine which customers and the best stagies/timing on when to deliver noticies, phone calls
and field collectors for optimal collection.

Physical Description:

Implemention of 3rd party collections behavioral scoring solution to optimize/prioritization Field routing strategy of Collect or
Close notices/orders based on multiple customer behavior variables, not just dollar amount.
• Introduction of a separate Collections application (like at SDG&E) vs. the current SCG process of using CIS for
Collections.
• Better utilization of customer's propensity to pay behavior to modify/improve on single-thread collections strategy used
today and alievate growing population of time consuming/manual exception collections handling.
• Optimization of Minimum Collection Amount.
• Implementation of/change CIS logic to accomodate these multi-targeted Collections strategies.

Project Justification:

Improved collections and operational efficiencies. Increase effectiveness of collect or close order to change customer
behavior. Decrease collect or close orders over time, increase full and partial payments, reduce cash flow, reduce bad
debts, reduce collection agency commission fees, and increase net working capital.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774B - 19044 Credit and Coll Optimization Phase 4

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774B - 19044 Credit and Coll Optimization Phase 4
Workpaper Detail:	00774B.001 - 19044 Credit and Coll Optimization Phase 4

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	535	0	0
Non-Labor	31	0	0
NSE	0	0	0
Total	**566**	**0**	**0**
FTE	4.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774B - 19044 Credit and Coll Optimization Phase 4
Workpaper Detail:	00774B.002 - 19044 Credit and Coll Optimization Phase 4

In-Service Date:	12/31/2018
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	545	0
Non-Labor	0	355	0
NSE	0	0	0
Total	0	900	0
FTE	0.0	4.7	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00774B - 19044 Credit and Coll Optimization Phase 4

Workpaper Detail: 00774B.003 - 19044 Credit and Coll Optimization Phase 4

In-Service Date: 09/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	633
Non-Labor	0	0	1,178
NSE	0	0	0
Total	**0**	**0**	**1,811**
FTE	0.0	0.0	5.5

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774B - 19044 Credit and Coll Optimization Phase 4
Workpaper Detail:	00774B.004 - 19044 Credit and Coll Optimization Phase 4
In-Service Date:	12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	127	0
NSE	0	0	0
Total	**0**	**127**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774E - 84322 CIS Segregation of Duties (SoD) Project**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774E - 84322 CIS Segregation of Duties (SoD) Project

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	178	228	0
Non-Labor	Zero-Based	0	0	0	0	0	198	27	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**376**	**255**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.5	2.0	0.0

Business Purpose:

Segregation of Duties (SoD) Rules and supporting SoD Matrix Development:
Customer Operations Technology has developed the following approach to adopt SoD rules within the Customer Operations Department. The approach will be the foundation to the development of SoD Rules and SoD Matrix deliverables.
Key CIS "financial transaction windows" that could lead to segregation of duties conflicts were identified. As expected, in the majority of cases these "financial related windows" enabled financial transactions.
Organization owners were identified for each of the "financial transaction windows".
Organization owners of each "financial transaction windows" identified 1) Who (job title based on job function) and 2) how (access level) would be allowed access to windows to transactions. The expectation is that access to certain "financial transactions windows" will be limited to Organization owner staff where others would be open to groups outside organizations owners with the appropriate controls.
The deliverable of this activity is the SoD Matrix. This matrix will indicate key "financial transaction windows" in CIS, the Organization owners for these windows and the organizations and job titles that will be allowed access to perform financial transactions within such windows.

Physical Description:

Process Enhancements:
The SoD Matrix will be the foundation for the implementation of SoD Rules, which will subsequently be applied to:
1) CIS Access management (access key creation and assignment) process
2) CIS Access review processes
System Enhancements:
3) CIS system changes to automate enforcement of SoD Rules in access management and access review processes

Project Justification:

Enforce effective internal controls to mitigate the risk of erroneous, inappropriate and unauthorized actifities.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774E - 84322 CIS Segregation of Duties (SoD) Project

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774E**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774E - 84322 CIS Segregation of Duties (SoD) Project
Workpaper Detail:	00774E.001 - 84322 CIS Segregation of Duties (SoD) Project

In-Service Date:	12/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	178	0	0
Non-Labor	198	0	0
NSE	0	0	0
Total	376	0	0
FTE	1.5	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00774E - 84322 CIS Segregation of Duties (SoD) Project

Workpaper Detail: 00774E.002 - 84322 CIS Segregation of Duties (SoD) Project

In-Service Date: 03/31/2018

Description:

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	0	228	0
Non-Labor	0	27	0
NSE	0	0	0
Total	0	255	0
FTE	0.0	2.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00774G - 84324 Residential 2 PSI Service**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00774G - 84324 Residential 2 PSI Service

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	307	0	0
Non-Labor	Zero-Based	0	0	0	0	0	485	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	792	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0

Business Purpose:

To remain competitive and retain natural gas market share in residential new construction, SoCalGas must offer 2 PSI as a standard service offering to builders in the single-family and multi-family construction market.
SoCalGas faces a potentially significant loss of natural gas load from residential new construction, starting in 2020, as builders shift end-use appliances to electricity, in an attempt to cost effectively comply with Title 24 requirements for Zero Net Energy (ZNE).
Expanding residential 2 PSI gas delivery pressure to all residential customer facilities (e.g. individually-metered, single-family and attached housing) has a strategic benefit. SoCalGas will preserve developers', builders' and contractors' use of natural gas, by making it easier and less expensive to install.
2 PSI allows builders to use smaller meters and reduced pipe sizing that is easier to handle and install, resulting in construction material and labor cost savings.
This strategic move also addresses pressure requirements for new end-uses such as tank-less water heaters and keeps SoCalGas in play for future building and appliance standards.
SoCalGas has safely provided 2 PSI gas service since 1997, for use in new residential multi-family construction. There are approximately 68K 2 PSI accounts in CIS.

Physical Description:

Internal policy change, offering 2 PSI as a standard service offering to builders in the multi-family and single-family construction market.
Modify validation criteria to allow single-family residential facilities to be 2 PSI candidates
Allow General Ledger clerks to work all Temporary Gauge (TG) accounts without learning new processes and windows.
Apply Pressure Factor in bill calculation for all 2 PSI (all TG) accounts.
Enhance Open Work Queue.

Project Justification:

Although builders prefer 2 PSI, SoCalGas has not actively marketed this service offering because 2 PSI accounts use a work around in CIS that results in higher billing and support costs. 2 PSI accounts are marked as special ledger accounts in CIS and are currently processed by the Special Ledger Billing Team.
With the current CIS system work around, the current volume of 2 PSI accounts is already taxing the Special Ledger Billing Team. Expanded use of 2 PSI in residential accounts will certainly overload their processing capacity.
One-time CIS changes must be introduced to allow 2 PSI accounts to be billed, processed and adjusted like normal service pressure accounts.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00774G - 84324 Residential 2 PSI Service

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774G**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00774G - 84324 Residential 2 PSI Service

Workpaper Detail: 00774G.001 - 84324 Residential 2 PSI Service

In-Service Date: 06/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	307	0	0
Non-Labor	485	0	0
NSE	0	0	0
Total	792	0	0
FTE	2.7	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00784A - 19107 FoF - CIS Pre-Bill AMI Enhancement**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784A - 19107 FoF - CIS Pre-Bill AMI Enhancement

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	120	0	0
Non-Labor	Zero-Based	0	0	0	0	0	538	467	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**658**	**467**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0

Business Purpose:

Consumption related exceptions are created to QA manual meter reads. By early 2017, Advanced Meter will have installed an MTU on most of the meters in the service territory, therefore the existing logic needs to be revisited and updated to electronic reads.
This project intends to update business rules to identify unexpected zero consumption on an active account (BIM1920) to leverage the electronic meter reads captured by the Advanced Meter which is more timely (daily instead of weekly) and more granular (CF instead of CCF).
The goal is to 1) reduce false positives in the back office and in the field (50% reduction), 2) prevent customer bills to be delayed by identifying events early and acting quickly on incidents.

Physical Description:

- Document new business processes and gather organisational requirements
- Define solution architecture to reroute CIS Pre-Bill business rules into a new transactional analytics tool that checks the Advanced Meter reads and generate incidents.
- Provide access to new tools where analysts can triage and resolve the incidents.
- Provide problem management report to support continuous improvment.
- Tier 1 system to be consistent with CIS

Project Justification:

Increase customer satisfaction by being onsite for valid reasons
Employee satisfaction to work on high value items

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784A - 19107 FoF - CIS Pre-Bill AMI Enhancement

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784A**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00784A - 19107 FoF - CIS Pre-Bill AMI Enhancement

Workpaper Detail: 00784A.001 - 19107 FoF - CIS Pre-Bill AMI Enhancement

In-Service Date: 12/31/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	120	0	0
Non-Labor	538	0	0
NSE	0	0	0
Total	**658**	**0**	**0**
FTE	1.0	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00784A - 19107 FoF - CIS Pre-Bill AMI Enhancement

Workpaper Detail: 00784A.002 - 19107 FoF - CIS Pre-Bill AMI Enhancement

In-Service Date: 01/31/2018

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	467	0
NSE	0	0	0
Total	0	467	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00784E - 19112 FoF - Paperless Initiatives**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784E - 19112 FoF - Paperless Initiatives

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	988	89	0
Non-Labor	Zero-Based	0	0	0	0	0	1,512	798	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	2,500	887	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	8.6	0.8	0.0

Business Purpose:

The Paperless Initiatives project consists of three initiatives to achieve savings via paperless promotion and enablement, as follows:
1. 90 Day auto-enroll
Customers are uncomfortable switching to paperless. They need the paper bill as a reminder to pay and are uncomfortable with new technology.
Customer will receive both a paper bill and an electronic bill for 90 days. At the end of 90 days, customers will be able to opt in to electronic billing (paperless). If they do nothing, they will continue to receive their paper bill.
"The Paperless Initiatives project consists of three initiatives to achieve savings via paperless promotion and enablement, as follows:

1. (Priority 3) 90 Day auto-enroll (6 months duration)
Customers receive both ebill and paper bill with option to turn off paper bill at the end of 90 days.
Customers are uncomfortable switching to paperless. They need the paper bill as a reminder to pay and are uncomfortable with new technology.
Customer will receive both a paper bill and an electronic bill for 90 days. At the end of 90 days, customers will be able to opt in to electronic billing (paperless). If they do nothing, they will continue to receive their paper bill.
2) Paperless Electronic Late Notice
Reduce paper, printing, postage expense by sending Late Notices by email to paperless customers (requires tariff rule and system changes).
3. My Account Enrollment Enablement via CIS
4. Increase paperless billing by sending customers a ""video"" kit with paperless billling demo and other program info

Physical Description:

- File of 200k customers will be provided to CIS by business
- Can be res or non-res
- CIS will need to track which customers are selected for the trial and trial period (90 days)
- Customers will be able to click link in email to specify they want to go paperless. This will trigger email to call center to process manually. Partial ba-id + zip or other identifying information would need to be in the email
- Customers would also be able to call csr to turn off paper.
- Once customer opts to go paperless within the 90 days, need to stop sending email
- After 90 day trial period, if customer has not responded, need to take them off paperless, and remove from trial
- If customer wants to opt out of trial 90 day period, they need to call CSR.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00784E - 19112 FoF - Paperless Initiatives

Project Justification:

The Paperless Initiatives project consists of three initiatives to achieve savings via paperless promotion and enablement

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784E - 19112 FoF - Paperless Initiatives

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784E**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784E - 19112 FoF - Paperless Initiatives
Workpaper Detail:	00784E.001 - 19112 FoF - Paperless Initiatives

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	988	0	0
Non-Labor	1,044	0	0
NSE	0	0	0
Total	**2,032**	**0**	**0**
FTE	8.6	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00784E - 19112 FoF - Paperless Initiatives

Workpaper Detail: 00784E.002 - 19112 FoF - Paperless Initiatives

In-Service Date: 08/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	89	0
Non-Labor	0	399	0
NSE	0	0	0
Total	**0**	**488**	**0**
FTE	0.0	0.8	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784E - 19112 FoF - Paperless Initiatives
Workpaper Detail:	00784E.003 - 19112 FoF - Paperless Initiatives

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	468	0	0
NSE	0	0	0
Total	**468**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00784.0

Category: D. CS - Office Operations

Category-Sub: 4. Business Optimization

Workpaper Group: 00784E - 19112 FoF - Paperless Initiatives

Workpaper Detail: 00784E.004 - 19112 FoF - Paperless Initiatives

In-Service Date: 08/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	399	0
NSE	0	0	0
Total	**0**	**399**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00784F - 19113 FoF - Performance Management for office staff (Nice)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784F - 19113 FoF - Performance Management for office staff (Nice)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	411	88	0
Non-Labor	Zero-Based	0	0	0	0	0	631	51	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,042	139	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.6	0.8	0.0

Business Purpose:

As has been the case with the CCC for a number of years, both Billing and Credit & Collections can benefit from these same technologies in tightening up workload forecast and staffing plans as well as exposing opportunities to improve employee performance.

Physical Description:

Extend technologies currently used by the CCC to Billing and C&C. Unlike the CCC where the captured data is mostly call related data, for Billing and C&C it will be CIS work queue data.

Project Justification:

Acts as a springboard to further integration of tech/people/process between back office and front office recognizing the business is different than it was when these organizational silos were created.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784F - 19113 FoF - Performance Management for office staff (Nice)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784F - 19113 FoF - Performance Management for office staff (Nice)
Workpaper Detail:	00784F.001 - 19113 FoF - Performance Management for office staff (Nice)

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	411	0	0
Non-Labor	631	0	0
NSE	0	0	0
Total	**1,042**	**0**	**0**
FTE	3.6	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	D. CS - Office Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00784F - 19113 FoF - Performance Management for office staff (Nice)
Workpaper Detail:	00784F.002 - 19113 FoF - Performance Management for office staff (Nice)

In-Service Date: 04/30/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	88	0
Non-Labor	0	51	0
NSE	0	0	0
Total	**0**	**139**	**0**
FTE	0.0	0.8	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	E. Gas System Operations
Workpaper:	VARIOUS

Summary for Category: E. Gas System Operations

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	1,128	1,645	3,627
Non-Labor	0	2,273	2,161	1,144
NSE	0	0	0	0
Total	**0**	**3,401**	**3,806**	**4,771**
FTE	0.0	9.8	14.3	31.5

00756O 81480 LOW OFO AND EFO

Labor	0	175	0	0
Non-Labor	0	128	0	0
NSE	0	0	0	0
Total	**0**	**303**	**0**	**0**
FTE	0.0	1.5	0.0	0.0

00774I 19049 ENVOY Generation MA (Microservice Architecture)

Labor	0	0	1,311	3,579
Non-Labor	0	0	413	1,100
NSE	0	0	0	0
Total	**0**	**0**	**1,724**	**4,679**
FTE	0.0	0.0	11.4	31.1

00784G 81469 ENVOY NEXT GENERATION

Labor	0	625	0	0
Non-Labor	0	1,930	0	0
NSE	0	0	0	0
Total	**0**	**2,555**	**0**	**0**
FTE	0.0	5.4	0.0	0.0

00756M RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

Labor	0	0	189	48
Non-Labor	0	0	344	44
NSE	0	0	0	0
Total	**0**	**0**	**533**	**92**
FTE	0.0	0.0	1.6	0.4

00756N 84290 HIGH OFO_EFO TCAP ENVOY

Labor	0	328	0	0
Non-Labor	0	215	0	0
NSE	0	0	0	0
Total	**0**	**543**	**0**	**0**
FTE	0.0	2.9	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Category: E. Gas System Operations

Workpaper: VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
00772D RAMP - INCREMENTAL 19078 Emergency Field Communication Services				
Labor	0	0	145	0
Non-Labor	0	0	1,404	0
NSE	0	0	0	0
Total	**0**	**0**	**1,549**	**0**
FTE	0.0	0.0	1.3	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00756O - 81480 LOW OFO AND EFO**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756O - 81480 LOW OFO AND EFO

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	175	0	0
Non-Labor	Zero-Based	0	0	0	0	0	128	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**303**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0

Business Purpose:

Support compliance with CPUC decisions for changes to Rule 30, Rule 41, Rule 23 and SDG&E Rule 14 effective Jan 1, 2015. Major system enhancements are required in ENVOY and SCBS applications to support Low Operational Flow Order (Low OFO) and Emergency Flow Order (EFO).

Project will have 2 phases.
Phase 1 is an interim solution in order to support a Jan 1, 2015 implementation date.
•Add new storage withdrawal rule
•Implement the formula that will be used to trigger a Low OFO/EFO
•Implement a display onto the Envoy homepage to show OFO/EFO Type and Stage

Phase 2 is the long term solution of full automation of manual processes not addressed in Phase 1

Physical Description:

Envoy will support new formula to trigger and display the Low OFO and EFO, entry of OFO type and stage and OFO event history.

Project Justification:

Enable SCG & SDGE to comply with CPUC decisions for changes to Rule 30, Rule 41, Rule 23 and SDG&E Rule 14 .
•Creates a tool to better manage the peak load during winter period.
•To provide system operational stability and reliability of services to customers.
CPUC can charge penalties for non-compliance with CPUC Decision. Penalties are subject to CPUC violation rules for disallowance & negligence.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: E. Gas System Operations

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00756O - 81480 LOW OFO AND EFO

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756O**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756O - 81480 LOW OFO AND EFO
Workpaper Detail:	00756O.001 - 81480 LOW OFO AND EFO

In-Service Date:	08/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	175	0	0
Non-Labor	128	0	0
NSE	0	0	0
Total	303	0	0
FTE	1.5	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00774I - 19049 ENVOY Generation MA (Microservice Architecture)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774I - 19049 ENVOY Generation MA (Microservice Architecture)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,311	3,579
Non-Labor	Zero-Based	0	0	0	0	0	0	413	1,100
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	1,724	4,679
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	11.4	31.1

Business Purpose:

Software changes will be made to ENVOY application.
Redesign system architecture to allow for quicker response to business and regulatory changes. Envoy will be broken down into multiple component services, so that each of these services can be deployed, tweaked, and then redeployed independently without compromising the integrity of an application.
Employ computational graphic techniques for complex Envoy processes like confirmation and allocations for better understanding of the process and the results by utilizing interactive graphics for complex computational requirements.
Implement Event-driven architecture to facilitate immediate information dissemination and reactive business process execution in Envoy.

Physical Description:

Organize Envoy business functionality into loosely coupled, separately deployable entities for flexibility and to fulfill regulatory mandates in timely manner. Individual processing unit encapsulates cluster of related functionality so that they can change efficiently in response to business needs.

Project Justification:

Ability to quicky adapt to business and regulatory changes. Ability to provide more timely data to customers

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: E. Gas System Operations

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00774I - 19049 ENVOY Generation MA (Microservice Architecture)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774I**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774I - 19049 ENVOY Generation MA (Microservice Architecture)
Workpaper Detail:	00774I.001 - 19049 ENVOY Generation MA (Microservice Architecture)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	1,311	0
Non-Labor	0	413	0
NSE	0	0	0
Total	0	1,724	0
FTE	0.0	11.4	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774I - 19049 ENVOY Generation MA (Microservice Architecture)
Workpaper Detail:	00774I.002 - 19049 ENVOY Generation MA (Microservice Architecture)
In-Service Date:	10/31/2019
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	3,579
Non-Labor	0	0	1,100
NSE	0	0	0
Total	0	0	4,679
FTE	0.0	0.0	31.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00784G - 81469 ENVOY NEXT GENERATION**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00784G - 81469 ENVOY NEXT GENERATION

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	625	0	0
Non-Labor	Zero-Based	0	0	0	0	0	1,930	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**2,555**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0

Business Purpose:

This project will upgrade the Envoy application to meet operational necessity, increase agility, improve efficiency &
customer experience, and align with IT strategic direction by:
•Upgrading the technology to be compatible with newer versions of Microsoft Internet Explorer, Safari, Mozilla Firefox and
Google Chrome.
•Mitigate Cross Site Reference Forgery (CSRF) security risk.
•Upgrading JDK/WLS to the current version
•Enhancing the GUI design layout and system functionalities across the entire application to improve customer usability,
reduce errors, and increase customer satisfaction.
•Restoring "Help" site and implementing additional business functionality identified by external and internal business users
that is currently backlogged.
•Providing mobile & tablet access capability for ENVOY home page, alerts, reports, purchase capacity and nominations.

Physical Description:

Envoy site are protected from CSRF Security Risk
Compatible with newer versions of Microsoft Internet Explorer
Update the help contents.
Leverage existing technology and provide customers an intuitive help site.

Billing analysts will be able to track whether all accounts have been billed, verified, and checked for quality through SCBS
application Work Queue process. SCBS will send finalized billing statements to Envoy for applicable accounts. Envoy
external customers can retrieve and view the finalized billing statements through Envoy site.
Provide mobile & tablet access to public pages, reports, alerts, purchase capacity, and manage nominations as requested
by the customers to accommodate daily gas trading & scheduling.

Project Justification:

Improve SoCalGas reputation as a reliable service provider by addressing items identified in the Mastio Survey such as:
•Functional improvements and mobile/tablet access.
•Prevent disruption of time sensitive business transactions.
•Prevent security breach of confidential customer data

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00784G - 81469 ENVOY NEXT GENERATION

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00784G**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00784.0
Category:	E. Gas System Operations
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00784G - 81469 ENVOY NEXT GENERATION
Workpaper Detail:	00784G.001 - 81469 ENVOY NEXT GENERATION

In-Service Date: 08/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	625	0	0
Non-Labor	1,930	0	0
NSE	0	0	0
Total	2,555	0	0
FTE	5.4	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group

00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	189	48
Non-Labor	Zero-Based	0	0	0	0	0	0	344	44
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	533	92
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.4

Business Purpose:

WebEOC is a system used to support EOC Operations. This system is currently not integrated with other systems such as SORT, GIS, CLICK. There are several issues that our current WebEOC system cannot handle. One, the structure of the database is limiting the amount of data/fields that can be added to the system and with the coming GO112F regulations we will need to expand the amount of data that needs to be captured. Two, the ability to interact with other systems. We are unable to push data/information from other systems into the current WebEOC system. While we can pull information out we cannot push information into WebEOC without astronomically high expenditures. Third is the capability to have an interactive GIS integration that includes already established information. Fourth, WebEOC does not have a fully functional integrated notification. Finally, there is no advanced analysis on the existing data in the system therefore there are no means to identify key information and generate automatic actionable outputs.

Physical Description:

Initially the current system would be duplicated and then replaced with a new system as the primary source for Emergency Management and Gas Leaks. Then integrations with other systems including SORT, GIS, and CLICK will be done in order to utilize data for reporting and automatically fill in forms based on critical criteria. The interfaces and API's would be built and addressed by the vendor.
- Tier 1 system to be consistent with CIS

Project Justification:

The new system will provide automation of incoming information and external notifications thus eliminating the current manual time-consuming and disruptive process. Integrations with GIS will provide the ability to visualize data and act on the information as it happens. This system can track crew activities and locations as required by GO112F and allow for real-time awareness that is currently not available. This solution can provide GIS tracking of employees in order to be aware of their location for safety purposes. This is currently done through ENS without the capabilities of graphical spatial information. Finally, this will also reduce the time it takes for reporting because all of the needed information will be in one system. Currently the information needed for reports is in 3-4 systems.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756M**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project
Workpaper Detail:	00756M.001 - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	189	0
Non-Labor	0	344	0
NSE	0	0	0
Total	**0**	**533**	**0**
FTE	0.0	1.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project
Workpaper Detail:	00756M.001 - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

RAMP Item # 1

RAMP Chapter: SCG-2

Program Name: Employee, Contractor, Cust & Public Safety

Program Description: Employee, Contractor, Cust & Public Safety

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Risk/Mitigation:

　Risk: Gas

　Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　Forecast Method: Zero-Based

Construction Start Date:　　　　　　　　　　In Service Date:04/30/2019

Work Type: Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project
Workpaper Detail:	00756M.002 - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

In-Service Date: 04/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	48
Non-Labor	0	0	44
NSE	0	0	0
Total	**0**	**0**	**92**
FTE	0.0	0.0	0.4

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756M - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project
Workpaper Detail:	00756M.002 - RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Project

RAMP Item # 1

RAMP Chapter: SCG-2

Program Name: Employee, Contractor, Cust & Public Safety

Program Description: Employee, Contractor, Cust & Public Safety

---

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Construction Start Date: In Service Date:04/30/2019

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

**Beginning of Workpaper Group
00756N - 84290 HIGH OFO_EFO TCAP ENVOY**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	E. Gas System Operations
Category-Sub:	3. Mandated
Workpaper Group:	00756N - 84290 HIGH OFO_EFO TCAP ENVOY

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	328	0	0
Non-Labor	Zero-Based	0	0	0	0	0	215	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	543	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0

Business Purpose:

Move from 10% to 8% monthly balancing, expected to be in effect as part of phase 1 settlement (expected Q1, 2016).
Low OFO proposal has been adopted in December 2015, and the day-ahead forecasting methodology has been
demonstrated, the Low OFO concept will be extended to High OFO's when the Aliso Canyon injection expansion project is
in operation.
If forecasted receipts – forecasted send-out – forecasted net injections into storage accounts > 345 MMcfd, then High
OFO.
Noticing Deadlines and Daily Balancing Standby Rate matched to PG&E's.
Stage Level Tolerance as % of burn Noncompliance Charge.
Comply with CPUC decision for changes to Rule 30.

Physical Description:

Reports and screens modified for 8% monthly balancing and multi-stage High OFOs. The OFO page will be split into Low
and High OFO with the High OFO functioning like the current Low OFO. The OFO calculations can be processed at
different times. Both Low and High OFO can be called on the same day. The Confirmations process will be changed to
hold to the net injection capacity on all cycles.
Reports and screens modified for 8% monthly balancing and multi-stage High OFOs.

Project Justification:

Creates a tool to better manage the peak gas delivery periods.
To provide pipeline system operational stability and reliability of services to customers by Incentivizing transportation
customers to balance their supplies with their burns. It also creates more symmetry with SoCalGas' new Low OFO
process and with PG&E's existing High OFO process.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: E. Gas System Operations

Category-Sub: 3. Mandated

Workpaper Group: 00756N - 84290 HIGH OFO_EFO TCAP ENVOY

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756N**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: E. Gas System Operations

Category-Sub: 3. Mandated

Workpaper Group: 00756N - 84290 HIGH OFO_EFO TCAP ENVOY

Workpaper Detail: 00756N.001 - 84290 HIGH OFO_EFO TCAP ENVOY

In-Service Date: 08/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	328	0	0
Non-Labor	215	0	0
NSE	0	0	0
Total	543	0	0
FTE	2.9	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group

00772D - RAMP - INCREMENTAL 19078 Emergency Field Communication Services

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	E. Gas System Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00772D - RAMP - INCREMENTAL 19078 Emergency Field Communication Services

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	145	0
Non-Labor	Zero-Based	0	0	0	0	0	0	1,404	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**1,549**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0

Business Purpose:

Emergency field communication services have become increasingly critical during incident responses in the field. Company responders need the ability to communicate amongst each other, with the Emergency Operations Centers, Gas Emergency Centers, as well as public safety entities. Existing emergency field communication capabilities are limited and do not meet the requirements by company responders. This project will develop new capabilities as well as refresh and enhance existing capabilities resulting in a flexible fleet of emergency field communication assets that can be deployed for SDG&E and SoCalGas incidents.

Physical Description:

- Procure commerical mobility solutions from ATT: Cell-on-Wheels (COW) and Fly-Away Kit
- Engage vendor to design and build satellite communications trailers to SDG&E/SoCalGas communication design requirements
- Outfit Enhanced Mobile Command Trailer (EMCT) with an comprhensive suite of technologies providing audio/visual, voice communication, data connectivity, satellite commuication, and land mobile radio services
- Refresh and enhance existing Mobile Command Trailers (MCT) with update to date cellular communication technologies
- Enable remote out-of-band management capabilities on all systems to enhance remote troubleshooting capabilities
- Eight (8) satellite comunication trailers with satellite backhaul and Company wireless LAN capabilities
- Refresh of three (3) existing mobile command trailers (currently maintained and deployed by Emergency Services) with cellular backhaul (ATT, Verizon, TMobile), IP phones, satellite phones, and LMR capabilities. Data services through individual cellular "aircards"
- Outfit of one (1) enhanced mobile command trailer with cellular and satellite backhaul (requires IT to activate satellite capabilites), IP phones, satellite phones, and LMR capabilities. Primary data services provided by individual cellular "aircards", satellite for backup data connectivity (when activated by IT)

Project Justification:

Flexible fleet of emergency field communication assets that can be deployed in multiple configurations in response to the incident or event requiring communications. All assets will be constructed with standard company technologies and with similar designs to minimize the complexity of deployment, troubleshooting, maintenance and maximize reliability.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	E. Gas System Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00772D - RAMP - INCREMENTAL 19078 Emergency Field Communication Services

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772D**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	E. Gas System Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00772D - RAMP - INCREMENTAL 19078 Emergency Field Communication Services
Workpaper Detail:	00772D.001 - RAMP - INCREMENTAL 19078 Emergency Field Communication Services

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	145	0
Non-Labor	0	1,404	0
NSE	0	0	0
Total	**0**	**1,549**	**0**
FTE	0.0	1.3	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	E. Gas System Operations
Category-Sub:	4. Business Optimization
Workpaper Group:	00772D - RAMP - INCREMENTAL 19078 Emergency Field Communication Services
Workpaper Detail:	00772D.001 - RAMP - INCREMENTAL 19078 Emergency Field Communication Services

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	F. Fleet Services
Workpaper:	VARIOUS

Summary for Category: F. Fleet Services

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	234	311	1,143
Non-Labor	0	268	2,076	6,458
NSE	0	0	0	0
Total	**0**	**502**	**2,387**	**7,601**
FTE	0.0	2.0	2.7	9.9

00776AC 81444 FLEET M5 SYSTEM UPGRADE PH1

Labor	0	234	0	0
Non-Labor	0	268	0	0
NSE	0	0	0	0
Total	**0**	**502**	**0**	**0**
FTE	0.0	2.0	0.0	0.0

00776U 19103 SCG Fleet Fuel Management Phase II

Labor	0	0	0	624
Non-Labor	0	0	0	4,858
NSE	0	0	0	0
Total	**0**	**0**	**0**	**5,482**
FTE	0.0	0.0	0.0	5.4

00776V 19105 SoCalGas Facility Optimization and System Upgrade

Labor	0	0	62	22
Non-Labor	0	0	600	124
NSE	0	0	0	0
Total	**0**	**0**	**662**	**146**
FTE	0.0	0.0	0.5	0.2

00777K 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)

Labor	0	0	249	497
Non-Labor	0	0	1,476	1,476
NSE	0	0	0	0
Total	**0**	**0**	**1,725**	**1,973**
FTE	0.0	0.0	2.2	4.3

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776AC - 81444 FLEET M5 SYSTEM UPGRADE PH1

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AC - 81444 FLEET M5 SYSTEM UPGRADE PH1

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	234	0	0
Non-Labor	Zero-Based	0	0	0	0	0	268	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	502	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0

Business Purpose:

The current fleet application (M4 by Asset Works) is used to fully manage data and information for fleet at SCG and SDG&E. The program was initially implemented in 1999. AssetWorks rolled out their newer version, called M5 in 2001. In order to fully take advantages of the new benefits on M5 (timely information to business management & garages, increased fuel use tracking and enhanced reporting and data access capability) SoCalGas and SDG&E need to upgrade to M5.

Physical Description:

Upgrade the fleet application (M4) to a web based application (M5). Fleet focus will track all functions related to the maintenance of vehicles and equipment, including processing repair and preventive maintenance (PM) work orders, capturing operating expenses (eg, fuel, license, leases), and tracking for vehicle equipment usage.

Project Justification:

M5 will track all functions related to the maintenance of vehicles and equipment, including processing repair and preventive maintenance (PM) work orders, capturing operating expenses (eg, fuel, license, leases), and tracking for vehicle equipment usage.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: F. Fleet Services

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776AC - 81444 FLEET M5 SYSTEM UPGRADE PH1

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AC**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: F. Fleet Services

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776AC - 81444 FLEET M5 SYSTEM UPGRADE PH1

Workpaper Detail: 00776AC.001 - 81444 FLEET M5 SYSTEM UPGRADE PH1

In-Service Date: 06/30/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	234	0	0
Non-Labor	268	0	0
NSE	0	0	0
Total	502	0	0
FTE	2.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776U - 19103 SCG Fleet Fuel Management Phase II

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776U - 19103 SCG Fleet Fuel Management Phase II

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	624
Non-Labor	Zero-Based	0	0	0	0	0	0	0	4,858
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,482**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4

Business Purpose:

EJ Ward III, the current fuel management system is obsolete and not supported by the vendor. This project will replace EJ Ward III with software, hardware, and cellular data acquisition components that are fully vendor supported. The application will integrate with the new SoCalGas AssetWorks M5 fleet management application targeted for deployment in 4Q2016. The new system will provide capabilities to collect vehicle mileage and diagnostic information through the use of the company cellular network for optimized vehicle maintenance, tracking, and increase tracking of the green fleet that do not utilize the fueling island (currently, only vehicles that fuel at the fuel island are tracked).

Physical Description:

In-vehicle Hardware - Replace existing Ward 3 hardware with new hardware
Fuel Islands - Replace EJ Ward 3 fuel islands with new fuel islands
Software - Replace EJ Ward 3 software with new software

Project Justification:

System will optimize vehicle maintenance by providing accurate odometer readings (vehicle mileage), live diagnostic information and provide tracking of our increasing green fleet inventory. System will upgrade existing Fuel Islands to provide Ethernet/WiFi connectivity for increased reliability as well as provide added security by requiring an employee ID badge. The Proposed system presents $10MM in O&M cost avoidance compared to next best available system

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: F. Fleet Services

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776U - 19103 SCG Fleet Fuel Management Phase II

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776U**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776U - 19103 SCG Fleet Fuel Management Phase II
Workpaper Detail:	00776U.001 - 19103 SCG Fleet Fuel Management Phase II

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	624
Non-Labor	0	0	2,916
NSE	0	0	0
Total	**0**	**0**	**3,540**
FTE	0.0	0.0	5.4

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776U - 19103 SCG Fleet Fuel Management Phase II
Workpaper Detail:	00776U.002 - 19103 SCG Fleet Fuel Management Phase II

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	0	1,942
NSE	0	0	0
Total	**0**	**0**	**1,942**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776V - 19105 SoCalGas Facility Optimization and System Upgrade

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776V - 19105 SoCalGas Facility Optimization and System Upgrade

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	62	22
Non-Labor	Zero-Based	0	0	0	0	0	0	600	124
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**662**	**146**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2

Business Purpose:

After leveraging the platform for a year, team is continuing its optimization goals to further streamline and automate processes in order to provide better services while improving operational efficiencies. General Scope: Review current system performances, data architecture review, document requirements of key business processes and additional enhancement opportunities, ie document digitization, asset management - work order management, capital construction and capital planning, space planning and management, self-service, upgrade to 23v, deploy enhanced mobility platform.

Physical Description:

Business challenges include, SCG facility management staff, deferred maintenance, aging facilities and related assets, retiring workforce, environmental and sustainability pressures, emergency and employee safety, facility ops data 'silos', and stagnate data. in 2015, team successfully deployed v21.2. As as a result of the deployment, the team were able to reduce several process steps and redundancies, reduced data management activities by simplifying data types, cleaning/eliminating 40,000 corrupt and irreverent data points.

Project Justification:

Single facility and asset management platform database to support multiple departments and share facility related data such as interior and exterior site plans, equipment and other assets, work order management, environmental and safety compliance tracking, data and so forth. Sharing of data vs. individual silo approach to data management, real time automated reporting with Metrics and KPIs to support . Increase employee productivity by developing and streamlining a Facility Self Service Portal (ie reduce clicks for services) and Facility mobile apps. Reduce probability of future compliance risks (example: Auto alerts for compliance related activities).

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: F. Fleet Services

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776V - 19105 SoCalGas Facility Optimization and System Upgrade

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776V**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776V - 19105 SoCalGas Facility Optimization and System Upgrade
Workpaper Detail:	00776V.001 - 19105 SoCalGas Facility Optimization and System Upgrade

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	62	0
Non-Labor	0	300	0
NSE	0	0	0
Total	**0**	**362**	**0**
FTE	0.0	0.5	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776V - 19105 SoCalGas Facility Optimization and System Upgrade
Workpaper Detail:	00776V.002 - 19105 SoCalGas Facility Optimization and System Upgrade

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	300	0
NSE	0	0	0
Total	0	300	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776V - 19105 SoCalGas Facility Optimization and System Upgrade
Workpaper Detail:	00776V.003 - 19105 SoCalGas Facility Optimization and System Upgrade
In-Service Date:	02/28/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	22
Non-Labor	0	0	124
NSE	0	0	0
Total	0	0	146
FTE	0.0	0.0	0.2

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777K - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777K - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	249	497
Non-Labor	Zero-Based	0	0	0	0	0	0	1,476	1,476
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	1,725	1,973
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.2	4.3

Business Purpose:

After leveraging the platform for a year, team is continuing its optimization goals to further streamline and automate processes in order to provide better services while improving operational efficiencies. General Scope: Review current system performances, data architecture review, document requirements of key business processes and additional enhancement opportunities, ie document digitization, asset management - work order management, capital construction and capital planning, space planning and management, self-service, upgrade to 23v, deploy enhanced mobility platform.

Physical Description:

Business challenges include, SCG facility management staff, deferred maintenance, aging facilities and related assets, retiring workforce, environmental and sustainability pressures, emergency and employee safety, facility ops data 'silos', and stagnate data. in 2015, team successfully deployed v21.2. As as a result of the deployment, the team were able to reduce several process steps and redundancies, reduced data management activities by simplifying data types, cleaning/eliminating 40,000 corrupt and irreverent data points.

Project Justification:

Single facility and asset management platform database to support multiple departments and share facility related data such as interior and exterior site plans, equipment and other assets, work order management, environmental and safety compliance tracking, data and so forth. Sharing of data vs. individual silo approach to data management, real time automated reporting with Metrics and KPIs to support . Increase employee productivity by developing and streamlining a Facility Self Service Portal (ie reduce clicks for services) and Facility mobile apps. Reduce probability of future compliance risks (example: Auto alerts for compliance related activities).

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: F. Fleet Services

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777K - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777K**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777K - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)
Workpaper Detail:	00777K.001 - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	249	0
Non-Labor	0	1,476	0
NSE	0	0	0
Total	0	1,725	0
FTE	0.0	2.2	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	F. Fleet Services
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777K - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)
Workpaper Detail:	00777K.002 - 19104 SCG Fleet M5 Upgrade Phase III (BOBJ Compatible)

In-Service Date: 10/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	497
Non-Labor	0	0	1,476
NSE	0	0	0
Total	0	0	1,973
FTE	0.0	0.0	4.3

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	G. IT
Workpaper:	VARIOUS

Summary for Category: G. IT

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	4,558	12,447	9,229
Non-Labor	0	46,321	61,201	71,998
NSE	0	0	0	0
Total	**0**	**50,879**	**73,648**	**81,227**
FTE	0.0	39.6	108.2	80.0

00756K 19095 GEARS Upgrade - Ent. GIS 10.x

Labor	0	205	207	66
Non-Labor	0	696	637	248
NSE	0	0	0	0
Total	**0**	**901**	**844**	**314**
FTE	0.0	1.8	1.8	0.6

00766A 84273 SCG VIRTUAL DESKTOP EXPANSION (VDI)

Labor	0	286	0	0
Non-Labor	0	1,242	0	0
NSE	0	0	0	0
Total	**0**	**1,528**	**0**	**0**
FTE	0.0	2.5	0.0	0.0

00770A 81479 SCG OUT OF BAND MGMT

Labor	0	17	0	0
Non-Labor	0	334	0	0
NSE	0	0	0	0
Total	**0**	**351**	**0**	**0**
FTE	0.0	0.1	0.0	0.0

00770B 19081 SCG Self Support Small Cap 2017-2019 (Routine)

Labor	0	0	0	0
Non-Labor	0	944	944	944
NSE	0	0	0	0
Total	**0**	**944**	**944**	**944**
FTE	0.0	0.0	0.0	0.0

00772A 84272 SCG FAN - VOICE RADIO & DISPATCH

Labor	0	1,004	445	567
Non-Labor	0	8,521	6,097	3,952
NSE	0	0	0	0
Total	**0**	**9,525**	**6,542**	**4,519**
FTE	0.0	8.7	3.9	4.9

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Category: G. IT

Workpaper: VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00772B 84288 SCG COMM TIP TOP SHELTER REPLACEMENT				
Labor	0	66	0	0
Non-Labor	0	487	0	0
NSE	0	0	0	0
Total	**0**	**553**	**0**	**0**
FTE	0.0	0.6	0.0	0.0
00772C 84289 SCG COMM MOUNT DAVID SHELTER REPLACEMENT				
Labor	0	51	0	0
Non-Labor	0	406	0	0
NSE	0	0	0	0
Total	**0**	**457**	**0**	**0**
FTE	0.0	0.4	0.0	0.0
00772E 19089 Communications Reliability Shelter Replacement (Blythe)				
Labor	0	54	187	127
Non-Labor	0	402	510	309
NSE	0	0	0	0
Total	**0**	**456**	**697**	**436**
FTE	0.0	0.5	1.6	1.1
00772F 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)				
Labor	0	0	7	116
Non-Labor	0	0	67	546
NSE	0	0	0	0
Total	**0**	**0**	**74**	**662**
FTE	0.0	0.0	0.1	1.0
00772G 19091 Communications Reliability Shelter Replacement (Mt Soloman)				
Labor	0	0	7	116
Non-Labor	0	0	67	546
NSE	0	0	0	0
Total	**0**	**0**	**74**	**662**
FTE	0.0	0.0	0.1	1.0
00772H 19092 Communications Reliability Shelter Replacement (White Water)				
Labor	0	0	7	116
Non-Labor	0	0	67	546
NSE	0	0	0	0
Total	**0**	**0**	**74**	**662**
FTE	0.0	0.0	0.1	1.0
00772I 84306 SEU SESSION BORDER CONTROLLERS REFRESH				
Labor	0	16	0	0
Non-Labor	0	55	0	0
NSE	0	0	0	0
Total	**0**	**71**	**0**	**0**
FTE	0.0	0.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	G. IT
Workpaper:	VARIOUS

	In 2016$ (000)		
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00776AF 84325 SOFTWARE DEFINED DATA CENTER				
Labor	0	189	0	0
Non-Labor	0	4,327	0	0
NSE	0	0	0	0
Total	**0**	**4,516**	**0**	**0**
FTE	0.0	1.6	0.0	0.0
00776AG 84295 OFFICE 365 ENABLEMENT & ADOPTION				
Labor	0	447	0	0
Non-Labor	0	406	0	0
NSE	0	0	0	0
Total	**0**	**853**	**0**	**0**
FTE	0.0	3.9	0.0	0.0
00776C 84293 SAP ECC ON HANA				
Labor	0	331	58	0
Non-Labor	0	7,828	3,587	0
NSE	0	0	0	0
Total	**0**	**8,159**	**3,645**	**0**
FTE	0.0	2.9	0.5	0.0
00776D 84229 GIS MOBILE REPLACEMENT				
Labor	0	60	0	0
Non-Labor	0	914	0	0
NSE	0	0	0	0
Total	**0**	**974**	**0**	**0**
FTE	0.0	0.5	0.0	0.0
00776O 19085 Web Portal and Application Modernization				
Labor	0	0	246	0
Non-Labor	0	0	659	0
NSE	0	0	0	0
Total	**0**	**0**	**905**	**0**
FTE	0.0	0.0	2.1	0.0
00776P 19086 Software Defined Data Center Refresh 2019				
Labor	0	0	0	1,247
Non-Labor	0	0	0	9,658
NSE	0	0	0	0
Total	**0**	**0**	**0**	**10,905**
FTE	0.0	0.0	0.0	10.8
00776Q 19098 Big Data Advanced Analytics Enablement on SAS				
Labor	0	0	78	0
Non-Labor	0	0	779	0
NSE	0	0	0	0
Total	**0**	**0**	**857**	**0**
FTE	0.0	0.0	0.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	G. IT
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00776R 19099 Enterprise BPM Workflow				
Labor	0	0	605	0
Non-Labor	0	0	1,184	0
NSE	0	0	0	0
Total	**0**	**0**	**1,789**	**0**
FTE	0.0	0.0	5.3	0.0
00776S 19100 Environmental Tracking System Enhancements				
Labor	0	0	66	0
Non-Labor	0	0	634	0
NSE	0	0	0	0
Total	**0**	**0**	**700**	**0**
FTE	0.0	0.0	0.6	0.0
00776T 19101 SAP BI & Analytics Platform Upgrade				
Labor	0	0	208	0
Non-Labor	0	0	405	0
NSE	0	0	0	0
Total	**0**	**0**	**613**	**0**
FTE	0.0	0.0	1.8	0.0
00776W 19106 Source Code Management Modernization				
Labor	0	0	349	0
Non-Labor	0	0	80	0
NSE	0	0	0	0
Total	**0**	**0**	**429**	**0**
FTE	0.0	0.0	3.0	0.0
00776Y 19118 Enterprise Data Layer Ph1				
Labor	0	0	580	580
Non-Labor	0	0	2,496	2,496
NSE	0	0	0	0
Total	**0**	**0**	**3,076**	**3,076**
FTE	0.0	0.0	5.0	5.0
00777A 84308 Network Core Refresh (Qfabric Refresh)				
Labor	0	89	0	0
Non-Labor	0	787	0	0
NSE	0	0	0	0
Total	**0**	**876**	**0**	**0**
FTE	0.0	0.8	0.0	0.0
00777B 84256 SCG ENTERPRISE DESKTOP REFRESH				
Labor	0	172	76	0
Non-Labor	0	6,187	3,021	0
NSE	0	0	0	0
Total	**0**	**6,359**	**3,097**	**0**
FTE	0.0	1.5	0.7	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Category: G. IT

Workpaper: VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00777C 19076 Business Continuity Enhancement				
Labor	0	781	2,811	2,603
Non-Labor	0	6,047	20,984	31,006
NSE	0	0	0	0
Total	**0**	**6,828**	**23,795**	**33,609**
FTE	0.0	6.8	24.4	22.6
00777D 19077 Converged Computing Infrastructure 2018-2019				
Labor	0	0	717	727
Non-Labor	0	0	2,553	8,634
NSE	0	0	0	0
Total	**0**	**0**	**3,270**	**9,361**
FTE	0.0	0.0	6.2	6.3
00777E 19079 Local Area Network Refresh (2018)				
Labor	0	0	362	0
Non-Labor	0	0	2,093	0
NSE	0	0	0	0
Total	**0**	**0**	**2,455**	**0**
FTE	0.0	0.0	3.1	0.0
00777F 19080 Local Area Network Refresh (2019)				
Labor	0	0	0	362
Non-Labor	0	0	0	2,093
NSE	0	0	0	0
Total	**0**	**0**	**0**	**2,455**
FTE	0.0	0.0	0.0	3.1
00777G 19082 Private Network Refresh (2018)				
Labor	0	0	325	0
Non-Labor	0	0	3,730	0
NSE	0	0	0	0
Total	**0**	**0**	**4,055**	**0**
FTE	0.0	0.0	2.8	0.0
00777H 19083 Private Network Refresh (2019)				
Labor	0	0	0	396
Non-Labor	0	0	0	4,529
NSE	0	0	0	0
Total	**0**	**0**	**0**	**4,925**
FTE	0.0	0.0	0.0	3.4
00777I 19087 Wide Area Network Refresh (2018)				
Labor	0	0	973	0
Non-Labor	0	0	2,801	0
NSE	0	0	0	0
Total	**0**	**0**	**3,774**	**0**
FTE	0.0	0.0	8.5	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	G. IT
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00777J 19102 SCG Conf Room AV Upgrade				
Labor	0	0	1,828	0
Non-Labor	0	0	1,049	0
NSE	0	0	0	0
Total	**0**	**0**	**2,877**	**0**
FTE	0.0	0.0	15.9	0.0
00777M 19088 Wide Area Network Refresh (2019)				
Labor	0	0	0	647
Non-Labor	0	0	0	1,865
NSE	0	0	0	0
Total	**0**	**0**	**0**	**2,512**
FTE	0.0	0.0	0.0	5.6
00777O 84305 CONVERGED COMPUTING INFRASTRUCTURE				
Labor	0	127	0	0
Non-Labor	0	96	0	0
NSE	0	0	0	0
Total	**0**	**223**	**0**	**0**
FTE	0.0	1.1	0.0	0.0
00777P 19132 Pure Storage Upgrade				
Labor	0	24	0	0
Non-Labor	0	6,300	0	0
NSE	0	0	0	0
Total	**0**	**6,324**	**0**	**0**
FTE	0.0	0.2	0.0	0.0
00756L 19096 Sempra Lease Accounting and Reporting System				
Labor	0	639	0	0
Non-Labor	0	342	758	0
NSE	0	0	0	0
Total	**0**	**981**	**758**	**0**
FTE	0.0	5.6	0.0	0.0
00776N 19084 Sensitive Data Protection				
Labor	0	0	1,994	1,227
Non-Labor	0	0	3,599	2,059
NSE	0	0	0	0
Total	**0**	**0**	**5,593**	**3,286**
FTE	0.0	0.0	17.3	10.7
00786B 19115 FoF - Operational Awareness				
Labor	0	0	311	332
Non-Labor	0	0	2,400	2,567
NSE	0	0	0	0
Total	**0**	**0**	**2,711**	**2,899**
FTE	0.0	0.0	2.7	2.9

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00756K - 19095 GEARS Upgrade - Ent. GIS 10.x**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756K - 19095 GEARS Upgrade - Ent. GIS 10.x

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	205	207	66
Non-Labor	Zero-Based	0	0	0	0	0	696	637	248
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	901	844	314
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.8	1.8	0.6

Business Purpose:

The GEARS application consists of three primary components; a GIS based data processing tool, map services, and an environmental reporting application. Environmental Services spends significant time gathering information from disparate sources to produce annual reports. Improved data accuracies will save Environmental Services significant labor hours for annual reporting. This project will expand functionality, improve efficiency for the users and refine the work hierarchy which will enable more accurate and timely reporting. Updating the data processing models will improve system maintenance and improves environmental and compliance reporting. The upgrade to GEARS is required and must align with the Enterprise GIS 10.x Upgrade project in order to keep the versioning of the 2 applications in synch.

Physical Description:

This project focuses on system application upgrades, scripting upgrades and provides access to current data to enhance accuracy and usability.
* Data Management: The project will continue to maintain/develop necessary data interfaces. Project will develop and implement GIS technical tools to streamline data maintenance while also improving accuracy.
* Model Enhancement: Environmental model upgrade will ensure access to data/information necessary to meet compliance requirements and business planning, engineering, construction along with emergency response needs/objectives. The project will re-write the models to the new programming format and standard. The existing Models will be replaced with standard scripting to provide enhanced flexibility, increased stability and improves system robustness.
* Web Upgrade: The current Silverlight based web viewer is at end of life. Project will afford opportunity to determine the best web platform for deployment.

Project Justification:

By completing the upgrade project, the clients in the environmental department will be able to depend on the accuracy of the data and performance of the system. GEARS will be in synch with the versioning of the enterprise GIS and will eleimnate the risk of utilizing the WEB GIS as the Silverlight web viewer is targeted to be depracated by Microsoft.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00756K - 19095 GEARS Upgrade - Ent. GIS 10.x

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756K**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756K - 19095 GEARS Upgrade - Ent. GIS 10.x
Workpaper Detail:	00756K.001 - 19095 GEARS Upgrade - Ent. GIS 10.x

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	205	0	0
Non-Labor	696	0	0
NSE	0	0	0
Total	901	0	0
FTE	1.8	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00756K - 19095 GEARS Upgrade - Ent. GIS 10.x

Workpaper Detail: 00756K.002 - 19095 GEARS Upgrade - Ent. GIS 10.x

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	207	0
Non-Labor	0	637	0
NSE	0	0	0
Total	0	844	0
FTE	0.0	1.8	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00756K - 19095 GEARS Upgrade - Ent. GIS 10.x

Workpaper Detail: 00756K.003 - 19095 GEARS Upgrade - Ent. GIS 10.x

In-Service Date: 03/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	66
Non-Labor	0	0	248
NSE	0	0	0
Total	0	0	314
FTE	0.0	0.0	0.6

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00766A - 84273 SCG VIRTUAL DESKTOP EXPANSION (VDI)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00766.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00766A - 84273 SCG VIRTUAL DESKTOP EXPANSION (VDI)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	286	0	0
Non-Labor	Zero-Based	0	0	0	0	0	1,242	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**1,528**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0

Business Purpose:

This project will expand the capacity of the current Virtual Desktop Infrastructure (VDI) to support the decommissioning of the Citrix environment. Add necessary redundancy to enhance the reliability of the VDI infrastructure. Create development environment(s) to reduce resource impact to production. Procure "Enterprise VDI licensing" with tool sets necessary to support VDI's ever growing client base and support requirements.

Physical Description:

Build out additional VDI infrastructure and add incremental enterprise software licenses to support an additional 1,500 on premise users. Upgrade current VDI licensing to enterprise. (Total of 3000). Build self service portal for VDI. Decommission Citrix. Build VDI development platform supporting client requirements.

Project Justification:

•Decommissioning of the Citrix environment supporting IT&OTI strategic plan of moving to VDI (161 Virtual, 75 Physical Servers, plus the return of 48TB SAN Storage)
•Reduced reliance on aging and unsupported Citrix infrastructure
•Supports Bring Your Own Device (BYOD) for IT contractors
•Supports GIS, CMS, and NMS
•Supports Office 365 Strategy (Application remediation)
•Supports Windows 10 upgrade initiative
•Reduction in desktop provisioning time
•Current support team will support only VDI (Currently supporting Citrix and VDI)

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00766.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00766A - 84273 SCG VIRTUAL DESKTOP EXPANSION (VDI)

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00766A**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00766.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00766A - 84273 SCG VIRTUAL DESKTOP EXPANSION (VDI)

Workpaper Detail: 00766A.001 - 84273 SCG VIRTUAL DESKTOP EXPANSION (VDI)

In-Service Date: 05/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	286	0	0
Non-Labor	1,242	0	0
NSE	0	0	0
Total	1,528	0	0
FTE	2.5	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00770A - 81479 SCG OUT OF BAND MGMT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00770.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00770A - 81479 SCG OUT OF BAND MGMT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	17	0	0
Non-Labor	Zero-Based	0	0	0	0	0	334	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**351**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Business Purpose:

The project will implement Out of Band Management solution for 412 locations across the SCG service territories. The project scope will include procurement, deployment and configuration of 700 Out of Band Management devices. Providing this Out of Band Mgmt solution allows for network support personnel to remotely connect to all sites throughout the service territory regardless of the network state. This will enable faster response time and provide for continued coverage and support with limited resource availability.

Physical Description:

Out of Band Management for 149 SCG sites.

Project Justification:

The project will enable IT to meet ever growing network demands and achieve labor reductions through attrition and reduction of positions that are budgeted but unfilled.   This results in cost savings of $372k annually for SDGE. The project will also enable the Company to realize significant cost savings by reducing IT fleet size by 4 vehicles, eliminating the need to add new vehicles for filled vacancies and reducing the need to replace aging vehicles. This results in cost savings of $74k annually for SDGE and $9k annually for SCG. The reductions of these vehicles reduces our risks of CMVI for the Company, reduces fuel consumption and lessens gas emissions.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00770.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00770A - 81479 SCG OUT OF BAND MGMT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00770A**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00770.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00770A - 81479 SCG OUT OF BAND MGMT
Workpaper Detail:	00770A.001 - 81479 SCG OUT OF BAND MGMT
In-Service Date:	03/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	17	0	0
Non-Labor	334	0	0
NSE	0	0	0
Total	351	0	0
FTE	0.1	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00770B - 19081 SCG Self Support Small Cap 2017-2019 (Routine)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00770.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00770B - 19081 SCG Self Support Small Cap 2017-2019 (Routine)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	0	0	0	944	944	944
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**944**	**944**	**944**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Business Purpose:

Small Cap 2017 will cover individual capital purchases benefitting the overall network, security, collaboration and its operational efficiency. All purchases will fall within the confines of the capitalization rules, including some of the following guidelines:
- Primary use is to purchase replacements for defective, broken, or expired infrastructure. Utilization to address critical capacity issues is also acceptable.
- Hardware and Hardware labor ONLY
- Quotes should have line item detail to ensure compliance with capitalization policy
- No asset bundling or grouping
- SQL Server licenses not eligible

Physical Description:

This is funding to cover multiple SCG Small Cap projects for 2017 covering business customer operational issues, safety, network improvements, Information Security, faster service delivery, collaboration, and innovation.

Project Justification:

Improvements to employees who are on the receiving end of better operational systems and improvements. Some Small Cap projects improve the overall performance of the network, thereby making it easier for employees to do their job more effectively and efficiently.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00770.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00770B - 19081 SCG Self Support Small Cap 2017-2019 (Routine)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00770B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00770.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00770B - 19081 SCG Self Support Small Cap 2017-2019 (Routine)
Workpaper Detail:	00770B.001 - 19081 SCG Self Support Small Cap 2018-2019 (Routine)

In-Service Date: Not Applicable

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	944	944	944
NSE	0	0	0
Total	**944**	**944**	**944**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00772A - 84272 SCG FAN - VOICE RADIO & DISPATCH**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772A - 84272 SCG FAN - VOICE RADIO & DISPATCH

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	1,004	445	567
Non-Labor	Zero-Based	0	0	0	0	0	8,521	6,097	3,952
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**9,525**	**6,542**	**4,519**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	8.7	3.9	4.9

Business Purpose:

SCG Field Area Network (Voice and Dispatch) Project was developed to refresh our critical dispatch and voice radio system. This will ensure business continuity, enhance safety, and increase reliability and capacity for field area communications by replacing the current private obsolete communication infrastructure. The current dispatch system is at end-of-sale and services.

Physical Description:

Dispatch – Voice console system.
Voice Radio System:
Provides dispatchers the ability to coordinate and schedule priority work orders and support emergency communications throughout the service territory over the voice push to talk radio system. Dispatchers and the console system are the primary interface to critical public safety agencies during emergency situations or natural disasters.
Optimization and reconfiguration of the dispatch local area network as required to support project objective.
Provides necessary voice communications to all field personnel across the service territory in support of customer service field, transmission, distribution and storage operations. The system also provides critical voice communications during emergency situations or natural disasters.
System can be leveraged by other business units such as corporate security for secure intercompany voice communications. Third party information security penetration test and verification.

Project Justification:

•Business Continuity - Critical, company owned vital fallback/redundant Voice communication system providing territory wide coverage.
•Employee safety: Man Down - Lone Worker feature, Incident awareness: asset and workforce location with added GPS capabilities.
•Reliable & Enhanced radio coverage - Voice communications within the service territory.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772A - 84272 SCG FAN - VOICE RADIO & DISPATCH

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772A**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772A - 84272 SCG FAN - VOICE RADIO & DISPATCH

Workpaper Detail: 00772A.001 - 84272 SCG FAN - VOICE RADIO & DISPATCH

In-Service Date: 12/31/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	1,004	0	0
Non-Labor	8,521	0	0
NSE	0	0	0
Total	**9,525**	**0**	**0**
FTE	8.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772A - 84272 SCG FAN - VOICE RADIO & DISPATCH
Workpaper Detail:	00772A.002 - 84272 SCG FAN - VOICE RADIO & DISPATCH
In-Service Date:	12/31/2018
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	445	0
Non-Labor	0	6,097	0
NSE	0	0	0
Total	**0**	**6,542**	**0**
FTE	0.0	3.9	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772A - 84272 SCG FAN - VOICE RADIO & DISPATCH

Workpaper Detail: 00772A.003 - 84272 SCG FAN - VOICE RADIO & DISPATCH

In-Service Date: 09/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	567
Non-Labor	0	0	3,952
NSE	0	0	0
Total	0	0	4,519
FTE	0.0	0.0	4.9

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00772B - 84288 SCG COMM TIP TOP SHELTER REPLACEMENT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772B - 84288 SCG COMM TIP TOP SHELTER REPLACEMENT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	66	0	0
Non-Labor	Zero-Based	0	0	0	0	0	487	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**553**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0

Business Purpose:

This project replaces the current Tip Top fiberglass and wood shelter with a new concrete shelter. Purchase and transport the new shelter to Monterey Park, store it in place where Telecomm staff can ready it for production. Pre-deployment work includes installation of new electrical, new DC plant and cable tray. Build new footings to support the cement shelter on Tip Top.

Physical Description:

Replace shelter, move microwave and two-way radios from old shelter to new.

Project Justification:

The rotting structure, especially the floor, affects the safety of employees working at the site. Water leaking into the structure or a floor failure presents a risk of an outage to critical electronics. During an outage, locations downstream would have compromised or no services.
Tip Top is in a area prone to brush fires. The existing wood and fiberglass shelter has little resistance to fire. The new structure being concrete and steel construction should survive a brush fire almost unscathed.
The new shelter will cost less to maintain due to type of construction materials and is expected to last 50 or more years.
By replacing the shelter, our ability to maintain services to numerous locations during an emergency condition will be greatly enhanced . This site is critical to communications, local field operations, pipeline telemetry, and network reliability.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772B - 84288 SCG COMM TIP TOP SHELTER REPLACEMENT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772B**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772B - 84288 SCG COMM TIP TOP SHELTER REPLACEMENT

Workpaper Detail: 00772B.001 - 84288 SCG COMM TIP TOP SHELTER REPLACEMENT

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	66	0	0
Non-Labor	487	0	0
NSE	0	0	0
Total	553	0	0
FTE	0.6	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00772C - 84289 SCG COMM MOUNT DAVID SHELTER REPLACEMENT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772C - 84289 SCG COMM MOUNT DAVID SHELTER REPLACEMENT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	51	0	0
Non-Labor	Zero-Based	0	0	0	0	0	406	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	457	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0

Business Purpose:

Recently Verizon retired the shelter and microwave tower on Mt David next door to the Sempra site. Sempra purchased the mountain top from Verizon and we now own the old Verizon shelter which is a reinforced concrete block building.
This project is a remodel of the old Verizon site. Move Sempra Telecommunications hardware from our old shelter to the Verizon site. Then dismantle and haul away the old Sempra shelter and tower.

Physical Description:

Secure new location replacing fencing. Add security cameras and lights slaved off the current Sempra shelter 400' feet away. Remodel the structure. New paint, floors, electrical, HVAC, roof and backup generator. Move all Telecommunications hardware from the old site to the new site which must be back online Monday morning.

Project Justification:

The rotting structure, especially the floor, affects the safety of employees working at the site. Water leaking into the structure or a floor failure presents a risk of an outage to critical electronics. During an outage, locations downstream would have compromised or no services.
Mount David is in a area prone to brush fires. The existing wood and fiberglass shelter has little resistance to fire. The new structure is an existing reinforced block concrete block that should survive a brush fire almost unscathed.
The new shelter will cost less to maintain due to type of construction materials and is expected to last 50 or more years.
By relocating to the newly remodeled building, our ability to maintain services to numerous locations during an emergency condition will be greatly enhanced . This site is critical to communications, local field operations, pipeline telemetry, and network reliability.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772C - 84289 SCG COMM MOUNT DAVID SHELTER REPLACEMENT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772C**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772C - 84289 SCG COMM MOUNT DAVID SHELTER REPLACEMENT
Workpaper Detail:	00772C.001 - 84289 SCG COMM MOUNT DAVID SHELTER REPLACEMENT

In-Service Date: 09/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	51	0	0
Non-Labor	406	0	0
NSE	0	0	0
Total	**457**	**0**	**0**
FTE	0.4	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00772E - 19089 Communications Reliability Shelter Replacement (Blythe)**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772E - 19089 Communications Reliability Shelter Replacement (Blythe)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	54	187	127
Non-Labor	Zero-Based	0	0	0	0	0	402	510	309
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**456**	**697**	**436**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.5	1.6	1.1

Business Purpose:

Purchase and transport shelter to Monterey Park, store it in place where Telecomm staff can ready it for production. Install new electrical, purchase a new DC plant, cable tray. Build new footings to support new shelter at mountain top location.

Physical Description:

This project will replace a telecommunications shelter that has been determined to be structurally unsound. Water leaking into the structure has dry rotted the wood. Fiberglass is sun damaged and rotted. There will also be an additional shelter purchased for additional capacity due to existing shelter is already at maximum capacity. The additional shelter will serve as the MDF/Server room for the facility.

Project Justification:

Prevent loss of communications to critical SCG locations (example Gas Control and Operations sites). New shelter is made of fire proof materials.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772E - 19089 Communications Reliability Shelter Replacement (Blythe)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772E**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772E - 19089 Communications Reliability Shelter Replacement (Blythe)

Workpaper Detail: 00772E.001 - 19089 Communications Reliability Shelter Replacement (Blythe)

In-Service Date: 12/31/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	54	0	0
Non-Labor	402	0	0
NSE	0	0	0
Total	456	0	0
FTE	0.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772E - 19089 Communications Reliability Shelter Replacement (Blythe)
Workpaper Detail:	00772E.002 - 19089 Communications Reliability Shelter Replacement (Blythe)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	187	0
Non-Labor	0	510	0
NSE	0	0	0
Total	**0**	**697**	**0**
FTE	0.0	1.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772E - 19089 Communications Reliability Shelter Replacement (Blythe)
Workpaper Detail:	00772E.003 - 19089 Communications Reliability Shelter Replacement (Blythe)

In-Service Date: 04/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	127
Non-Labor	0	0	309
NSE	0	0	0
Total	0	0	436
FTE	0.0	0.0	1.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00772F - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772F - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	7	116
Non-Labor	Zero-Based	0	0	0	0	0	0	67	546
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**74**	**662**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0

Business Purpose:

Purchase and transport shelter to Monterey Park, store it in place where Telecomm staff can ready it for production. Install new electrical, purchase a new DC plant, cable tray. Build new footings to support new shelter at mountain top location.

Physical Description:

This project will replace a telecommunications shelter that has been determined to be structurally unsound. Water leaking into the structure has dry rotted the wood. Fiberglass is sun damaged and rotted.

Project Justification:

Prevent loss of communications to critical SCG locations (example Gas Control and Operations sites). New shelter is made of fire proof materials.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772F - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772F - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)
Workpaper Detail:	00772F.001 - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	7	0
Non-Labor	0	67	0
NSE	0	0	0
Total	0	74	0
FTE	0.0	0.1	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772F - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)

Workpaper Detail: 00772F.002 - 19090 Communications Reliability Shelter Replacement (Cactus City Ridge)

In-Service Date: 08/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	116
Non-Labor	0	0	546
NSE	0	0	0
Total	**0**	**0**	**662**
FTE	0.0	0.0	1.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group

00772G - 19091 Communications Reliability Shelter Replacement (Mt Soloman)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772G - 19091 Communications Reliability Shelter Replacement (Mt Soloman)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	7	116
Non-Labor	Zero-Based	0	0	0	0	0	0	67	546
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	74	662
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0

Business Purpose:

Purchase and transport shelter to Monterey Park, store it in place where Telecomm staff can ready it for production. Install new electrical, purchase a new DC plant, cable tray. Build new footings to support new shelter at mountain top location.

Physical Description:

This project will replace a telecommunications shelter that has been determined to be structurally unsound. Water leaking into the structure has dry rotted the wood. Fiberglass is sun damaged and rotted.

Project Justification:

Prevent loss of communications to critical SCG locations (example Gas Control and Operations sites). New shelter is made of fire proof materials.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772G - 19091 Communications Reliability Shelter Replacement (Mt Soloman)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772G**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772G - 19091 Communications Reliability Shelter Replacement (Mt Soloman)
Workpaper Detail:	00772G.001 - 19091 Communications Reliability Shelter Replacement (Mt Soloman)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	7	0
Non-Labor	0	67	0
NSE	0	0	0
Total	**0**	**74**	**0**
FTE	0.0	0.1	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772G - 19091 Communications Reliability Shelter Replacement (Mt Soloman)
Workpaper Detail:	00772G.002 - 19091 Communications Reliability Shelter Replacement (Mt Soloman)

In-Service Date: 08/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	116
Non-Labor	0	0	546
NSE	0	0	0
Total	**0**	**0**	**662**
FTE	0.0	0.0	1.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group

00772H - 19092 Communications Reliability Shelter Replacement (White Water)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772H - 19092 Communications Reliability Shelter Replacement (White Water)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	7	116
Non-Labor	Zero-Based	0	0	0	0	0	0	67	546
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	74	662
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0

Business Purpose:

Purchase and transport shelter to Monterey Park, store it in place where Telecomm staff can ready it for production. Install new electrical, purchase a new DC plant, cable tray. Build new footings to support new shelter at mountain top location.

Physical Description:

This project will replace a telecommunications shelter that has been determined to be structurally unsound. Water leaking into the structure has dry rotted the wood. Fiberglass is sun damaged and rotted.

Project Justification:

Prevent loss of communications to critical SCG locations (example Gas Control and Operations sites). New shelter is made of fire proof materials.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00772.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00772H - 19092 Communications Reliability Shelter Replacement (White Water)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772H**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772H - 19092 Communications Reliability Shelter Replacement (White Water)
Workpaper Detail:	00772H.001 - 19092 Communications Reliability Shelter Replacement (White Water)

In-Service Date: 08/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	7	0
Non-Labor	0	67	0
NSE	0	0	0
Total	0	74	0
FTE	0.0	0.1	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772H - 19092 Communications Reliability Shelter Replacement (White Water)
Workpaper Detail:	00772H.002 - 19092 Communications Reliability Shelter Replacement (White Water)

In-Service Date: 08/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	116
Non-Labor	0	0	546
NSE	0	0	0
Total	**0**	**0**	**662**
FTE	0.0	0.0	1.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00772I - 84306 SEU SESSION BORDER CONTROLLERS REFRESH**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772I - 84306 SEU SESSION BORDER CONTROLLERS REFRESH

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	16	0	0
Non-Labor	Zero-Based	0	0	0	0	0	55	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**71**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Business Purpose:

This project will refresh the current shared Session Border Controllers hardware and enhance visibility and management of the SBC's by acquiring the Enterprise Operations Manager and Enterprise Communication Broker software.
The current configuration of one Session Border Controller in each Data Center will be upgraded to a HA (Highly Available) configuration with two Session Border Controllers in each Data Center. The HA configuration provides continuous service in the event one Session Border Controller fails.

Physical Description:

Session Border Controller in Rancho Bernardo Data Center.
Session Border Controller in Monterey Park Data Center.
Installation of new software - Enterprise Operations Manager and Enterprise Communication Broker.

Project Justification:

Upgrading the system will ensure the company has a reliable, highly available and supportable infrastructure for both Skype for Business - Voice and the Avaya telephony network currently in use.
HA configuration will:
•Provide a higher level of reliability and availability than current state
•Redundant configuration
•Ensure continuous service in the event of an SBC failure
Enterprise Operations Manager and Enterprise Communication Broker software will:
•Provide enhanced monitoring capabilities
•Provide ease of configuration and administration
•Enable the NOC to proactively monitor the health of the SBC's
•Faster problem resolution
•Positions us with the tools to manage and control Skype for Business - Voice

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772I - 84306 SEU SESSION BORDER CONTROLLERS REFRESH

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00772I**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00772.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00772I - 84306 SEU SESSION BORDER CONTROLLERS REFRESH
Workpaper Detail:	00772I.001 - 84306 SEU SESSION BORDER CONTROLLERS REFRESH

In-Service Date: 04/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	16	0	0
Non-Labor	55	0	0
NSE	0	0	0
Total	**71**	**0**	**0**
FTE	0.1	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776AF - 84325 SOFTWARE DEFINED DATA CENTER**

Southern California Gas Company
2019 GRC - APP
Capital Workpapers

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AF - 84325 SOFTWARE DEFINED DATA CENTER

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	189	0	0
Non-Labor	Zero-Based	0	0	0	0	0	4,327	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	4,516	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0

Business Purpose:

Software Defined Data Center (SDDC) is the next logical investment for the company. It strengthens the Data Center foundation by integrating our current VMware environment with future technology investments such as Juniper 10K/QFX, VMware Network Virtualization (NSX) and vRealize Network Insight. The integrated technologies will allow the server and their network configurations and firewall rules to be managed by a single standardized set of tools.
Project will also migrate existing switch configurations to NSX, integrate existing Juniper 10K/QFX switch infrastructure with NSX and migrate existing zone-based security rule sets to host-based configurations managed by vRealize. Additionally, lay the ground work to run, manage and secure applications across various platforms and devices; including cloud.

Physical Description:

Fully Virtualized Infrastructure through VMware NSX deployment.
Customer-Ready Software-Defined Solutions.
Replacement of physical switches, routers and firewalls used by ESX hosts.
Cloud readiness using Arkin Security.
Disaster Recovery, network design, development, failover and testing.

Project Justification:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY
Witness: Christopher R. Olmsted
Budget Code: 00776.0
Category: G. IT
Category-Sub: 1. Technical Obsolescence
Workpaper Group: 00776AF - 84325 SOFTWARE DEFINED DATA CENTER

•Efficiency and lower costs: Virtualized IT services and automated operations management drive down capital, operational and maintenance costs. This includes improved efficiency in terms of data center processing power, optimized infrastructure utilization as well as efficiency of invested human effort and data center footprint.
•Application provisioning: Policy-based configuration allows delivery workloads with resource levels automatically adjusted to meet continually changing business demands.
•Workload provisioning: Faster provisioning by automating business logic across compute, storage, firewall, and load-balancing components. Business logic can be pre-programmed for specific applications. Provision workload both internally and with third-party hosting environments.
•Optimal availability and security for applications: Automated business continuity and virtualization-aware security combine to provide exceptional uptime and control over resource access and placement.
•Workload delivered anywhere: Run both new and existing applications across multiple platforms including cloud, with instant delivery to any user on any desktop or mobile device.
•Agility and flexibility: Faster and automated workload provisioning, including internal, external (AWS) provisioning and pre-programmed business logic across compute, storage and firewall and load-balancing services. Accelerate IT processes and IT agility especially around deployment and provisioning assets and services.
•Service availability: Dramatic simplification of incident / disaster recovery events. Accelerates the use of pre-scripted maintenance moves to reduce planned and unplanned downtime risk.
•Special considerations: Reduction in cost and time required to implement Monterey Park data center migration as well as reduction in outage windows required for QFabric implementation.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AF - 84325 SOFTWARE DEFINED DATA CENTER

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AF**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776AF - 84325 SOFTWARE DEFINED DATA CENTER

Workpaper Detail: 00776AF.001 - 84325 SOFTWARE DEFINED DATA CENTER

In-Service Date: 06/30/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	189	0	0
Non-Labor	4,327	0	0
NSE	0	0	0
Total	**4,516**	**0**	**0**
FTE	1.6	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776AG - 84295 OFFICE 365 ENABLEMENT & ADOPTION**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AG - 84295 OFFICE 365 ENABLEMENT & ADOPTION

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	447	0	0
Non-Labor	Zero-Based	0	0	0	0	0	406	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**853**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0

Business Purpose:

This project will Enable/implement core Office 365 tool suite, to include associated information governance and information security controls, to span the following set of services/systems:
•Email – Hybrid (cloud-on w/ minimal on-premise) implementation of Exchange Online-Exchange 2016
•Build new scaled down on-premise Exchange environment
•Collaboration - Hybrid (cloud-on premise) implementation of SharePoint Online-SharePoint 2016
•Conferencing/Instant Messaging - Hybrid (cloud-on premise) implementation of Skype for Business; integration with (and limited refresh of) legacy conference room technology (Polycom, Telepresence)
•Personal Storage – OneDrive for Business
•Identity Management/Federation – implement Azure AD Premium; ADFS and Identity Management (limited scope)
•Voice - Integration with Skype; pilot Skype voice and softphone
•Network - Enable high-bandwidth connectivity with Microsoft data centers; expand internal capacity as needed to ensure minimal performance issues with cloud based Office 365 services

Physical Description:

Email – upgrade; migrate all mailboxes to Online
Collaboration – upgrade SharePoint; re-write ~80% of sites to SharePoint Online; remainder of sites to SP 2016 on premise
Instant Messaging
Web/Audio Conferencing
Personal file storage
Identity Management/Federation
Voice
Network

Project Justification:

•Enable employees to be productive anytime, anywhere, on any device, securely – access to data/applications, consistent user experience across all devices, work offline/online (always on VPN)
•Foster a culture of collaboration and innovation – internal and external
•Reduce investment and operational costs while enabling latest and greatest technology – limited-to-no infrastructure footprint (reduced O&M labor and capital replacement costs), always on latest Microsoft product releases
•Support a long term Bring Your Own Technology (BYOT) strategy

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776AG - 84295 OFFICE 365 ENABLEMENT & ADOPTION

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00776AG

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AG - 84295 OFFICE 365 ENABLEMENT & ADOPTION
Workpaper Detail:	00776AG.001 - 84295 OFFICE 365 ENABLEMENT & ADOPTION

In-Service Date: 08/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	447	0	0
Non-Labor	406	0	0
NSE	0	0	0
Total	853	0	0
FTE	3.9	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776C - 84293 SAP ECC ON HANA**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776C - 84293 SAP ECC ON HANA

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	331	58	0
Non-Labor	Zero-Based	0	0	0	0	0	7,828	3,587	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**8,159**	**3,645**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.9	0.5	0.0

Business Purpose:

The project will enhance the SAP ECC system, with application and database upgrades, from Oracle database to the SAP HANA platform. Additional upgrades for connected SAP solutions are in scope: SAP Process Integration (PI), SAP Portal, Adobe Document Services (ADS) and Solution Manager (SolMan). Replacement of the disaster recovery environment is in-scope for the systems listed above, and the reclassification of those SAP solutions to a DR Tier 1 (24 hour recovery) from the current DR Tier 3 (5 days recovery) including changes to process and technology. Also in scope is the implementation of a new project environment with production system change management processes to enable ongoing system updates in order to maintain vendor supportability and security compliance. Test management transformation and modernization are scoped into this project and include test automation and ongoing organization change management (people, process, technology) to maintain current test cases and position the company for applying regular SAP patches, support packs, and upgrades once this project is complete. Data archiving is also included and may utilize the existing solution (Auritas) or implement SAP's ILM (Information Lifecycle Mgmt) pending technical alternatives evaluation.

Physical Description:

ECC HANA implementation and activation of single sign-on
SAP PI upgrade
SAP Solution Manager upgrade
SAP Portal and SAP Adobe Document Services upgrades
New servers for ECC
Replacement of the disaster recovery environment
Development and implementation of a comprehensive regression testing strategy and patch/service pack/upgrade capability (people, process, technology)

Project Justification:

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776C - 84293 SAP ECC ON HANA

•In memory computing is expected to reduce processing time up to 50% for most business processes and transactions
•In memory computing provides data compression of 5 to 1 reducing the storage footprint and associated storage growth costs
•Supports the CIS strategy
•Aligns with SAP's strategy focusing all enhancements and innovation on the HANA platform
•Aligns with Sempra's SAP optimization roadmap
•2015 Business Warehouse (BW) on HANA – completed
•2017 Enterprise Core Component (ECC) on HANA – proposed
•2017-2018 S/4HANA
•2018-2019 Supplier Relationship Management (SRM), Governance Risk and Compliance (GRC)
•Provides improvements in support of new business initiatives
•Gas transmission leak survey, additional gas transmission and storage M&I needs, gas enterprise asset management - EAM
•Reduces the risk of system failures
•Components in the current environment will be end of life in 2-5 year

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776C - 84293 SAP ECC ON HANA

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776C**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776C - 84293 SAP ECC ON HANA

Workpaper Detail: 00776C.001 - 84293 SAP ECC ON HANA

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	331	0	0
Non-Labor	6,123	0	0
NSE	0	0	0
Total	6,454	0	0
FTE	2.9	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776C - 84293 SAP ECC ON HANA
Workpaper Detail:	00776C.002 - 84293 SAP ECC ON HANA

In-Service Date: 06/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	1,705	0	0
NSE	0	0	0
Total	**1,705**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776C - 84293 SAP ECC ON HANA

Workpaper Detail: 00776C.003 - 84293 SAP ECC ON HANA

In-Service Date: 03/31/2018

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	0	58	0
Non-Labor	0	3,587	0
NSE	0	0	0
Total	**0**	**3,645**	**0**
FTE	0.0	0.5	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776D - 84229 GIS MOBILE REPLACEMENT**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776D - 84229 GIS MOBILE REPLACEMENT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	60	0	0
Non-Labor	Zero-Based	0	0	0	0	0	914	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	974	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0

Business Purpose:

Project will focus on selecting and implementing a new mobile software application that is based on new technology that will resolve the current performance, ease-of-use and replications obstacles. Selected software will be based on providing more conducive redlining and workflow options/considerations that will support such needs as service order processing, damage assessment and GMDT posting (GIS correction administration). Software can provide an efficient/effective interface to ClickMobile (map display of scheduled work) and will be compatible with Windows 7/8/10, Android and iOS, providing a common look and feel across multiple hardware platforms. From a support stand point selection will provide the ability to automatically push application updates (Sync) to clients through network connection. Project will be phased: Phase 1 will include SDGE with limited Electric only deployment in 2016, Phase 2 will include remaining SDG&E Gas and Electric users and Phase 3 will include SCG's deployment in 2016-17. In 2016 project will administer two checkpoints (Sept & Dec) with Gas Engrg & Sys Integrity and Gas Ops to assess viability of joint users (Gas/Electric) and current state of new ESRI Utility and Pipeline Data Model (UPDM)

Physical Description:

To adequately resolve GIS mobile problems will need to upgrade to modern application that leverages new technology:
•Cached Tiling
•Targeted content services
•Configurability

Project Justification:

Replacement of the GIS Mobile Software Application will significantly improve a wide range of users experiences and efficiencies associated with the applications performance and usability. A modern application (user interface) will also improve user acceptance of the Enterprise GIS. Improved interface options with Click Mobile will provide additional opportunity to share data and in turn enhance field processing. Work flow options will allow for more economical and efficient development/implementation of formal work processes that will further ensure data accuracy. Mobile replacement will also provide more hardware options associated with office and field access, MDTs, laptops, tablets and smart phones. Upgrade will reduce resources supporting nightly/weekly replication. Enhancements will improve SDG&E Electric overall regulatory and compliance position while also supporting safety initiatives.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776D - 84229 GIS MOBILE REPLACEMENT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776D**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776D - 84229 GIS MOBILE REPLACEMENT

Workpaper Detail: 00776D.001 - 84229 GIS MOBILE REPLACEMENT

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	60	0	0
Non-Labor	820	0	0
NSE	0	0	0
Total	**880**	**0**	**0**
FTE	0.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776D - 84229 GIS MOBILE REPLACEMENT
Workpaper Detail:	00776D.002 - 84229 GIS MOBILE REPLACEMENT

In-Service Date: 08/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	94	0	0
NSE	0	0	0
Total	**94**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776O - 19085 Web Portal and Application Modernization**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776O - 19085 Web Portal and Application Modernization

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	246	0
Non-Labor	Zero-Based	0	0	0	0	0	0	659	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**905**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0

Business Purpose:

EWE will be retired and replaced with a new standardized web hosting environment. EWE is currently on Windows 2003 (unsupported) and Windows 2008 physical servers. A self-service web portal (Azure) and application modernization effort is proposed to re-engineer the EWE associated applications. The EWE environment has experienced hardware failures, and vulnerability protection software had to be purchased. The new solution shall provide an enterprise, virtualized, agile, and scalable solution, and has been approved by START. The new supported virtualized envornment will be Windows2012.

Physical Description:

All applications hosted on the existing EWE infrastructure are in scope. Major web sites/applications include SempraNet, Gas Lines, and PowerUp plus approximately 200 other web sites. Estimate assumes PaaS (Platform as a Service) and Iaas (Infrastructure as a Service). Concept does not include costs associated to a public cloud solution or disaster receovery. Scope represents a portion of the 200+ web sites. Non-labor includes vendor services but not infrastructure.

Project Justification:

Reduced development costs and improved time to production. Self-service will enable web content creators and application teams to control deployments from development to production. Supportability, reliability, and security will improve by migrating to new hardware and supported operating system and a stable platform. Support and database provisioning costs will be reduced. Obsolete and aging hardware and software will be phased out. Azure environment will prepare for move to the cloud. Physical disk space limitations will be avoided due to NAS storage on virtual machines. Coldfusion applications will be re-written and modernized in PHP. Application monitoring will be available. New environment will be fully supported for hardware/software/licensing. New environment will be scalable and include integration with GIT source control.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776O - 19085 Web Portal and Application Modernization

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776O**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776O - 19085 Web Portal and Application Modernization

Workpaper Detail: 00776O.001 - 19085 Web Portal and Application Modernization

In-Service Date: 11/30/2018

Description:

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	246	0
Non-Labor	0	527	0
NSE	0	0	0
Total	**0**	**773**	**0**
FTE	0.0	2.1	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776O - 19085 Web Portal and Application Modernization

Workpaper Detail: 00776O.002 - 19085 Web Portal and Application Modernization

In-Service Date: 11/30/2018

Description:

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	132	0
NSE	0	0	0
Total	**0**	**132**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776P - 19086 Software Defined Data Center Refresh 2019

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776P - 19086 Software Defined Data Center Refresh 2019

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	1,247
Non-Labor	Zero-Based	0	0	0	0	0	0	0	9,658
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	10,905
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8

Business Purpose:

Continue the strategic approach of Software Defined Data Center (SDDC). Strengthen the Data Center foundation by integrating ALL of our current VMware environment with future technology investments. The integrated technologies will significantly increase efficiencies through automation of server provisioning, their network configurations and firewall rules. Project will advance the existing switch configurations to NSX Ver. XX. Integrate existing Juniper 10K/QFX hardware infrastructure with NSX and migrate existing zone-based security rule sets to host-based configurations. Additionally, advance the effectiveness of managing the operation of secure applications across various platforms and devices; including hybrid internal/external cloud.

Physical Description:

-Fully refresh the Virtualized Infrastructure through Vmware NSX upgrade.
-Stregthen the Customer-Ready Software capabilities: 1) Right availability, 2) Security for applications and 3) Workload delivered anywhere.
-Advance the management of Cloud security. Refresh the Disaster Recovery network design and development, failover, testing.
-Upgrade the Data center network security infrastructure (firewalls, IPS, etc.)

Project Justification:

Efficiency and lower costs: Virtualized IT services and automated operations management drive down capital and operational and maintenance costs.
Application provisioning: Policy-based configuration allows for delivery of workloads with resource levels automatically adjusted to meet continually changing business demands.
Workload provisioning: Faster provisioning by automating business logic across compute, storage, firewall, and load-balancing components. Business logic can be pre-programmed for specific applications.
Right availability and security for applications: Automated business continuity and virtualization-aware security combine to provide exceptional uptime and control over resource access and placement.
Workload delivered anywhere: Run both new and existing applications across multiple platforms including cloud, with instant delivery to any user on any desktop or mobile device.
Agility and flexibility: Faster and automated workload provisioning, including internal, external (AWS) provisioning and pre-programmed business logic across compute, storage and firewall and load-balancing services.
Service availability: Dramatic simplification of incident / disaster recovery events. Accelerates the use of pre-scripted maintenance moves to reduce planned and unplanned downtime risk.
Information security: Improved security posture for East-West traffic via host-based security policies.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776P - 19086 Software Defined Data Center Refresh 2019

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776P**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776P - 19086 Software Defined Data Center Refresh 2019
Workpaper Detail:	00776P.001 - 19086 Software Defined Data Center Refresh 2019

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	1,247
Non-Labor	0	0	9,658
NSE	0	0	0
Total	**0**	**0**	**10,905**
FTE	0.0	0.0	10.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776Q - 19098 Big Data Advanced Analytics Enablement on SAS**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Q - 19098 Big Data Advanced Analytics Enablement on SAS

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	78	0
Non-Labor	Zero-Based	0	0	0	0	0	0	779	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	857	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0

Business Purpose:

This project will enable business areas with the capabilities to perform advanced analytics using huge amounts of diverse data from Hadoop, HANA, and SAP/BW platforms. The current SAS platform is lack of tools to meet the growing demands to analyze huge amount of datasets in the Hadoop, HANA or SAP. It is also vulnerable with only one single Production server in place, without any capabilities to test new software, patches or to troubleshoot issues affecting production. Finally, there is no simple tool for data scientists to load SAS datasets or other important ad-hoc data into Hadoop without writing complex MapReduce codes or requiring IT help. This project will build a strong SAS analytics platform to enable Big Data analytics, as well as provide self-service tools to empower users to perform analytics faster and in more iterations. Hence allowing business to make more effective data driven decisions.

Physical Description:

This project will purchase and install:
1) High Performance Analytics (HPA) Data Mining HW and SW to enable in-memory processing of SAS Models and procedures containing large volume of diverse data from the Hadoop Data Lake and HANA
2) SAS Data Surveyor to allow any users to connect directly to SAP or BW
3) SAS Data Loader to empower Data Scientist to load SAS data sets and other data in and out of Hadoop quickly and easily without writing code
4) A SAS Test Server environment. 5) Upgrade SAS 9.4 Release M2 to M3 to enable better security and Monitoring capabilities

Project Justification:

This project will deliver a powerful SAS Advanced Analytics platform with new self-service tools to perform analytics with any data inside Hadoop and/or SAP (HANA, BW and ECC). It will enable all operations (Customer, Gas distribution, Electric & Transmission etc.) across both utilities to integrate data seamlessly and enabling fast in-memory processing. SAS High Performance Analytics (HPA) enables business users to develop and process models that use huge amounts of diverse data. Users can analyze big data to derive more accurate insights and make timely business decisions. Results are delivered in near-real time (typically in minutes, rather than hours). SAS Data Loader for Hadoop makes it easy for business users or data scientists to perform big data integration, data quality and data preparation tasks without writing complex MapReduce code or asking for IT help. SAS Data Surveyor enables users to quickly and efficiently integrate SAP data with other data sources to gain better insights with disperse datasets providing a complete view of the enterprise for business analytics and reporting needs. Deploying a SAS test environment eliminates the risk of testing new software releases and new predictive models in the production SAS environment.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776Q - 19098 Big Data Advanced Analytics Enablement on SAS

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776Q**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Q - 19098 Big Data Advanced Analytics Enablement on SAS
Workpaper Detail:	00776Q.001 - 19098 Big Data Advanced Analytics Enablement on SAS
In-Service Date:	05/31/2018
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	78	0
Non-Labor	0	545	0
NSE	0	0	0
Total	0	623	0
FTE	0.0	0.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Q - 19098 Big Data Advanced Analytics Enablement on SAS
Workpaper Detail:	00776Q.002 - 19098 Big Data Advanced Analytics Enablement on SAS

In-Service Date: 05/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	234	0
NSE	0	0	0
Total	**0**	**234**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776R - 19099 Enterprise BPM Workflow**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776R - 19099 Enterprise BPM Workflow

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	605	0
Non-Labor	Zero-Based	0	0	0	0	0	0	1,184	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**1,789**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0

Business Purpose:

Implement automated business process management (BPM)/workflow/case management tool across the enterprise. Automate currently manual business processes - anything that requires a wet signature or email approval, routing work across multiple business groups, etc. Provide core IT tool/capability to enable retirement of legacy/home grown systems - Access DBs, Cold Fusion, WOT, etc. Develop/implement joint IT-business competency center, responsible for developing/maintaining workflows.

Physical Description:

Install system for SDGE only. Note 1: SCG concept doc exists for entire enterprise - this one needed for SDGE if SCG doc is not approved. Note 2: if PegaSystems is selected solution, potentially migrate from cloud instance to on premise). Integrate with HR Repository and SAP to synchronize various approval hierarchies. Develop APIs (if not already pre-built) to facilitate BPM integration with major systems, depending on prioritized use cases - SAP (ECC, CPD, etc.), CISCO, GIS, Click, SORT, etc.. Develop core set of workflows to address various business use cases. Design/implement organizational support model to sustain and grow capability.

Project Justification:

Increase efficiency and transparency of multiple business processes across the organization
Enable centralized process management and control
Improve process compliance and simplify audit capabilities
Enable retirement of home-grown Access DBs and similar end of life or unsupported work management solutions
Increase agility and 'time to market' to develop new solutions
Labor savings from reduced development time

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776R - 19099 Enterprise BPM Workflow

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776R**

Area: INFORMATION TECHNOLOGY
Witness: Christopher R. Olmsted
Budget Code: 00776.0
Category: G. IT
Category-Sub: 1. Technical Obsolescence
Workpaper Group: 00776R - 19099 Enterprise BPM Workflow
Workpaper Detail: 00776R.001 - 19099 Enterprise BPM Workflow

In-Service Date: 05/31/2018
Description:

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	605	0
Non-Labor	0	580	0
NSE	0	0	0
Total	0	1,185	0
FTE	0.0	5.3	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776R - 19099 Enterprise BPM Workflow

Workpaper Detail: 00776R.002 - 19099 Enterprise BPM Workflow

In-Service Date: 05/31/2018

Description:

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	604	0
NSE	0	0	0
Total	0	604	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776S - 19100 Environmental Tracking System Enhancements**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776S - 19100 Environmental Tracking System Enhancements

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	66	0
Non-Labor	Zero-Based	0	0	0	0	0	0	634	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**700**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0

Business Purpose:

Environmental Tracking System - ETS. The Environmental department requires several applications (Desktop, Web, GEARS and ETS) for its daily operations. These are enhancements/upgrades and data model expansions to keep pace with escalating regulatory, reliability, safety, service, efficiency and growth requirements.

Physical Description:

The scope of this project is to identify, evaluate, prioritize and/or implement essential SDG&E Environmental enhancements such as: Key Environmental Permit data system updates; Data Model development; improved data consistency; GEARS interface upgrades (GIS); optimizing data validation for improved metric reporting; Metric report upgrades; Web upgrade analysis and improved interface; and Job History optimization.

Project Justification:

1) Promotes and enhances the efficient reporting of Environmental data clean-up.
2) Ensures the capture and maintenance of more accurate Environmental data.
3) Provides enhanced emergency response visualization options.
4) Makes sure that Environmental GEARS (GIS) continues to support evolving/essential business needs.
5) Ensures Environmental upgrade alignment with current Environmental platforms.
6) Affords enhancement consideration for Web upgrade.
7) Reduces as-built, reconciliation and Environmental posting costs.
8) Promotes increased work-flow efficiencies.
9) Improves interface/data use/understanding for SDG&E project leads, designers, and construction.
10) Decreases non-compliance risks for key environmental permits.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776S - 19100 Environmental Tracking System Enhancements

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776S**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776S - 19100 Environmental Tracking System Enhancements
Workpaper Detail:	00776S.001 - 19100 Environmental Tracking System Enhancements

In-Service Date:	11/30/2018
Description:	

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	66	0
Non-Labor	0	634	0
NSE	0	0	0
Total	**0**	**700**	**0**
FTE	0.0	0.6	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776T - 19101 SAP BI & Analytics Platform Upgrade**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776T - 19101 SAP BI & Analytics Platform Upgrade

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	208	0
Non-Labor	Zero-Based	0	0	0	0	0	0	405	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	613	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0

Business Purpose:

The SAP BI & Analytics Platform is made up of various SAP software components including BW HANA, Enterprise HANA, Business Objects (BOBJ), Information Steward and Business Objects Data Services (BODS). Each of these individual components runs on one or more servers with base operating systems like Red Hat Linux (RHEL) or Windows 2008/2012. SAP releases upgrades, patches and service packs for these components on a frequent basis to resolve known issues, address security vulnerabilities and to improve performance/functionality.

Our platform is currently running on outdated software versions and releases. This has resulted in the following: users have experienced browser incompatibility issues with IE10, Info Security has identified HIGH security vulnerabilities with BOBJ 4.1 that are remediated by BOBJ 4.2, inability to support on-premise predictive analytics, increased maintenance support due to non-standard or outdated versions. In addition, the server operating systems also need to be upgraded to the latest releases to stay current with ever increasing demands of the applications that they host as well as patching security vulnerabilities that are identified by Info Security.

Physical Description:

This project will accomplish the following:
1) Standardize on the latest HANA Service Pack for BW HANA (96 to latest SP)
2) Standardize on the latest HANA Service Pack for Enterprise HANA (94 to latest SP)
3) Implement the SAP Predictive Analytics module which we own but cannot use since it requires Service Pack 110 or higher
4) Move Electric Ops Predicitve Workload Management System from vendor HANA cloud to on-premise HANA
5) Upgrade SAP BW from v7.4 to 7.5 which fully leverages the capabilities of HANA
6) Upgrade BOBJ from v4.1 to 4.2 to resolve IE10 compatibility and security issues
7) Upgrade BODS to Linux for connectivity to Hadoop, upgrade Info Steward to latest version
8) Upgrade BPC to the latest version

Project Justification:

Staying current and up to date with software releases and versions will resolve known issues and security vulnerabilities and improve overall platform performance. It also enables Sempra to more fully leverage its investment in assets it already owns. Improved performance and increased capabilities such as Predictive Analytics will help drive greater end user productivity and efficiencies.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776T - 19101 SAP BI & Analytics Platform Upgrade

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776T**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776T - 19101 SAP BI & Analytics Platform Upgrade
Workpaper Detail:	00776T.001 - 19101 SAP BI & Analytics Platform Upgrade
In-Service Date:	11/30/2018
Description:	

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	208	0
Non-Labor	0	405	0
NSE	0	0	0
Total	**0**	**613**	**0**
FTE	0.0	1.8	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776W - 19106 Source Code Management Modernization

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776W - 19106 Source Code Management Modernization

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	349	0
Non-Labor	Zero-Based	0	0	0	0	0	0	80	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**429**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0

Business Purpose:

Replace the current MKS Application Source Code Management (SCM) tool with Subversion (SVN) and Git. MKS is our current Source Code Management application for non-mainframe and non-SAP development . However, MKS, is no longer supported, is outdated and does not meet the developers' needs. A standardized suite of tools is needed to replace MKS. This project will also address the requirements of the distributed application teams that require the GIT SCM tool.

Physical Description:

1. Replace Source Code Management tool for JAVA, .NET, Web, and Mobile Apps
2. Integrate with existing toolset (eg. IDE, HPQC)
3. Support for Continuous Integration and the option of automated code testing (functional and security)
4. Train Developers and admins to use new tools.
5. Tools to migrate existing applications in MKS to Subversion.
6. Tools to migrate existing Git applications to a new GIT platform
7. Identify requirement to meet application teams, deployment teams and auditing requirements.
8. Build an enterprise implementation of the SVN Source Code Management application.

Out of Scope:
  SAP and mainframe applications.

Project Justification:

1. Ability for all Sempra Developers to store code in an enterprise solution minimizing maintenance and training cost.
2. Integrate with multiple Development platforms, IDEs, to allow developers to store code in a more efficient manner.
3. Transition from outdated and unsupported Source Code management system, (MKS), to more robust, supported, and current Source Code Management options, (SVN and Git) in order to reduce risk.
4. Minimize duplication by building an enterprise solution to store Source Code, while also allowing the benefits of CI to appropriate development efforts.
5. Ensure appropriate levels of internal control by enforcing seperatation of duties through adequate source code management.
6. Provide a solution to use continuous build that allows developers to support an agile approach of development and testing tools.
7. Facilitate remote (off-shore) development efforts through the adoption of Git's distributed SCM.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776W - 19106 Source Code Management Modernization

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00776W

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776W - 19106 Source Code Management Modernization

Workpaper Detail: 00776W.001 - 19106 Source Code Management Modernization

In-Service Date: 11/30/2018

Description:

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	0	349	0
Non-Labor	0	80	0
NSE	0	0	0
Total	**0**	**429**	**0**
FTE	0.0	3.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776Y - 19118 Enterprise Data Layer Ph1**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Y - 19118 Enterprise Data Layer Ph1

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	580	580
Non-Labor	Zero-Based	0	0	0	0	0	0	2,496	2,496
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	3,076	3,076
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0

Business Purpose:

One of the key challenges for every project is bringing together data from disparate and complex data sources to satisfy reporting and analytics requirements. Doing so typically involves integrating data from different vendor/ technology platforms based on different schemas (or naming conventions) which is a very complex task. In most cases, these projects take anywhere from 9-12 months to complete. A significant portion of this time is spent defining, architecting and then building out the data integration or the data "plumbing". Once built, this data plumbing is not reusable because it is built very specifically based on the project requirements. As a result, each project builds its own data integration to meet its own specific reporting and analytics requirements. Such an approach does not enable re-use of the data integration across commonly used data sources. The purpose of this project is to build an Enterprise Data Layer (EDL) that supports re-usability of data integration across common data sources. This re-usability will ultimately enable the delivery of analytics in an agile and accelerated manner. This will also help to reduce the needless replication of data.

Physical Description:

This project will identify the commonly used data sources that are used across the enterprise. Using a data virtualization platform to be determined by this project, an Enterprise Data Layer will be built that will enable data to be readily accessible to authorized users for reporting and analytics.

Project Justification:

Re-use of data integration across commonly used data sources will shorten the time it takes to develop and deliver analytics. Projects can satisfy their reporting and analytics requirements in a shorter amount of time, employees will experience increased productivity and efficiency by not having to "hunt down" and acquire data they need to do their work

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Y - 19118 Enterprise Data Layer Ph1

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776Y**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Y - 19118 Enterprise Data Layer Ph1
Workpaper Detail:	00776Y.001 - 19118 Enterprise Data Layer Ph1

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	580	0
Non-Labor	0	1,747	0
NSE	0	0	0
Total	**0**	**2,327**	**0**
FTE	0.0	5.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Y - 19118 Enterprise Data Layer Ph1
Workpaper Detail:	00776Y.002 - 19118 Enterprise Data Layer Ph1

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	749	0
NSE	0	0	0
Total	**0**	**749**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Y - 19118 Enterprise Data Layer Ph1
Workpaper Detail:	00776Y.003 - 19118 Enterprise Data Layer Ph1

In-Service Date: 03/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	580
Non-Labor	0	0	1,747
NSE	0	0	0
Total	**0**	**0**	**2,327**
FTE	0.0	0.0	5.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776Y - 19118 Enterprise Data Layer Ph1
Workpaper Detail:	00776Y.004 - 19118 Enterprise Data Layer Ph1

In-Service Date: 03/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	0	749
NSE	0	0	0
Total	0	0	749
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777A - 84308 Network Core Refresh (Qfabric Refresh)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777A - 84308 Network Core Refresh (Qfabric Refresh)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	89	0	0
Non-Labor	Zero-Based	0	0	0	0	0	787	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**876**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0

Business Purpose:

Implement two standardized data center core networking infrastructures at the Rancho Bernardo (RB) data center in
support of delivering reliable and consistent networking services across the enterprise. The project will specifically address
the following urgent mission-critical objectives:
•Create two networking infrastructures in RB – 1) Remediate existing by replacing legacy networks cores and 2) create new
greenfield network core to support application high-availability
•Enable migration of storage services from Fibre Channel over Ethernet (FCOE) to iSCSI
•Remove barriers that have resulted in limiting or restricting changes to the network core in support of new project

Physical Description:

Data center network distribution/core infrastructure
Backup network
Centralized management system integration

Project Justification:

1.Decommission legacy network infrastructure resulting in simplified, stable, and standardized data center networks
2.Reduction in both service delivery lead-times and support requirements for data center network infrastructure
3.Improve application performance through full utilization of the any-to-any architecture

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777A - 84308 Network Core Refresh (Qfabric Refresh)

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777A**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777A - 84308 Network Core Refresh (Qfabric Refresh)
Workpaper Detail:	00777A.001 - 84308 Network Core Refresh (Qfabric Refresh)

In-Service Date: 03/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	89	0	0
Non-Labor	787	0	0
NSE	0	0	0
Total	**876**	**0**	**0**
FTE	0.8	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777B - 84256 SCG ENTERPRISE DESKTOP REFRESH

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777B - 84256 SCG ENTERPRISE DESKTOP REFRESH

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	172	76	0
Non-Labor	Zero-Based	0	0	0	0	0	6,187	3,021	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	6,359	3,097	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.5	0.7	0.0

Business Purpose:

•Procure/configure/deploy ~3800 Windows 10 workstations to office-based SCG employees. Workstations include combination of desktops, laptops and tablets (2-in-1s); laptops will be provided include dock, with option for adapters/dongles, headset, case, monitor (analog monitors must be replaced). One workstation per employee. An allowance for replacement of ~10% of monitors/peripherals is included.
•Perform foundational work to support deployment, including identification of hardware standards and Windows 10 image development and testing.
•Assess, test, remediate and validate applications compatibility on Windows 10 platform. Remediation could include minor code changes, application virtualization (App-V), or other workarounds (ie, VDI running Win 7).
•Deploy Office 365 tools to same users as part of desktop refresh, including but not limited to: OfficeProPlus, Skype for Business, SharePoint Online, OneDrive. Project has strong dependency on Office 365 Adoption Project for organizational change management.
•Update CMDB and solidify asset management process to ensure accurate asset tracking

Physical Description:

Procure/configure/deploy ~3800 Windows 10 workstations to office-based SCG employees. Workstations include combination of desktops, laptops and tablets (2-in-1s); laptops will be provided include dock, with option for adapters/dongles, headset, case, monitor (analog monitors must be replaced). One workstation per employee. An allowance for replacement of ~10% of monitors/peripherals is included.

Project Justification:

•Significantly improved client experience relative to workstation performance, productivity tool integration and usability; increasing employee productivity and reducing frustration/complaints.
•O&M cost avoidance to replace underperforming or aged hardware
•Reduced hardware repair calls to Service Desk and IT support groups.
•Increased mobility, flexibility for office workers (refresh will increase laptop:desktop ratio)

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777B - 84256 SCG ENTERPRISE DESKTOP REFRESH

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777B - 84256 SCG ENTERPRISE DESKTOP REFRESH
Workpaper Detail:	00777B.001 - 84256 SCG ENTERPRISE DESKTOP REFRESH
In-Service Date:	12/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	172	0	0
Non-Labor	6,187	0	0
NSE	0	0	0
Total	6,359	0	0
FTE	1.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777B - 84256 SCG ENTERPRISE DESKTOP REFRESH
Workpaper Detail:	00777B.002 - 84256 SCG ENTERPRISE DESKTOP REFRESH

In-Service Date: 07/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	76	0
Non-Labor	0	3,021	0
NSE	0	0	0
Total	**0**	**3,097**	**0**
FTE	0.0	0.7	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00777C - 19076 Business Continuity Enhancement**

Southern California Gas Company
2019 GRC - APP
Capital Workpapers

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777C - 19076 Business Continuity Enhancement

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	781	2,811	2,603
Non-Labor	Zero-Based	0	0	0	0	0	6,047	20,984	31,006
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	6,828	23,795	33,609
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	6.8	24.4	22.6

Business Purpose:

The project will enhance the business continuity capabilities of the data center infrastructure services by implementing high-availability (HA) compute, storage, and network services. The project will migrate the Company's most critical applications to the new HA services providing the ability for select applications to remain operational during planned and unplanned outages (failover to be measured in minutes, not multi-hours or days) The project will implement automation services to facilitate the provisioning, decommissioning, and typical day to day operations in the HA environment simplifying common tasks and reducing mean-time-to-restore (MTTR).

Physical Description:

The project will design and implement new infrastructure (compute, storage, network, cabinets, racks, and cabling) for highly available data center infrastructure services, extend network adjacency to the HA environment, extend basic data service chaining capabilities (through vRealize Automation and vRealize Orchestration), implement VMWare Site Recovery Manager (SRM), vRealize Operations (vROPS) The project will also create standard framework for implementing business continuity for the most critical business applications (target DR tier 1 applications). The project will develop operational procedures for the appropriate operations teams, design documentation for engineering teams to add capacity as appropriate in the future and provide tier 4 operational support.

Project Justification:

Project will significantly improve availability of key critical applications during planned and unplanned outages. Project will also reduce critical application's dependency on a single data center or a single infrastructure environment within a single data center. During major data center maintenance, critical applications can be moved to a secondary data center or HA environment within a single data center.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777C - 19076 Business Continuity Enhancement

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777C**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777C - 19076 Business Continuity Enhancement

Workpaper Detail: 00777C.001 - 19076 Business Continuity Enhancement

In-Service Date: 12/31/2017

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	781	0	0
Non-Labor	6,047	0	0
NSE	0	0	0
Total	**6,828**	**0**	**0**
FTE	6.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777C - 19076 Business Continuity Enhancement
Workpaper Detail:	00777C.002 - 19076 Business Continuity Enhancement

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	2,811	0
Non-Labor	0	20,984	0
NSE	0	0	0
Total	**0**	**23,795**	**0**
FTE	0.0	24.4	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777C - 19076 Business Continuity Enhancement

Workpaper Detail: 00777C.003 - 19076 Business Continuity Enhancement

In-Service Date: 11/30/2019

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	0	0	2,603
Non-Labor	0	0	31,006
NSE	0	0	0
Total	0	0	33,609
FTE	0.0	0.0	22.6

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777D - 19077 Converged Computing Infrastructure 2018-2019

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777D - 19077 Converged Computing Infrastructure 2018-2019

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	717	727
Non-Labor	Zero-Based	0	0	0	0	0	0	2,553	8,634
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**3,270**	**9,361**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	6.2	6.3

Business Purpose:

The project takes a holistic view of IT infrastructure requirements, plan phased approach to build out capacity for compute, storage, backup and network to meet the demand of all IT capital projects, O&M efforts. The project will also refresh obsolete hardware to improve reliability.

Physical Description:

Based on the current strategic position the scope will include the acquisition and deployment of servers, network equipment , storage arrays and backup capacity in cohesive bundles to address new demands of the projects and requests. Virtualization will be required for all hardware refreshes. However, the scope will not include movements of applications from old hardware to new hardware.

Project Justification:

The project will improve reliability of data center, reduce application outage due to aging infrastructure, and reduce O&M cost by avoiding future maintenance payments.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777D - 19077 Converged Computing Infrastructure 2018-2019

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777D**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777D - 19077 Converged Computing Infrastructure 2018-2019

Workpaper Detail: 00777D.001 - 19077 Converged Computing Infrastructure - 2018-2019

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	717	0
Non-Labor	0	2,553	0
NSE	0	0	0
Total	**0**	**3,270**	**0**
FTE	0.0	6.2	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777D - 19077 Converged Computing Infrastructure 2018-2019
Workpaper Detail:	00777D.002 - 19077 Converged Computing Infrastructure - 2018-2019

In-Service Date: 10/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	727
Non-Labor	0	0	8,634
NSE	0	0	0
Total	**0**	**0**	**9,361**
FTE	0.0	0.0	6.3

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777E - 19079 Local Area Network Refresh (2018)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777E - 19079 Local Area Network Refresh (2018)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	362	0
Non-Labor	Zero-Based	0	0	0	0	0	0	2,093	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	2,455	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0

Business Purpose:

Sempra has adopted a 5 year refresh cycle for LAN switching infrastructure. The existing infrastructure was installed between 2007 and 2009. The current LAN infrastructure is out of warranty and out of support; software updates and patches are no longer available for a large number of the devices. The availability of technical support could also become limited or non-existent.

Physical Description:

The project will replace 20% of Ethernet LAN Swithches (231) with 11000 individual ports Sempra LAN sites. These switches support the delevery of VoIP telephony and data to all SEu users, Substation Security, Eletric and Gas Transmission and Operations.

Project Justification:

Reliability and stability of the VoIP telephony and data networks. Vendor support for hardware components and software upgrades.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777E - 19079 Local Area Network Refresh (2018)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777E**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777E - 19079 Local Area Network Refresh (2018)
Workpaper Detail:	00777E.001 - 19079 Local Area Network Refresh (2018)

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	362	0
Non-Labor	0	2,093	0
NSE	0	0	0
Total	**0**	**2,455**	**0**
FTE	0.0	3.1	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00777F - 19080 Local Area Network Refresh (2019)**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777F - 19080 Local Area Network Refresh (2019)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	362
Non-Labor	Zero-Based	0	0	0	0	0	0	0	2,093
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	2,455
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1

Business Purpose:

Sempra has adopted a 5 year refresh cycle for LAN switching infarstructure. The existing infrastructure was installed between 2007 and 2009. The current LAN infrastructure is out of warranty and out of support; software updates and patches are no longer available for a large number of the devices. The availability of technical support has also become limited or non-existent. The infrastructure is no longer meeting the technical requirements necessary to implement new office productivity solutions (such as Office 365, Skype, and OneDrive) reliability and at the required performance capacity.

Physical Description:

The project will replace 20% of Ethernet local area network (LAN) switching infrastructure at company facilities. These switches support the delivery of IP telephony and data to all SEu users, Substation Security, Eletric and Gas Transmission and Operations.

Project Justification:

Increased reliability and performance capabilities to support requirements for IP telephony and data networks. Vendor support for hardware components and software upgrades.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777F - 19080 Local Area Network Refresh (2019)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777F - 19080 Local Area Network Refresh (2019)
Workpaper Detail:	00777F.001 - 19080 Local Area Network Refresh (2019)

In-Service Date:	11/30/2019
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	362
Non-Labor	0	0	2,093
NSE	0	0	0
Total	0	0	2,455
FTE	0.0	0.0	3.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00777G - 19082 Private Network Refresh (2018)**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777G - 19082 Private Network Refresh (2018)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	325	0
Non-Labor	Zero-Based	0	0	0	0	0	0	3,730	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	4,055	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0

Business Purpose:

The project will replace obsolete radio equipment that is end of life, end of support, and are difficult to find replacement parts. The project will also replace aging microwave components with new higher capacity infrastructure. This project will help to further enable the conversion of the SoCalGas microwave system to native Ethernet transport.

Physical Description:

This project will replace aging radio and microwave infrastructure that is no longer vendor supported, require greater bandwidth or provide for new coverage. This project will include construction of up to 6 new links of 6 GHz and 11 GHz microwave from Needles to Newberry Springs due to the remote nature of the Needles are and the lack of available leased carrier options to these sites. This project will also make more Ethernet bandwidth available to the network.

Project Justification:

Provide a stable maintainable environment. Faster throughput will forego the need for additional paths or leased carrier services.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777G - 19082 Private Network Refresh (2018)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777G**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777G - 19082 Private Network Refresh (2018)
Workpaper Detail:	00777G.001 - 19082 Private Network Refresh (2018)

In-Service Date: 11/30/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	325	0
Non-Labor	0	3,730	0
NSE	0	0	0
Total	0	4,055	0
FTE	0.0	2.8	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777H - 19083 Private Network Refresh (2019)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777H - 19083 Private Network Refresh (2019)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	396
Non-Labor	Zero-Based	0	0	0	0	0	0	0	4,529
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,925**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4

Business Purpose:

The project will replace obsolete radio equipment that is end of life, end of support, and are difficult to find replacement parts. The project will also replace aging microwave components with new higher capacity infrastructure. This project will help to further enable the conversion of the SoCalGas microwave system to native Ethernet transport.

Physical Description:

This project will replace aging radio and microwave infrastructure that is no longer vendor supported, require greater bandwidth or provide for new coverage. This project will also make more Ethernet bandwidth available to the network.

Project Justification:

Provide a stable maintainable environment. Faster throughput will forego the need for additional paths or leased carrier services

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777H - 19083 Private Network Refresh (2019)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777H**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777H - 19083 Private Network Refresh (2019)
Workpaper Detail:	00777H.001 - 19083 Private Network Refresh (2019)

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	396
Non-Labor	0	0	4,529
NSE	0	0	0
Total	0	0	4,925
FTE	0.0	0.0	3.4

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777I - 19087 Wide Area Network Refresh (2018)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777I - 19087 Wide Area Network Refresh (2018)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	973	0
Non-Labor	Zero-Based	0	0	0	0	0	0	2,801	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	3,774	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0

Business Purpose:

Sempra has adopted a 5 year refresh cycle for wide area network (WAN) routing infrastructure. The existing infrastructure was installed starting in 2009. The current WAN infrastructure has started to become end-of-sale and end-of-support limiting access to replacement hardware, software/firmware updates, and technical assistance.

Physical Description:

This project will refresh 25% (~50 routers) of the Juniper SRX220/240 and LN2600 routers deployed in the enterprise wide area network (WAN). The existing routers will be refreshed with the Juniper ACX2100 router platform and current vendor recommended firmware. This project will also refresh the WAN backbone MX960 routers in Monterey Park with the MX480 router platform. This project will not be implementing additional connectivity or new network architecture.

Project Justification:

Reliability and stability of WAN routing functionality and continued access to vendor support for hardware components and software upgrades.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY
Witness: Christopher R. Olmsted
Budget Code: 00777.0
Category: G. IT
Category-Sub: 1. Technical Obsolescence
Workpaper Group: 00777I - 19087 Wide Area Network Refresh (2018)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777I**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777I - 19087 Wide Area Network Refresh (2018)

Workpaper Detail: 00777I.001 - 19087 Wide Area Network Refresh (2018)

In-Service Date: 11/30/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	973	0
Non-Labor	0	2,801	0
NSE	0	0	0
Total	**0**	**3,774**	**0**
FTE	0.0	8.5	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00777J - 19102 SCG Conf Room AV Upgrade**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777J - 19102 SCG Conf Room AV Upgrade

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,828	0
Non-Labor	Zero-Based	0	0	0	0	0	0	1,049	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**2,877**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	15.9	0.0

Business Purpose:

The majority SCE's conference rooms are outfitted with legacy and non-functinal AV equipment. In many cases, the equipment is not only out of support but no longer functional due incompatible technologies (i.e., analog vs. digital and VGA adapter not present on current laptops). Additionally, the current conference rooms lack the ability to integrate with our current web and audio conferencing solution, Skype for Business. This project will implement a solution to upgrade the AV components in SCG's conference rooms and ensure strategic integration with our backend conferencing solutions.

Physical Description:

The scope will include the AV conferencing equipment and installation for 146 small-to-medium conference rooms and 60 large conferencing rooms.

Project Justification:

Productive client interactions between geographically distant conf rooms and companies; travel time/expense avoidance for employees; integrating easy-to-use conference room AV equipment with the company's web and audio conference solution optimizes usage and cultural adoption.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777J - 19102 SCG Conf Room AV Upgrade

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777J**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777J - 19102 SCG Conf Room AV Upgrade
Workpaper Detail:	00777J.001 - 19102 SCG Conf Room AV Upgrade

In-Service Date: 12/31/2018

Description:

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	1,828	0
Non-Labor	0	1,049	0
NSE	0	0	0
Total	**0**	**2,877**	**0**
FTE	0.0	15.9	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00777M - 19088 Wide Area Network Refresh (2019)**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777M - 19088 Wide Area Network Refresh (2019)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	0	647
Non-Labor	Zero-Based	0	0	0	0	0	0	0	1,865
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,512**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6

Business Purpose:

Sempra has adopted a 5 year refresh cycle for wide area network (WAN) routing infrastructure. The existing infrastructure was installed starting in 2009. The current WAN infrastructure has started to become end-of-sale and end-of-support limiting access to replacement hardware, software/firmware updates, and technical assistance.

Physical Description:

This project will refresh 25% (~50 routers) of the Juniper SRX220/240 and LN2600 routers deployed in the enterprise wide area network (WAN). The existing routers will be refreshed with the Juniper SRX345 router platform and current vendor recommended firmware. This project will also refresh 25% of the deployed MX960 routers with the MX480 router platform. This project will not be implementing additional connectivity or new network architecture.

Project Justification:

Reliability and stability of WAN routing functionality and continued access to vendor support for hardware components and software upgrades.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777M - 19088 Wide Area Network Refresh (2019)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777M**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777M - 19088 Wide Area Network Refresh (2019)
Workpaper Detail:	00777M.001 - 19088 Wide Area Network Refresh (2019)

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	647
Non-Labor	0	0	1,865
NSE	0	0	0
Total	**0**	**0**	**2,512**
FTE	0.0	0.0	5.6

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00777O - 84305 CONVERGED COMPUTING INFRASTRUCTURE

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777O - 84305 CONVERGED COMPUTING INFRASTRUCTURE

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	127	0	0
Non-Labor	Zero-Based	0	0	0	0	0	96	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**223**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0

Business Purpose:

The primary driver of this project is ensure sufficient capacity for upcoming business demands in Converged Infrastructure.
This project takes a holistic view of the capacity demands and translates them into infrastructure requirements and plans a
phased approach to build the computing capacity through the acquisition, design and implementation of components that
includes servers, in-rack networking components and data center improvements to accommodate the planned expansion
and refresh of the aging hardware.
Once implemented these components are integrated to form computing capacity needed to meet the demands of
Information Technology capital projects and Operational and Maintenance (O&M) efforts. Additionally, this project will also
refresh obsolete hardware to improve reliability and reduce overall cost of computing capacity. It will start deploying iSCSI
as a storage transport. However, it will not convert the existing FCoE infrastructure to iSCSI.
The formal capacity planning efforts with our business stakeholders will streamline hardware purchases and generate
volume discounts and efficiencies. At the end of the project All HP servers and UCS blade servers will be retired.

Physical Description:

Sufficient capital funds are available for planned acquisition of new hardware.
Appropriate number of licenses are available to continue building the computing capacity.
Hardware components are acquired in an integrated fashion to expand the Sempra private cloud infrastructure.
Resources will be deployed to complete the final step of the decommissioning process.

Project Justification:

This project will improve the reliability and responsiveness of data centers by:
1.Providing capacity on demand for the new Capital and O&M projects
2.Reducing application outages due to aging infrastructure
3.Reducing the O&M cost by avoiding maintenance payments for extended support
4.Building standardized practices for delivering consistent services
5.Improving efficiencies through optimization of computing resources
6.Standardize hardware purchases to replace legacy HP servers
7.Reduce power consumption in the data centers

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777O - 84305 CONVERGED COMPUTING INFRASTRUCTURE

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777O**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777O - 84305 CONVERGED COMPUTING INFRASTRUCTURE

Workpaper Detail: 00777O.001 - 84305 CONVERGED COMPUTING INFRASTRUCTURE

In-Service Date: 06/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	127	0	0
Non-Labor	96	0	0
NSE	0	0	0
Total	223	0	0
FTE	1.1	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00777P - 19132 Pure Storage Upgrade**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777P - 19132 Pure Storage Upgrade

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	24	0	0
Non-Labor	Zero-Based	0	0	0	0	0	6,300	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**6,324**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0

Business Purpose:

The purpose of this project is to address the following needs:
- Provide 100% replication of all data on the Pure Storage Array. This will provide assurance that the Sempra Utilities will have access to all data in the event an planned or unplanned event.
- Migrate all existing data off the Legacy Storage Arrays (3Par, IBM SVC, EMC Spinning Disks and XtremeIO) to the Pure Storage Array.
- Retire all Legacy Storage Arrays post migration
- Provide additional Network Monitoring capability that will allow us to troubleshoot issues from the network layer up to the application layer.

Physical Description:

1. Procure and install additional Pure Storage to support 100% replication of the existing Pure array.
2. Configure data replication.
3. Migrate all data on legacy storage arrays to the Pure array.

Project Justification:

100% replication of production, development, and QA data. In the event of an planned or unplanned event, applications utilizing the Pure Storage will have not any data loss. This will allow for faster recovery resulting in less operational downtime.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: G. IT

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777P - 19132 Pure Storage Upgrade

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777P**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	G. IT
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777P - 19132 Pure Storage Upgrade
Workpaper Detail:	00777P.001 - 19132 Pure Storage Upgrade

In-Service Date: 09/30/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	24	0	0
Non-Labor	6,300	0	0
NSE	0	0	0
Total	6,324	0	0
FTE	0.2	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00756L - 19096 Sempra Lease Accounting and Reporting System

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00756L - 19096 Sempra Lease Accounting and Reporting System

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	639	0	0
Non-Labor	Zero-Based	0	0	0	0	0	342	758	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	981	758	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0

Business Purpose:

FASB's new lease accounting standard (ASU 2016-02, Lease Accounting (Topic 842) & IFRS 16), was issued on February 25, 2016. The new lease accounting standard requires that all leases be reported on each company's balance sheet (i.e. as a Capital Lease) for financial accounting purposes. It is mandatory that the new standard is in practice by 12/15/2018. Regulatory accounting treatment may need to continue to recover lease expenses as O&M (but CPUC guidance relatded to this new GAAP standard has not been issued at this time). A challenging aspect of this project will be the identification, recording, and records management of operating leases that have not previously had stringent reporting requirements. Clarification with FASB on a 2 year historical "look back" reporting requirement to 2017 is being pursued, which will involve some level of historical lease data to be loaded into the proposed new system. Additionally, there may be tax and budget impacts due to the potential reclassification of previously O&M categorized expenses to capital expenditures.

Physical Description:

For Sempra, SoCalGas and SDGE companies, all operating leases will need to be identified, and input into a new tracking an accounting and reporting system in order to implement these new standards. From an accounting perspective, there is also a desire to consolidate Capital Leases so that all accounting entries can be generated from a single system. This would include Fleet Capital Leases.

Project Justification:

This is a mandatory compliance project.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00756L - 19096 Sempra Lease Accounting and Reporting System

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756L**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: G. IT

Category-Sub: 4. Business Optimization

Workpaper Group: 00756L - 19096 Sempra Lease Accounting and Reporting System

Workpaper Detail: 00756L.001 - 19096 Sempra Lease Accounting and Reporting System

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	639	0	0
Non-Labor	342	0	0
NSE	0	0	0
Total	981	0	0
FTE	5.6	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: G. IT

Category-Sub: 4. Business Optimization

Workpaper Group: 00756L - 19096 Sempra Lease Accounting and Reporting System

Workpaper Detail: 00756L.002 - 19096 Sempra Lease Accounting and Reporting System

In-Service Date: 03/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	758	0
NSE	0	0	0
Total	0	758	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776N - 19084 Sensitive Data Protection**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00776N - 19084 Sensitive Data Protection

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,994	1,227
Non-Labor	Zero-Based	0	0	0	0	0	0	3,599	2,059
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**5,593**	**3,286**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	17.3	10.7

Business Purpose:

Sempra has embarked on a journey to mature its existing data protection capabilities. Data protection is more than just implementing a technology solution, it also includes a sustainable data governance and data protection program.
In Q2 2016 Sempra engaged PwC for the purpose of understanding:
1) How much sensitive data does Sempra have?
2) Where is the sensitive data located?
3) Who has access to the sensitive data?
4) What are the specific controls for each sensitive data "set"?
One of the key deliverables of this effort was a set of repeatable processes that would enable Sempra to conduct a Sensitive Data Inventory, in addition to a roadmap for implementing a data governance and data protection program. The purpose of this project is to implement the processes and technologies identified in the roadmap for protecting Sempra's sensitive data.

Physical Description:

This project will expand Sempra's Data Protection Capabilities and will lay the foundation for comprehensive sensitive data protection. Additionally, it will implement the required governance structure, process and technologies to help secure sensitive data as well as procedures to develop a sustainable sensitive data inventory.

Project Justification:

Maturing Sempra's data protection capabilities will safeguard sensitive data from both internal and external data breaches. Complete data protection (at rest and in-transit) for sensitive data, security across multiple devices, ability to move data securely, safeguarding sensitive data from alteration, ensured data compliance.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00776N - 19084 Sensitive Data Protection

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776N**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00776N - 19084 Sensitive Data Protection
Workpaper Detail:	00776N.001 - 19084 Sensitive Data Protection

In-Service Date: 06/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	1,994	0
Non-Labor	0	3,599	0
NSE	0	0	0
Total	0	5,593	0
FTE	0.0	17.3	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: G. IT

Category-Sub: 4. Business Optimization

Workpaper Group: 00776N - 19084 Sensitive Data Protection

Workpaper Detail: 00776N.002 - 19084 Sensitive Data Protection

In-Service Date: 06/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	1,227
Non-Labor	0	0	2,059
NSE	0	0	0
Total	**0**	**0**	**3,286**
FTE	0.0	0.0	10.7

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00786B - 19115 FoF - Operational Awareness

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00786B - 19115 FoF - Operational Awareness

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	311	332
Non-Labor	Zero-Based	0	0	0	0	0	0	2,400	2,567
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	2,711	2,899
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.9

Business Purpose:

There is a gap today in IT's ability to comprehensively identify, understand and react to critical information regarding infrastructure and applications. This project will implement tools and processes to bring visibiltiy to events and impacts in order to not only resolve outages quicker, but to proactively understand what is taking place and prevent outages before they can occur.

The lack of a comprehensive system and application monitoring impairs our support teams including the "NOC" from proactively detecting and identifying system issues. The lack of this capability increases our time to identify and restore services and requires many SME's from many domains involve with triage process.

One option to address this issue is to implement a comprehensive application monitoring solution that is capable of detecting issues and deviations as the transactions traverses the infrastructure, systems and applications along its path. Application performance management (APM) tools and processes is a crucial capability that is neede to ensure timely detection, identification and restoration of a failed application or service and infrastructure.

Physical Description:

1. Perform application portfolio optimization to gather application inventory and key application data attitrbutes as a baseline for this project and subsequent rationalization efforts.
2. Procure APM toolsets (like Splunk ITSI, AppDynamics,New Relic, Keynote, Web Analytics etc...)
3. Integrate deep level inspection of mission critical and pubic facing applications
4. Create dashboards and reports for support teams
5. Integrate metrics into Splunk
6. Adopt a Performance Engineering practices to build software (design, measure/track and plan)
7. Create Monitoring Application Monitoring (APM) Reference Architecture
8. Implement ability to monitor "cloud" services and application
9. Implement synthetic monitoring (bots)
10. Automate processes to provide relevant data sustainability

Project Justification:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00786.0

Category: G. IT

Category-Sub: 4. Business Optimization

Workpaper Group: 00786B - 19115 FoF - Operational Awareness

1. Reduce time required to identify application and infrastructure issues
2. Provide support teams with a holistic / end-to-end applic ation view
3. Improve application performance
4. Measure availability and performance against SLA
5. Provide input to capacity planning efforts
6. Provide preemptive notification of application failures and deviations from baseline
7. Directly addresses 57 items on the IT Availability Risk Registry, indirectly produces efficiency gains to address resource items

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00786.0

Category: G. IT

Category-Sub: 4. Business Optimization

Workpaper Group: 00786B - 19115 FoF - Operational Awareness

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00786B**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00786.0

Category: G. IT

Category-Sub: 4. Business Optimization

Workpaper Group: 00786B - 19115 FoF - Operational Awareness

Workpaper Detail: 00786B.001 - 19115 FoF - Operational Awareness

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	311	0
Non-Labor	0	2,400	0
NSE	0	0	0
Total	0	2,711	0
FTE	0.0	2.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	G. IT
Category-Sub:	4. Business Optimization
Workpaper Group:	00786B - 19115 FoF - Operational Awareness
Workpaper Detail:	00786B.002 - 19115 FoF - Operational Awareness

In-Service Date: 12/31/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	332
Non-Labor	0	0	2,567
NSE	0	0	0
Total	**0**	**0**	**2,899**
FTE	0.0	0.0	2.9

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	H. Procurement
Workpaper:	00756B

Summary for Category: H. Procurement

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	218	28	0
Non-Labor	0	1,983	242	0
NSE	0	0	0	0
Total	**0**	**2,201**	**270**	**0**
FTE	0.0	1.9	0.2	0.0

00756B 84311 PINNACLE UPGRADE

Labor	0	218	28	0
Non-Labor	0	1,983	242	0
NSE	0	0	0	0
Total	**0**	**2,201**	**270**	**0**
FTE	0.0	1.9	0.2	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00756B - 84311 PINNACLE UPGRADE**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	H. Procurement
Category-Sub:	3. Mandated
Workpaper Group:	00756B - 84311 PINNACLE UPGRADE

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	218	28	0
Non-Labor	Zero-Based	0	0	0	0	0	1,983	242	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	2,201	270	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.9	0.2	0.0

Business Purpose:

Pinnacle is a critical management application system that has been in production over 20 years. Several issues are contributing to the high risk in maintaining this system. The programming language, PowerBuilder, is obsolete and resources available to support this technology are scarce. Any attempt to rewrite or configure current components introduces significant risk in maintaining availability and supportability of the application.
The project will investigate technology options available to replace the system with a company/industry standard programming language and communication protocols where required. The project will focus on the following area:
•Conversion of the PowerBuilder code to the .Net platform and program language C#, conform the Technical Reference Model

Physical Description:

Pinnacle PowerBuilder 12.5.2 code conversion.
Upgrade SQL Server database software.

Project Justification:

Compliance Benefits:
•Mitigate the risk to application availability, stability and maintainability by migration to an industry standard programming language that can be enhanced to meet future regulatory requirements, quality of development and frequency of changes
•Enhance internal controls and comply with corporate, audit and SOX standards and policies
•Addresses the PowerBuilder resources. A new company/industry standard programming language will give us a larger talent pool to select from when there is turn-over in the application support area
•Baseline support and Incremental work can easily be supported by the current bench strength (3 developers) who will be trained in C# skills.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: H. Procurement

Category-Sub: 3. Mandated

Workpaper Group: 00756B - 84311 PINNACLE UPGRADE

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	H. Procurement
Category-Sub:	3. Mandated
Workpaper Group:	00756B - 84311 PINNACLE UPGRADE
Workpaper Detail:	00756B.001 - 84311 PINNACLE UPGRADE

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	218	0	0
Non-Labor	1,983	0	0
NSE	0	0	0
Total	2,201	0	0
FTE	1.9	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: H. Procurement

Category-Sub: 3. Mandated

Workpaper Group: 00756B - 84311 PINNACLE UPGRADE

Workpaper Detail: 00756B.002 - 84311 PINNACLE UPGRADE

In-Service Date: 10/31/2018

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	0	28	0
Non-Labor	0	242	0
NSE	0	0	0
Total	0	270	0
FTE	0.0	0.2	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	I. Gas System Integrity
Workpaper:	VARIOUS

Summary for Category: I. Gas System Integrity

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	8,862	11,155	10,659
Non-Labor	0	26,108	26,845	25,564
NSE	0	0	0	0
Total	**0**	**34,970**	**38,000**	**36,223**
FTE	0.0	77.0	97.1	82.4

00756G RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation

Labor	0	453	0	0
Non-Labor	0	838	412	0
NSE	0	0	0	0
Total	**0**	**1,291**	**412**	**0**
FTE	0.0	3.9	0.0	0.0

00766B RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP

Labor	0	363	0	0
Non-Labor	0	590	0	0
NSE	0	0	0	0
Total	**0**	**953**	**0**	**0**
FTE	0.0	3.2	0.0	0.0

00774V RAMP - INCREMENTAL 84309 CPD PHASE 3

Labor	0	1,255	0	0
Non-Labor	0	1,430	0	0
NSE	0	0	0	0
Total	**0**	**2,685**	**0**	**0**
FTE	0.0	10.9	0.0	0.0

00776AD RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)

Labor	0	274	0	0
Non-Labor	0	652	0	0
NSE	0	0	0	0
Total	**0**	**926**	**0**	**0**
FTE	0.0	2.4	0.0	0.0

00776AH RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH

Labor	0	314	0	0
Non-Labor	0	261	0	0
NSE	0	0	0	0
Total	**0**	**575**	**0**	**0**
FTE	0.0	2.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	I. Gas System Integrity
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00776F RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports				
Labor	0	0	524	0
Non-Labor	0	0	354	0
NSE	0	0	0	0
Total	**0**	**0**	**878**	**0**
FTE	0.0	0.0	4.6	0.0
00776G RAMP - INCREMENTAL 19067 Field Data Collection with eForm				
Labor	0	0	1,023	1,023
Non-Labor	0	0	880	880
NSE	0	0	0	0
Total	**0**	**0**	**1,903**	**1,903**
FTE	0.0	0.0	8.9	8.9
00776H RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements				
Labor	0	507	912	479
Non-Labor	0	619	974	425
NSE	0	0	0	0
Total	**0**	**1,126**	**1,886**	**904**
FTE	0.0	4.4	8.0	4.2
00776I RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II				
Labor	0	0	1,525	430
Non-Labor	0	0	1,892	826
NSE	0	0	0	0
Total	**0**	**0**	**3,417**	**1,256**
FTE	0.0	0.0	13.3	3.7
00776J RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)				
Labor	0	0	1,189	4,657
Non-Labor	0	0	2,386	9,450
NSE	0	0	0	0
Total	**0**	**0**	**3,575**	**14,107**
FTE	0.0	0.0	10.3	40.5
00776K RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics				
Labor	0	460	138	0
Non-Labor	0	160	196	0
NSE	0	0	0	0
Total	**0**	**620**	**334**	**0**
FTE	0.0	4.0	1.2	0.0
00776L RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reportin				
Labor	0	256	0	0
Non-Labor	0	1,081	0	0
NSE	0	0	0	0
Total	**0**	**1,337**	**0**	**0**
FTE	0.0	2.2	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	I. Gas System Integrity
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00776M RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4				
Labor	0	67	949	148
Non-Labor	0	114	2,157	115
NSE	0	0	0	0
Total	**0**	**181**	**3,106**	**263**
FTE	0.0	0.6	8.3	1.1
00777L RAMP - INCREMENTAL 84225 GIS UPGRADE				
Labor	0	412	0	0
Non-Labor	0	4,331	0	0
NSE	0	0	0	0
Total	**0**	**4,743**	**0**	**0**
FTE	0.0	3.6	0.0	0.0
00777N RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020				
Labor	0	0	74	74
Non-Labor	0	0	2,500	2,500
NSE	0	0	0	0
Total	**0**	**0**	**2,574**	**2,574**
FTE	0.0	0.0	0.6	0.6
00786A RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4				
Labor	0	761	138	138
Non-Labor	0	321	73	119
NSE	0	0	0	0
Total	**0**	**1,082**	**211**	**257**
FTE	0.0	6.6	1.2	1.2
00756A RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019				
Labor	0	0	214	214
Non-Labor	0	0	1,500	1,500
NSE	0	0	0	0
Total	**0**	**0**	**1,714**	**1,714**
FTE	0.0	0.0	1.9	1.9
00756C RAMP - INCREMENTAL 19061 Gas GIS 2017-2019				
Labor	0	0	1,071	1,071
Non-Labor	0	0	3,563	3,566
NSE	0	0	0	0
Total	**0**	**0**	**4,634**	**4,637**
FTE	0.0	0.0	9.3	9.3
00756F RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management				
Labor	0	0	442	309
Non-Labor	0	0	496	346
NSE	0	0	0	0
Total	**0**	**0**	**938**	**655**
FTE	0.0	0.0	3.8	2.7

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	I. Gas System Integrity
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00756H RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4				
Labor	0	428	428	0
Non-Labor	0	713	1,245	0
NSE	0	0	0	0
Total	**0**	**1,141**	**1,673**	**0**
FTE	0.0	3.7	3.7	0.0
00756I RAMP - INCREMENTAL 19072 GT Leak Survey				
Labor	0	0	456	1,605
Non-Labor	0	0	398	2,077
NSE	0	0	0	0
Total	**0**	**0**	**854**	**3,682**
FTE	0.0	0.0	3.9	3.9
00756J RAMP - INCREMENTAL 19094 Click Enhancements Project				
Labor	0	881	918	0
Non-Labor	0	4,256	2,980	2,000
NSE	0	0	0	0
Total	**0**	**5,137**	**3,898**	**2,000**
FTE	0.0	7.7	8.0	0.0
00756P RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017				
Labor	0	552	319	0
Non-Labor	0	593	304	0
NSE	0	0	0	0
Total	**0**	**1,145**	**623**	**0**
FTE	0.0	4.8	2.8	0.0
00756Q RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016				
Labor	0	1,052	0	0
Non-Labor	0	3,669	0	0
NSE	0	0	0	0
Total	**0**	**4,721**	**0**	**0**
FTE	0.0	9.1	0.0	0.0
00756R RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT				
Labor	0	414	0	0
Non-Labor	0	3,946	0	0
NSE	0	0	0	0
Total	**0**	**4,360**	**0**	**0**
FTE	0.0	3.6	0.0	0.0
00756S RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING				
Labor	0	156	81	0
Non-Labor	0	312	261	0
NSE	0	0	0	0
Total	**0**	**468**	**342**	**0**
FTE	0.0	1.4	0.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY		
Witness:	Christopher R. Olmsted		
Category:	I. Gas System Integrity		
Workpaper:	VARIOUS		

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00756U RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS				
Labor	0	15	0	0
Non-Labor	0	260	0	0
NSE	0	0	0	0
Total	**0**	**275**	**0**	**0**
FTE	0.0	0.1	0.0	0.0
00756V RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL				
Labor	0	242	115	0
Non-Labor	0	1,962	726	0
NSE	0	0	0	0
Total	**0**	**2,204**	**841**	**0**
FTE	0.0	2.1	1.0	0.0
00756X RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION P				
Labor	0	0	639	511
Non-Labor	0	0	3,548	1,760
NSE	0	0	0	0
Total	**0**	**0**	**4,187**	**2,271**
FTE	0.0	0.0	5.6	4.4

Note: Totals may include rounding differences.

Beginning of Workpaper Group
**00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process
Automation**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	453	0	0
Non-Labor	Zero-Based	0	0	0	0	0	838	412	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,291	412	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0

Business Purpose:

Purchase LMS system for storing training content, electronic testing (for both OpQual and core classes) and user-friendly reporting purposes to improve the quality and integrity of the training program. LMS system would include using mobile device for OpQual testing and evaluations, minimizes or eliminates data entry errors, ensures that grading is validated, and streamlines the process of inputting grades into the SAP system. The LMS system would include a wallet card for each employee with real-time updating of employees' qualifications which can be viewed upon request. An electronic system would save more than 600K paper records per year.

Physical Description:

OQ and Training currently operate on a paper based training system which generates 600,000 paper records per year and is inefficient and time consuming. The current system leaves many opportunities for data entry error, or grading inaccuracy due to its manual nature. OQ/Training are proposing adopting a vendor solution like the ones used by PG&E and Southwest Gas to automate training delivery and testing for OQ knowledge and performance tests as well as training core tests.

Project Justification:

The project would enhance the quality of content delivered during training, provide more multimedia options for hosting training content, streamline training process, allow students to access materials at their convenience, and provide a greatly enhanced qualification verification process via the QR Qualification Cards.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756G**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
Workpaper Detail:	00756G.001 - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
In-Service Date:	12/31/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	453	0	0
Non-Labor	213	0	0
NSE	0	0	0
Total	**666**	**0**	**0**
FTE	3.9	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
Workpaper Detail:	00756G.001 - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
Workpaper Detail:	00756G.002 - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
In-Service Date:	12/31/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	625	0	0
NSE	0	0	0
Total	**625**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
Workpaper Detail:	00756G.002 - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
Workpaper Detail:	00756G.003 - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
In-Service Date:	03/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	412	0
NSE	0	0	0
Total	**0**	**412**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00756G - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation
Workpaper Detail:	00756G.003 - RAMP - INCREMENTAL 19064 Operator Qualification & Training Process Automation

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00766B - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00766.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00766B - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	363	0	0
Non-Labor	Zero-Based	0	0	0	0	0	590	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**953**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0

Business Purpose:

Provide for electronic capture of checklists, test results, and other documentation in order to avoid future incremental FTE.
Additionally, enable an automated interface/entry of operator qualifications based on all requirements for the qualification being completed (instruction, test, observation, etc.).

Physical Description:

Record Employee Training and Qualifications in SAP Ops Qual.
Operator Qualifications need to be kept on record for the life of the asset plus 5 years.
Ability to perform re-qualifications in the field.
Ability to capture electronic signature.

Project Justification:

•Avoid additional labor costs to manage shorter re-testing frequencies and larger number of tasks tracked via SAP Operator Qualifications. This will be accomplished by integrating the training system with SAP.
•Automated and electronic record handling should reduce data entry errors, manual research and resolution of those, as well as associated compliance penalties. Penalties are minimally $50K per day per employee for each violation discovered.
•Reduced manual workload should increase ability to stay in compliance, thereby, maintaining safety standards, company reputation, and customer confidence.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00766.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00766B - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00766B**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00766.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00766B - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP
Workpaper Detail:	00766B.001 - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP

In-Service Date: 11/30/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	363	0	0
Non-Labor	590	0	0
NSE	0	0	0
Total	**953**	**0**	**0**
FTE	3.2	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00766.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00766B - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP
Workpaper Detail:	00766B.001 - RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00774V - RAMP - INCREMENTAL 84309 CPD PHASE 3

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774V - RAMP - INCREMENTAL 84309 CPD PHASE 3

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	1,255	0	0
Non-Labor	Zero-Based	0	0	0	0	0	1,430	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	2,685	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0

Business Purpose:

The work proposed for 2016 and 2017 includes enhancements to the functionality of SAP, Click Mobile and GWD, specifically:
•Improve accuracy of and capacity of data collection and reporting for regulatory compliance activities such as check to abandon, MSA Inspection, measurement & regulation, planning, and reporting capability;
•Improve customer satisfaction with website solution for SCG customers to view project status and reduce the call volume within the planning departments.
•Improve contractor construction process with a method to digitally submit completed construction information and eliminate the paper process to manage the completion of work more timely and efficiently.
•Improve data collection and processing of SDG M&R work by creating interface between CISCO and SAP.
•Identify and resolve differences between SoCalGas and SDG&E management of gas compliance-related data and reporting.
•Additional enhancements to support the integration of data and the completion of field work (i.e. M&I leakage and M&R) are also within scope, and will be further defined as the project moves forward and efforts are valued and prioritized.
•Support for SAP Upgrade project (HANA ECC upgrade) for CPD regression testing and troubleshooting

Physical Description:

Complete and Implement MSA Inspection integration with PACER and SAP for a more streamline solution with maintenance and inspection and CPD distribution work activity.
Improve contractor construction process with a method to digitally submit construction completion information (Gas Service Order, Excavation, and As Built forms) and eliminate the paper process to manage the completion of work more timely and efficiently.
Complete and implement a solution for SCG construction customers to access project status information via website to improve on customer satisfaction.
Improve on service history posting to support more timely submittal of service posting back into SAP from MDT.
Automate Check to Abandon (C2A) to eliminate manual steps within the process.
Additional enhancements to support the integration of data and the completion of field work (i.e. M&I leakage and M&R,), compliance reporting, and improvements to SCG training environment, automation to transfer costs from capital to O&M for cancelled projects are also within scope, and will be further defined as the project moves forward and efforts are valued and prioritized
Complete technical tasks necessary to decommission legacy system: CMS

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00774V - RAMP - INCREMENTAL 84309 CPD PHASE 3

Project Justification:

Benefits include enhancements to efficiency, ability to demonstrate compliance and avoidance of non-compliance through improved work processes, documentation, and data integration.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00774.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00774V - RAMP - INCREMENTAL 84309 CPD PHASE 3

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00774V**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774V - RAMP - INCREMENTAL 84309 CPD PHASE 3
Workpaper Detail:	00774V.001 - RAMP - INCREMENTAL 84309 CPD PHASE 3
In-Service Date:	06/30/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	1,255	0	0
Non-Labor	1,430	0	0
NSE	0	0	0
Total	2,685	0	0
FTE	10.9	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00774.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00774V - RAMP - INCREMENTAL 84309 CPD PHASE 3
Workpaper Detail:	00774V.001 - RAMP - INCREMENTAL 84309 CPD PHASE 3

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	**2018**	**2019**
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

**Beginning of Workpaper Group
00776AD - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AD - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	274	0	0
Non-Labor	Zero-Based	0	0	0	0	0	652	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**926**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0

Business Purpose:

Beyond the benefits of the new platform and functionality, one of the key drivers motivating the upgrade is to remain within the framework of vendor support. In addition to avoiding maintenance support uplift – vendor support becomes more of a challenge (and expensive) by continued delay of the upgrade. Further, the upgrade project is more than just a technical upgrade project – it brings us closer to the original vision of the OpEx program. There are a number of positive benefits extending beyond ensuring vendor support, including;
•Technology positioning, setting us up for success in driving out additional benefits as well as laying the potential groundwork for a single enterprise Scheduling and Mobile instance
•Stabilizing the product will reduce the ongoing frustration within the existing user community and greatly increase the likelihood of acceptance and use of the systems

By not upgrading, we put ourselves at risk for:
•Ongoing deterioration in the user community in our ability to delivery timely and quality services (enhancements, system performance)
•Missed opportunities to realize previously declared (and new / additional) productivity gains
•Additional vendor support costs and deterioration of providing enhancements to our existing version (additional uplift costs, potentially avoided customized maintenance costs)

Physical Description:

Due to limitations within Click 7.5 and a highly customized mobile solution, the implementation of latest version of Click will provide Sempra Utilities the platform to address and resolve many of the current business and software issues by leveraging more out of the box functionality, minimizing customization points, increasing internal Sempra IT development capabilities, and improving operational and KPI reporting and business insight – as well as position Sempra Utilities to remain current with Vendor Support. Upgrades to the Service Optimization Suite (Schedule, Mobile and Analyze software packages) are included in this project as well as server hardware replacements.

The Click system upgrade is a multi-phased project, including;
•Upgrade and migration of the system to the latest version of Click
•Development of an improved Payroll application (and supporting components)
•Mobile usability and form improvements

Project Justification:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776AD - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)

Morning Shuffle: New real-time crew management board will allow for opportunities of business process improvement for business units. Increase accuracy of crew management by allowing real time view between Area Resource Scheduling Organizations, crews and Field Supervisors. Reduce crew setup errors with an easier and simplified crew management board.
•SDG&E and SCG – Recover 4-6 minutes of previously lost productivity (per day savings)
•SCG – Recovery of up to 15 minutes per crew allocation change/update for Dispatchers

Improved "Enhancement Delivery Time": The upgraded system provides a technological platform that enables us to take further ownership and increase enhancement delivery time. This new platform will further allow us to move away from a system of customizations and closer to a system of configurations; resulting in stability, quicker turnaround and shorter test cycles. A system built more upon configurations will reduce effort spent on managing and troubleshooting.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AD - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AD**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AD - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)
Workpaper Detail:	00776AD.001 - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)
In-Service Date:	03/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	274	0	0
Non-Labor	652	0	0
NSE	0	0	0
Total	926	0	0
FTE	2.4	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AD - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)
Workpaper Detail:	00776AD.001 - RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776AH - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL
WEBSITE REFRESH

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AH - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	314	0	0
Non-Labor	Zero-Based	0	0	0	0	0	261	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**575**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0

Business Purpose:

Develop a standardized platform to stand-up new sites across Gas Engineering; Empower content owners to maintain their sites by providing them the required tools and training guides; and enable enhanced searching capabilities to locate all the relevant information for documents, links, points of contact, project status, etc. Provide centralization and consistency across all the information and consolidate disparate information into one system.

Physical Description:

Develop and provide a framework for planning, design, development, testing, and transition of the Gas Engineering and other departmental sites to a new SharePoint technology by utilizing its the available tools and templates:

a) Provide a location for managed web content regarding Gas Engineering,   Gas Infrastructure and show how Gas Engineering organization and departments fit together in a uniform framework with a consistent look and feel. Standardized sections will include:
    i) Gas Infrastructure
    ii) Tools & Materials
    iii) Knowledge Management
    iv) Frequently Asked Question
    v) Department and Team Definitions, Roles and Responsibilities
b) Empower individual content owners to collaborate with teammates to create and maintain large volumes of content in a consistent and timely manner.

Project Justification:

a) Provide efficiency in data collection by empowering individual content owners
b) Enhance search capability resulting in employees saving time searching for valuable data
c) Reuse of development across departments

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AH - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AH**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AH - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH
Workpaper Detail:	00776AH.001 - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH
In-Service Date:	09/30/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	314	0	0
Non-Labor	261	0	0
NSE	0	0	0
Total	**575**	**0**	**0**
FTE	2.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AH - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH
Workpaper Detail:	00776AH.001 - RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE REFRESH

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	524	0
Non-Labor	Zero-Based	0	0	0	0	0	0	354	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	878	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0

Business Purpose:

This project will enhance existing dashboards and provide new KPI dashboards and reports by leveraging existing capabilities and resources of 1) Enterprise SAP HANA platform, 2) SAP Business Objects (BOBJ) reporting platform, 3) GOPA Phase 2 & 3 reports, MR Compliance Reports.

Physical Description:

Currently there are data inaccuracies between Click and SAP timesheet information, cost per order and Click reports, and we also lack the ability to delineate subsets of work such as residential from C&I for the same size meter or work type - All of these lead to compliance risks, as well as missed opportunities to identify processs improvements and increased labor to manually analyze and cross-reference all sets of data in order to validate critical operational reports. This project proposes to implement enhanced M&R analytics and KPI's in SAP HANA to improve data consistency and accuracy across all in-scope platforms.

Project Justification:

1) Reduces compliance and financial risks associated with data errors caused by manual data collection and inefficient reporting processes.
2) Enables easily accessible, accurate, real-time reports to support routine GRC reports and any business operational process requests.
3) Enables business users to quickly and easily modify/add additional data from the M&R HANA data repository into a standard Business Objects report in support of new regulatory information requests.
4) Increases business insight for more informed decision making, capacity planning, and proactive identification and/or correction of trends by quickly providing new, more detailed, and accurate analytical reports to a wider audience.
5) Eliminates duplicate efforts by standardizing and centralizing the reports into a single reporting system that can be accessed 'as needed' by multiple business users.
6) Minimizes incremental data extraction effort and costs (IT and Business) by leveraging reporting infrastructure.
7) Reduces risks of relying on a single resource for reporting, and eliminates bottlenecks and/or delays by enabling additional resources to obtain and provide reports.
8) Improves confidence in the accuracy of the data and reduces correction re-work by eliminating errors caused by human intervention.
9) Bolsters cross-departmental knowledge sharing and collaboration by providing more accessible , easy-to-read, standard reports.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports
Workpaper Detail:	00776F.001 - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports
In-Service Date:	12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	524	0
Non-Labor	0	319	0
NSE	0	0	0
Total	0	843	0
FTE	0.0	4.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports
Workpaper Detail:	00776F.001 - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

Workpaper Detail: 00776F.002 - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	35	0
NSE	0	0	0
Total	**0**	**35**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776F - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports
Workpaper Detail:	00776F.002 - RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Reports

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,023	1,023
Non-Labor	Zero-Based	0	0	0	0	0	0	880	880
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	1,903	1,903
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	8.9	8.9

Business Purpose:

Develop a comprehensive mobile infrastructure and a set of software solutions for Gas Operations computerized field data collection across the Sempra Energy Utilities.

Physical Description:

- Inventory all existing field data collection needs in Operations, Construction, and Maintenance business units of SCG and SDG
- Evaluate a maturity of existing computerized solutions
- Evaluate maturity of existing enterprise mobile network infrastructure
- Enhance mobility network infrastructure if required
- Enhance/upgrade existing solutions as required
- Develop field data collections solution (s) in areas not covered by the existing approved solutions
- Integrate/consolidate existing and new solutions as appropriate

Project Justification:

Improve reliability of all mission critical systems that rely on field data collection. Improve Company's compliance with Federal and State regulatory requirements. Improve pipeline safety.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776G**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
Workpaper Detail:	00776G.001 - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
In-Service Date:	12/31/2018
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	1,023	0
Non-Labor	0	440	0
NSE	0	0	0
Total	0	1,463	0
FTE	0.0	8.9	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
Workpaper Detail:	00776G.001 - RAMP - INCREMENTAL 19067 Field Data Collection with eForm

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	**2018**	**2019**
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
Workpaper Detail:	00776G.002 - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
In-Service Date:	12/31/2018
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	440	0
NSE	0	0	0
Total	0	440	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
Workpaper Detail:	00776G.002 - RAMP - INCREMENTAL 19067 Field Data Collection with eForm

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
Workpaper Detail:	00776G.003 - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
In-Service Date:	11/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	1,023
Non-Labor	0	0	880
NSE	0	0	0
Total	**0**	**0**	**1,903**
FTE	0.0	0.0	8.9

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776G - RAMP - INCREMENTAL 19067 Field Data Collection with eForm
Workpaper Detail:	00776G.003 - RAMP - INCREMENTAL 19067 Field Data Collection with eForm

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Construction Start Date: In Service Date:11/30/2019

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	507	912	479
Non-Labor	Zero-Based	0	0	0	0	0	619	974	425
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**1,126**	**1,886**	**904**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.4	8.0	4.2

Business Purpose:

The project will focus on application development, configuration, and data capture to support compliance reporting, efficiency and continuous improvements and the ability to integrate with GIS for data analysis. The scope also includes enhancements identified through Fueling our Future Initiative.
-Provide Mobile solution for all inspection activities and e-form to report results.
-Develop an interface with KorTerra and SAP/GIS and SAP/GIS (in sync data) to support failure prevention analysis and other reporting requirements
-Develop ongoing Operational and Compliance (GO112F, CFR49) Reports (HANA)
-Support and align with GIS on enhancements for future state of bread crumbing technology (with smart tablet technology)
-Improve M&R form redesign to gain efficiencies
-Improve efficiencies on existing Gas Distribution structure and overall alignment across work groups

Physical Description:

The project will continue to improve and implement efficiencies to Gas Distribution and MRC. to maintain compliance with all Federal and State regulations (i.e. PHMSA, GO 112F, SB1371) and continue to drive changes that require our systems to change in order to maintain system integrity and ensure compliance.

Project Justification:

Meet all Federal and State Regulations and reporting requirements.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776H**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
Workpaper Detail:	00776H.001 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
In-Service Date:	12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	507	0	0
Non-Labor	310	0	0
NSE	0	0	0
Total	**817**	**0**	**0**
FTE	4.4	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
Workpaper Detail:	00776H.001 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

Workpaper Detail: 00776H.002 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

In-Service Date: 04/30/2019

Description:

RAMP

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	0	0	479
Non-Labor	0	0	425
NSE	0	0	0
Total	**0**	**0**	**904**
FTE	0.0	0.0	4.2

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
Workpaper Detail:	00776H.002 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

Workpaper Detail: 00776H.003 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	912	0
Non-Labor	0	974	0
NSE	0	0	0
Total	**0**	**1,886**	**0**
FTE	0.0	8.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
Workpaper Detail:	00776H.003 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
Workpaper Detail:	00776H.004 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
In-Service Date:	06/30/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	309	0	0
NSE	0	0	0
Total	**309**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776H - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements
Workpaper Detail:	00776H.004 - RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvements

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection
Project (Phase II)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	1,525	430
Non-Labor	Zero-Based	0	0	0	0	0	0	1,892	826
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**3,417**	**1,256**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	13.3	3.7

Business Purpose:

Project scope is in line with the EAM- Enterprise Asset Management road map to move to a single system (SAP) to manage inspection related activities. The project will focus on application development, configuration, and data capture to support compliance reporting, efficiency improvements and the ability to integrate with GIS for data analysis.
Project includes the following:
- Develop High Pressure Assets and DOGGR data model in SAP PM for Transmission and Storage
(Model Gas Distribution MP structure/solution)
-Improve efficiencies on existing Gas Distribution structure and overall alignment across work groups
-Develop operator and equiment reference back to the inspection records for reporting.
-Maximo data cleansing (ahead of conversion of historical data)
-Maximo to SAP data conversion
-Develop GUI (usability)
-Provide Mobile solution for all inspection activities and e-form to report results.
-Develop an interface with KorTera/GIS and SAP/GIS (in sync data) to support failure prevention analysis and other reporting requirements
-Develop Operational and Compliance Reports (HANA)
-Support and align with GIS on enhancements for future state of bread crumbing technology (with smart tablet technology)
-Improve M&R form redesign to gain efficiencies

Physical Description:

The project will continue moving the remaining Transmission and Storage inspection activity (e.g. Valves, CP, Reg. Station, Compressor Stations) from Maximo into SAP and improve and implement efficiencies to Gas Distribution to align all Gas Operations maintenance and inspection activities for the overall management of our inspection program and single source for compliance order generation and reporting for all Gas Operations.
Additionally, Federal and State regulations (i.e. PHMSA, GO 112F, SB1371) continue to drive changes that require our systems to change in order to maintain system integrity and ensure compliance.

Project Justification:

Enables integration with other Business Units within SAP (e.g. Supply Chain, Operator and Tool qualifcations, Finance, and Human Resources)
Integration with SAP Materials Management aligns with the pipeline material traceability program being implemented.
 Compliance tracking and reporting will be consistent for Gas Operations and Pipeline Integrity
Improvement in the overall management and reporting of inspection programs

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776I**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
Workpaper Detail:	00776I.001 - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	1,525	0
Non-Labor	0	946	0
NSE	0	0	0
Total	**0**	**2,471**	**0**
FTE	0.0	13.3	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
Workpaper Detail:	00776I.001 - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
Workpaper Detail:	00776I.002 - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
In-Service Date:	12/31/2018
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	946	0
NSE	0	0	0
Total	0	946	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
Workpaper Detail:	00776I.002 - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
Workpaper Detail:	00776I.003 - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

In-Service Date: 04/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	430
Non-Labor	0	0	826
NSE	0	0	0
Total	**0**	**0**	**1,256**
FTE	0.0	0.0	3.7

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776I - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)
Workpaper Detail:	00776I.003 - RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspection Project (Phase II)

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,189	4,657
Non-Labor	Zero-Based	0	0	0	0	0	0	2,386	9,450
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	3,575	14,107
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	10.3	40.5

Business Purpose:

The focus of the project is to implement a robust SAP solution for all high pressure construction end to end, including
planning and designing and scheduling of work to pipeline contractors.
The project includes the following:
-Develop ability to create, plan, schedule and execute construction work
-Develop tasks and workflows to manage the overall life cycle of a project
-Develop necessary e-forms to capture pertinent asset DNA
-Develop ability for contractors to submit completed construction forms electronically.
-Develop asset sychronization with M&I and GIS as required
-Provide operational and compliance reporting
-Integrate with Material Traceability Batch module

Physical Description:

My Projects is the current system used to track High Pressure construction projects with limitations and inadequate to
capture and track the overall life cycle of high pressure projects. The project would Utilize SAP for planning of high pressure
projects for all organizations, improving visibility of projects, reduce cost and increase project closeout (leverage work
already completed as part of CPD for Distribution construction activity).

Project Justification:

Reduce cost by moving to the Enterprise work management system and eliminate the My Projects software application
maintenance and support.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776J**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)
Workpaper Detail:	00776J.001 - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	1,189	0
Non-Labor	0	2,386	0
NSE	0	0	0
Total	**0**	**3,575**	**0**
FTE	0.0	10.3	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)
Workpaper Detail:	00776J.001 - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)
Workpaper Detail:	00776J.002 - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)
In-Service Date:	11/30/2019
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	4,657
Non-Labor	0	0	9,450
NSE	0	0	0
Total	0	0	14,107
FTE	0.0	0.0	40.5

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776J - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)
Workpaper Detail:	00776J.002 - RAMP - INCREMENTAL 19070 High Pressure Construction (Move from My Projects to SAP)

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT Capital

Program Description: IT Capital

Risk/Mitigation:

Risk: Records Management

Mitigation: IT Capital

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	37,233	25,628	18,262
High	45,507	31,324	22,320

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC)
CPD Metrics & Analytics

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analytics

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	460	138	0
Non-Labor	Zero-Based	0	0	0	0	0	160	196	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	620	334	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.0	1.2	0.0

Business Purpose:

This project will expand the existing reporting platform implemented by the M&R Compliance Project by adding CPD order data and metrics to M&R compliance KPI's.
This project will enhance existing dashboards and reports by leveraging existing capabilities and resources of 1) Enterprise SAP HANA platform, 2) SAP Business Objects (BOBJ) reporting platform, 3) GOPA Phase 2 & 3 reports, along with new data integration with source system SAP CPD.
Organizational Scope = CPD Project SME's, MRC, IT

Physical Description:

Once the CPD Project is complete, new CPD (Construction Planning & Design) order data and metrics will need to be added to M&R Compliance reports and KPI's to ensure that the visibility into these orders are readily available to meet routine audit and operational requests.

Project Justification:

1) Reduces compliance and financial risks associated with data errors caused by manual data collection and inefficient reporting processes.
2) Enables easily accessible, accurate, real-time reports to support routine GRC reports and any business operational process requests.
3) Enables business users to quickly and easily modify/add additional data from the M&R HANA data repository into a standard Business Objects report in support of new regulatory information requests.
4) Increases business insight for more informed decision making, capacity planning, and proactive identification and/or correction of trends by quickly providing new, more detailed, and accurate analytical reports to a wider audience.
5) Eliminates duplicate efforts by standardizing and centralizing the reports into a single reporting system that can be accessed 'as needed' by multiple business users.
6) Minimizes incremental data extraction effort and costs (IT and Business) by leveraging reporting infrastructure.
7) Reduces risks of relying on a single resource for reporting, and eliminates bottlenecks and/or delays by enabling additional resources to obtain and provide reports.
8) Improves confidence in the accuracy of the data and reduces correction re-work by eliminating errors caused by human intervention.
9) Bolsters cross-departmental knowledge sharing and collaboration by providing more accessible, easy-to-read, standard reports.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Anal

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776K**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analyt

Workpaper Detail: 00776K.001 - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & An

In-Service Date: 12/31/2017

Description:

RAMP

	Forecast In 2016 $(000)		
Years	2017	2018	2019
Labor	460	0	0
Non-Labor	135	0	0
NSE	0	0	0
Total	595	0	0
FTE	4.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analytics
Workpaper Detail:	00776K.001 - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Anal

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analyt
Workpaper Detail:	00776K.002 - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Ar

In-Service Date: 12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	25	0	0
NSE	0	0	0
Total	**25**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analytics
Workpaper Detail:	00776K.002 - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Anal

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	**2018**	**2019**
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analyt
Workpaper Detail:	00776K.003 - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & An

In-Service Date: 02/28/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	138	0
Non-Labor	0	196	0
NSE	0	0	0
Total	**0**	**334**	**0**
FTE	0.0	1.2	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776K - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Analytics
Workpaper Detail:	00776K.003 - RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance (MRC) CPD Metrics & Anal

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

　Risk: Gas

　Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance
Departmental Reporting System

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting System

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	256	0	0
Non-Labor	Zero-Based	0	0	0	0	0	1,081	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**1,337**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0

Business Purpose:

Evaluate existing Business Intelligence technologies and select the enterprise reporting platform. Upgrade IBM Cognos BI
to the current general release or migrate the reporting function onto another enterprise reporting system - HANA, A.C.E,
etc.

Physical Description:

Develop enterprise-wide integrated reporting system for Gas Operations & System Integrity (GOSI) and Major Projects as
part of the Enterprise Asset Management vision.

Project Justification:

Improve visibility of the mission critical data. Improve Company's compliance with Federal and State reporting requirements.

Note: Totals may include rounding differences.

Southern California Gas Company
2019 GRC - APP
Capital Workpapers

Area: INFORMATION TECHNOLOGY
Witness: Christopher R. Olmsted
Budget Code: 00776.0
Category: I. Gas System Integrity
Category-Sub: 1. Technical Obsolescence
Workpaper Group: 00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting Syste

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776L**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting System
Workpaper Detail:	00776L.001 - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting Sy
In-Service Date:	11/30/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	256	0	0
Non-Labor	531	0	0
NSE	0	0	0
Total	787	0	0
FTE	2.2	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting System
Workpaper Detail:	00776L.001 - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting Syste

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting System
Workpaper Detail:	00776L.002 - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting Sy
In-Service Date:	11/30/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	550	0	0
NSE	0	0	0
Total	**550**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776L - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting System
Workpaper Detail:	00776L.002 - RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance Departmental Reporting Syste

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	67	949	148
Non-Labor	Zero-Based	0	0	0	0	0	114	2,157	115
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**181**	**3,106**	**263**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.6	8.3	1.1

Business Purpose:

Materials management through logistics will be enhanced as follows:
- key description only items will be coded
- batch management will be introduced as needed
- expand barcoding of products will be batch #, and other information as required; however, barcode printing for company
application of labels will also be provided
- electronic vendor interfaces will create appropriate product data in SAP
- logistics mobility transactions will be enhanced to ease overheads introduced by these changes
- incoming QM inspections to provide Gas Engineering checkpoint for materials acceptance
- potential inspection/acceptance before materials reuse tbd

Physical Description:

Traceability of key materials through supply chain required for regulatory compliance and operational safety. Currently,
there is a lack of visibility and traceability of pipe, pipe fittings, and other pipeline materials through supply chain. Inability to
centrally track these materials to the issued job, nor centrally view quality, test, and other material characteristic data.
Inadequate mechanisms in place to track discrepant materials nor any 'where used' lists to recall the product.
An existing Material Tracebility project is currently in progress, which will implement Material Tracebility Capabiltiies for
high pressure PVFE material above 12 inches, and the project is separated into Inventory Management, Wave 1 and Wave
2.
This concept document will establish a new project, which will extend the material traceability capabilities to cover
remaining gas material, and it will be delivered in 2 waves:
- Wave 3 - 12 inches and lower diameter HP PVFE
- Wave 4 - Medium and Low Pressure PVFE

Project Justification:

Further details of pipeline materials will enable better safety monitoring and management. Asset information will also be
available for data mining. This will also increase validity of data entry by the field force.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776M**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.001 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
In-Service Date:	12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	67	0	0
Non-Labor	114	0	0
NSE	0	0	0
Total	**181**	**0**	**0**
FTE	0.6	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.001 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.002 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	949	0
Non-Labor	0	1,720	0
NSE	0	0	0
Total	0	2,669	0
FTE	0.0	8.3	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.002 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.003 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
In-Service Date:	03/31/2019
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	148
Non-Labor	0	0	115
NSE	0	0	0
Total	**0**	**0**	**263**
FTE	0.0	0.0	1.1

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.003 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.004 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	437	0
NSE	0	0	0
Total	0	437	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776M - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4
Workpaper Detail:	00776M.004 - RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 & Wave 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

**Beginning of Workpaper Group
00777L - RAMP - INCREMENTAL 84225 GIS UPGRADE**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777L - RAMP - INCREMENTAL 84225 GIS UPGRADE

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	412	0	0
Non-Labor	Zero-Based	0	0	0	0	0	4,331	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**4,743**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0

Business Purpose:

The core software used for the enterprise GIS requires an upgrade in order to receive full vendor support, new functionality, improve performance, and further stabilization of the system. The objective of this project is to upgrade the enterprise GIS system to the ESRI and Schneider recommended utility version of 10.2.1.X This new special version, grants the utilities two additional years of support and ending in July 2019.

Physical Description:

Gas and Electric Desktop (AFES, GWD) Upgrade both the gas and electric desktop applications with a focus on performance improvements and system stabilization.
Electric Schematics – Upgrade schematic generation and maintenance tools to maintain current levels of efficiency.
Replace in kind or enhancements to end user usability.
Integration – Upgrade all the integration components.
GIS Web – Upgrade web to a newer version.
Mobile GIS – Only upgrade the backend (replication process) to continue to support the existing MDT client environment.
Supplemental GIS - Upgrade all supporting systems that are used in the development, disaster recovery, QA, and training of GIS desktop, Integrations, Web, and Mobile

Project Justification:

1.Improve system performance. See appendix for vendor and peer utility performance metrics. Performance and baseline improvements will be identified during the project.
2.Improve system stability.
3.Provide new product functionality (e.g. schematics for electric, feeder manager 2.0).
4.Gain longer support lifecycle (July 2019)

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777L - RAMP - INCREMENTAL 84225 GIS UPGRADE

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777L**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777L - RAMP - INCREMENTAL 84225 GIS UPGRADE
Workpaper Detail:	00777L.001 - RAMP - INCREMENTAL 84225 GIS UPGRADE
In-Service Date:	08/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	412	0	0
Non-Labor	4,331	0	0
NSE	0	0	0
Total	**4,743**	**0**	**0**
FTE	3.6	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777L - RAMP - INCREMENTAL 84225 GIS UPGRADE
Workpaper Detail:	00777L.001 - RAMP - INCREMENTAL 84225 GIS UPGRADE

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

**Beginning of Workpaper Group
00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	74	74
Non-Labor	Zero-Based	0	0	0	0	0	0	2,500	2,500
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	2,574	2,574
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6

Business Purpose:

This project is to refresh Mobile Data Terminal units supported by Enterprise Systems Solutions Field Hardware Support (FHS) and used by SCG field force personnel. This project complies with the corporate implementation of Microsoft Windows 10 and Microsoft Office 365.

Physical Description:

Project Scope consist of replacing current MDT and peripherals with lighter weight tablet, cabinet docking station replacement, vehicle modifications for 1200 MDT's within a three year span. Also includes office set up for Superivisor Enablement MDT's, as required.FHS Help North Supports 1200 Mobile Data Terminal units in the field used by Distribution (LCT/CT) crews, System Protection, M&R, DRIP), Locate & Mark, Supervisors, and Transmission Locate & Mark field crews and instrument technicians.
FHS Help North Supports 1200 Mobile Data Terminal units in the field used by Distribution (LCT/CT) crews, System Protection, M&R, DRIP), Locate & Mark, Supervisors, and Transmission Locate & Mark field crews and instrument technicians.

Funding for this project will cover the hardware and equipment, and vendor services for the following MDT user groups:
Supervisor Enablement – (Panasonic CF-53)
Instrument Technician (Transmission) - (Panasonic CF53)
Locate & Mark (Distribution & Transmission) – (Panasonic CF-31)
LCT/CT – (Panasonic CF-31)
M&R)Measurement and Regulatory) - (Panasonic CF-31)
SPS (Cathodic Protection) - (Panasonic CF-31)
DRIP (Panasonic CF-31)

Project Justification:

As we have seen thru the OpEx Field Force Initiative, MDTs have become an essential tool for the field employees. Efficiencies on field productivity have made significant strides. With the use of mobile devices users are connected with our work management applications (Click Mobile and Korterra) as well as scheduling, GIS mapping, Smart Meter and other measurement software packages.
It is important that the field employees have the appropriate hardware needed to conduct their daily activity to ensure efficiency and productivity across the varioius workstreams. This will insure continuance of efficiency and increased productivity as work orders are received and submitted in real-time from the MDT to our work management systems.
The optimum lifecycle of a MDT is greatly impacted by several things - age and environment is a big factor with these machines as they are used in outdoor elements.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00777.0

Category: I. Gas System Integrity

Category-Sub: 1. Technical Obsolescence

Workpaper Group: 00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00777N**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020
Workpaper Detail:	00777N.001 - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	74	0
Non-Labor	0	2,500	0
NSE	0	0	0
Total	**0**	**2,574**	**0**
FTE	0.0	0.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020
Workpaper Detail:	00777N.001 - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	**2018**	**2019**
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020
Workpaper Detail:	00777N.002 - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020
In-Service Date:	11/30/2019
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	74
Non-Labor	0	0	2,500
NSE	0	0	0
Total	0	0	2,574
FTE	0.0	0.0	0.6

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00777.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00777N - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020
Workpaper Detail:	00777N.002 - RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	761	138	138
Non-Labor	Zero-Based	0	0	0	0	0	321	73	119
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,082	211	257
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	6.6	1.2	1.2

Business Purpose:

This project will expand the existing reporting platform implemented by the GOPA Phase 2 & 3 projects.
This project will enhance existing dashboards and provide new KPI dashboards and reports by leveraging existing capabilities and resources of 1) Enterprise SAP HANA platform, 2) SAP Business Objects (BOBJ) reporting platform, 3) GOPA Phase 2 & 3 reports, along with new data integrations from PACER & SORT (replacement systems), CIS, CISCO, EIR, and MAXIMO source systems. This project will work with GasOps to develop standards and thresholds that will be used to implement reports that will provide new GasOps "goal and financial performance" and exception reports. This project will establish processes and resources to support ongoing standard changes and process improvement follow-up.
In-scope Operational Departments include Gas Operations, Customer Service Field, ARSO, CSF Dispatch, and Emergency Services.
In-scope "existing" system integrations: SAP PM, SAP FI/CO, MyTime, Click, Korterra , other TBD
In-scope data fields: Material Cost Planned/Actual Material Cost, Labor Costs, Paving, Contract Costs, etc. Pipe Footage amount (Existing SAP planned and Actual Cost data), Work Order Number, Work Type, Planner Name, #of Services, Main pipe footage, Crew Name, Crew Type (company/contractor), Completion Date, etc. (existing SAP Data), Other TBD

Physical Description:

In 2017, SCG and SDG&E anticipates new General Order 112-F reporting metrics that will be driven by new state mandated regulations requiring annual reporting of response times to reports of leaks and damages reported to the Operator by its own employees or by the public, as well as additional GOPA KPI requirements that will be driven by new regulations and audits stemming from the Aliso Canyon incident. These new requirements will will lead to new SAP HANA development in order to provide on-demand dashboards and reports to meet those requirements. This project will also develop new operational dashboards and reports that measure baseline operational and financial goals against performance, as well as SDG timesheet data that will be used to identify gaps, opportunities for process improvement and resource utilization by establishing and measuring against GasOps operational/financial standards and thresholds, and bringing in the timesheet data once it becomes availabe from the Timesheet Redesign project.

Project Justification:

1) Meet new state mandated regulations requiring response time tracking of data.
2) Deliverable metrics for annual reporting requirements.
3) Provide business insight into SDG operations by providing "timesheet based" analytical data and reports to SDG Management
4) Avoid labor and effort required to produce ADHOC reports to meet new requirements
5) Executes FoF ideas 290 & 300

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00786A**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.001 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
In-Service Date:	12/31/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	761	0	0
Non-Labor	268	0	0
NSE	0	0	0
Total	1,029	0	0
FTE	6.6	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.001 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.002 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
In-Service Date:	12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	138	0
Non-Labor	0	73	0
NSE	0	0	0
Total	0	211	0
FTE	0.0	1.2	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.002 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.003 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
In-Service Date:	04/30/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	53	0	0
NSE	0	0	0
Total	**53**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.003 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.004 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
In-Service Date:	05/31/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	138
Non-Labor	0	0	119
NSE	0	0	0
Total	**0**	**0**	**257**
FTE	0.0	0.0	1.2

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	I. Gas System Integrity
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00786A - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4
Workpaper Detail:	00786A.004 - RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	214	214
Non-Labor	Zero-Based	0	0	0	0	0	0	1,500	1,500
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	1,714	1,714
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9

Business Purpose:

The over-arching theme on the proposed continuing project is compliance, safety and timeliness of regulatory request. The project focuses on software development, configuration and data model enhancements for CAD Systems.
This continuing project includes the following:
-Implementing AVEVA Enhancements, including Storage, Engineering and AvevaNet enhancements
-Implementing and applying enhancements to AutoCAD

Physical Description:

3DPM will improve Gas CAD solutions implemented in the 3DPM initiative to support Operations, the Distribution Integrity Management Program (DIMP), Pipeline Safety Enhancement Program (PSEP) and the Transmission Integrity Management Program (TIMP). This work is required to support and demonstrate compliance with Federal and State regulations.   The project focuses on software development, configuration, integration and model build for CAD systems.

Project Justification:

This project represents the Capital activities that support requested DIMP and TIMP O&M activities. The project includes technical and functional application solutions to support DIMP, PSEP, TIMP and SIMP to ensure company meets regulatory compliance and reporting requirements.   Benefits are ability to demonstrate compliance, complete regulatory reporting and cost avoidance.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756A**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.001 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	214	0
Non-Labor	0	1,311	0
NSE	0	0	0
Total	**0**	**1,525**	**0**
FTE	0.0	1.9	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.001 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT Capital

Program Description: Capital gas costs for projects that will modernize and enhance the searchability, traceability and digitalization of operational asset records

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Risk/Mitigation:

Risk: Records

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.002 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
In-Service Date:	12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	189	0
NSE	0	0	0
Total	**0**	**189**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.002 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT Capital

Program Description: IT Capital

Risk/Mitigation:

Risk: GAS

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.003 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

In-Service Date: 11/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	214
Non-Labor	0	0	1,311
NSE	0	0	0
Total	**0**	**0**	**1,525**
FTE	0.0	0.0	1.9

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.003 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT Capital

Program Description: IT Capital

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.004 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

In-Service Date: 11/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	0	189
NSE	0	0	0
Total	**0**	**0**	**189**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756A - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019
Workpaper Detail:	00756A.004 - RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT Capital

Program Description: IT Capital

Risk/Mitigation:

Risk: Gas

Mitigation: GAS

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	1,071	1,071
Non-Labor	Zero-Based	0	0	0	0	0	0	3,563	3,566
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	4,634	4,637
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	9.3	9.3

Business Purpose:

The over-arching theme on the proposed continuing project is compliance, safety and timeliness of regulatory request. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems. These Gas GIS application solutions will support system wide users, compliance, safety and emergency response, and efficiency improvement project requirements.
This continuing project includes the following:
-Migrating Medium Pressure GIS to UPDM and synchronizing with High Pressure UPDM
-Provide synchronization of medium pressure asset data across GIS and SAP
-Provide access to medium pressure linear asset data via mobile GIS and mobile Leak Survey / Patrol applications
-Provide a single source for viewing all medium pressure asset data, including equipment assets, maintenance history, electronic documentation and real-time reads (OSI/PI). (EAM for Distribution)
-Provide support for Failure Prevention Analysis
-Replace enterprise Web Viewer and provide access to GIS data via Enterprise Portal
-Provide integration with AutoCAD
-Provide re-integration of add-on solutions including Risk and Threat Modeling and Hydraulic Modeling.

Physical Description:

The project will continue the implementation of Gas GIS application solutions to support Operations, the Distribution Integrity Management Program (DIMP), Pipeline Safety Enhancement Program (PSEP) , the Transmission Integrity Management Program (TIMP) and the Storage Integrity Management Program (SIMP). This work is required to support and demonstrate compliance with Federal and State regulations. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems.

Project Justification:

This project represents the Capital activities that support requested DIMP and TIMP O&M activities. The project includes technical and functional application solutions to support DIMP, PSEP, TIMP and SIMP to ensure company meets regulatory compliance and reporting requirements. Benefits are ability to demonstrate compliance, complete regulatory reporting and cost avoidance.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756C**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.002 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019
In-Service Date:	12/31/2018
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	1,071	0
Non-Labor	0	3,385	0
NSE	0	0	0
Total	**0**	**4,456**	**0**
FTE	0.0	9.3	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.002 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.003 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019
In-Service Date:	11/30/2019
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	1,071
Non-Labor	0	0	3,388
NSE	0	0	0
Total	**0**	**0**	**4,459**
FTE	0.0	0.0	9.3

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.003 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.005 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	178	0
NSE	0	0	0
Total	**0**	**178**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.005 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.006 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019

In-Service Date: 11/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	0	178
NSE	0	0	0
Total	**0**	**0**	**178**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756C - RAMP - INCREMENTAL 19061 Gas GIS 2017-2019
Workpaper Detail:	00756C.006 - RAMP - INCREMENTAL 19061 Gas GIS 2018-2019

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group

00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	442	309
Non-Labor	Zero-Based	0	0	0	0	0	0	496	346
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**938**	**655**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	3.8	2.7

Business Purpose:

In 2014 we implemented SIR 8853 that essentially would take a snapshot image of all Click M&R forms in the background and save them locally as a jpeg file. These images are archived and then sent to an offline folder to view later for troubleshooting and during CPUC audits. The images provide us visibility on what our field technician sees and what work is performed. The images also provide insights on what occurred before a user encounters an error during completion of the mobile forms, e.g. audit trail. The problem is that the offline folder in which the images are being sent to is getting to large, due to it being a consolidation of all business groups and this is causing inconsistence mapping (missing orders) and hindering document search capabilities. This project is proposing to replace the offline folder with a more robust and stable image document management system.

Physical Description:

Implementation of a new image document management system and business processes to support CLICK M&R forms and to provide the required storage capabilities and search functionality.

Project Justification:

1) Enhancing the accuracy in the data stored offline by eliminating missing orders.
2) Provide quicker more robust search capabiliites for ease of use.
3) Provide better process/functionality for the region, currently user complains of complexicity and incompleteness of offline folder.
4) A key component of our QA process has always been a review of paperwork completion and is the biggest contributor in terms of defects found. Currently, we are unable to perform this function and this would add that key component back to the QA process. Errors found during the QA process are used to drive employee effectiveness.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: I. Gas System Integrity

Category-Sub: 3. Mandated

Workpaper Group: 00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756F**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.001 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
In-Service Date:	12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	442	0
Non-Labor	0	248	0
NSE	0	0	0
Total	**0**	**690**	**0**
FTE	0.0	3.8	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.001 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.002 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
In-Service Date:	12/31/2018
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	248	0
NSE	0	0	0
Total	0	248	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.002 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.003 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

In-Service Date: 05/31/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	309
Non-Labor	0	0	173
NSE	0	0	0
Total	0	0	482
FTE	0.0	0.0	2.7

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.003 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.004 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

In-Service Date: 05/31/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	0	173
NSE	0	0	0
Total	**0**	**0**	**173**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756F - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management
Workpaper Detail:	00756F.004 - RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Management

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	428	428	0
Non-Labor	Zero-Based	0	0	0	0	0	713	1,245	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,141	1,673	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.7	3.7	0.0

Business Purpose:

Enhancements include fine tuning the newly implemented functionalites and adding necessary improvements identified through experience using the new project management tool. New enhancements include the automation of M&R maintenance process to integrate with CPD processes, the implementation of sewer lateral enhancement to allow pre-inspection prior to construction, related M&I enhancements to improve regulatory reporting and compliance, improvement on the existing training environment, project management portal, and contractor submittal of electronic construction forms (move away from forms submitted on paper), check to abandon automation (another area to move away from a paper based process). The decommisioning of the legecy construction system (CMS) will be reviewed as part of this project as well.

Physical Description:

The Project focuses on software develepment and configuration enhancements to Construction, Planning and Design Project (CPD) that fully implement SAP/Click Mobile and GWD to all SoCalGas regions at year end 2014.   Additionally, Federal and State regulations, EAM, and Fueling our Future initiatives (i.e. PHMSA, GO 112F, SB1371) continue to drive changes that require our systems to change in order to maintain and report compliance on our pipeline/system.

Project Justification:

Some enhancements with soft benefits include more effective process for job allocations with improved usability enhancements and more data readily available; better accuracy of aligning maintenance schedules and activities for M&R large meters resulting in more accurate billing and reduction of manual intervention; improved accuracy of and capacity of data collection and reporting for regulatory compliance activities such as check to abandon, MSA Inspection, measurement & regulation, planning, and reporting capability; and more accurate gas compliance-related data and reporting for both SoCalGas and SDG&E.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756H**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
Workpaper Detail:	00756H.001 - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
In-Service Date:	12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	428	0	0
Non-Labor	615	0	0
NSE	0	0	0
Total	1,043	0	0
FTE	3.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
Workpaper Detail:	00756H.001 - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 0

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
Workpaper Detail:	00756H.002 - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

In-Service Date: 12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	98	0	0
NSE	0	0	0
Total	98	0	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
Workpaper Detail:	00756H.002 - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
Workpaper Detail:	00756H.003 - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

In-Service Date: 06/30/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	428	0
Non-Labor	0	1,245	0
NSE	0	0	0
Total	**0**	**1,673**	**0**
FTE	0.0	3.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756H - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4
Workpaper Detail:	00756H.003 - RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

**Beginning of Workpaper Group
00756I - RAMP - INCREMENTAL 19072 GT Leak Survey**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	456	1,605
Non-Labor	Zero-Based	0	0	0	0	0	0	398	2,077
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**854**	**3,682**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.9

Business Purpose:

This project will incorporate a 3rd party's GPS based software, which will overlay our existing GIS pipeline maps. This project will change the way we issue, complete and store our leak survey maps by eliminating paper and moving to electronic maps. This software will interface and communicate with GIS, SAP and potentially, ClickSchedule, ClickMobile, HANA and/or DART.

Physical Description:

The SoCalGas regions are experiencing problems with the plotting and printing of paper leak survey maps from GIS and sometimes completed paper maps are difficult to locate when an auditor requests to review them. This project will eliminate the need to plot, print, ship and store 27,000 18" X 24" paper leak survey maps annually and enable quick access to completed survey maps by utilizing a handheld electronic device with GPS enabled to perform leak survey activities and storing the completed maps in our system of record, SAP.

Project Justification:

The software involved in this project will enable us to track the progress of leak survey activities through electronic reports, help to ensure that all pipe is surveyed properly via GPS 'bread crumb' tracking of leak survey activites, make the tracking and follow up for CGIs and AOCs discovered during leak survey much easier for local management via electronic reports, and allow the completed maps to be readily available for review by a supervisor or auditor via SAP.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756I**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey
Workpaper Detail:	00756I.001 - RAMP - INCREMENTAL 19072 GT Leak Survey

In-Service Date: 12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	456	0
Non-Labor	0	323	0
NSE	0	0	0
Total	**0**	**779**	**0**
FTE	0.0	3.9	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey
Workpaper Detail:	00756I.001 - RAMP - INCREMENTAL 19072 GT Leak Survey

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: o

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey
Workpaper Detail:	00756I.002 - RAMP - INCREMENTAL 19072 GT Leak Survey

In-Service Date: 02/28/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	75	0
NSE	0	0	0
Total	**0**	**75**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey
Workpaper Detail:	00756I.002 - RAMP - INCREMENTAL 19072 GT Leak Survey

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey
Workpaper Detail:	00756I.003 - RAMP - INCREMENTAL 19072 GT Leak Survey

In-Service Date: 09/30/2019

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	1,605
Non-Labor	0	0	2,077
NSE	0	0	0
Total	**0**	**0**	**3,682**
FTE	0.0	0.0	3.9

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756I - RAMP - INCREMENTAL 19072 GT Leak Survey
Workpaper Detail:	00756I.003 - RAMP - INCREMENTAL 19072 GT Leak Survey

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	881	918	0
Non-Labor	Zero-Based	0	0	0	0	0	4,256	2,980	2,000
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	5,137	3,898	2,000
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	7.7	8.0	0.0

Business Purpose:

Enhancements to existing functionalities include converting the remaining Electric work types to Click Mobile Touch, comments redesign, implementing updates to user forms, schedule optimization, allowing partial complete orders, and implementing timesheets in the Click system. ·Click Mobile Touch will allow field crews to work on a single device, complete orders as work is being performed in the field and utilize mapping tools that will be deployed in alignment with the application.
·Re-design of comments documented by field crews will ensure a streamlined process to accurately report comments from Click to SAP.
·Implementing updates to user forms and usability changes will improve Sempra's ability to ensure compliance is met.
·Improving the schedule optimization will automate work order scheduling and routing . ·Redesigning the way the system sends updates back to SAP as order are completed in the field will allow real time updates for partially completed orders and will provide visibility to ensure compliance and data integrity is met.
·Implementing timesheets within Click Mobile Touch will offer data accuracy and accountability/performance management for Sempra employees.
·The project will also evaluate the process for managing changes with the objective of isolating the impact to other projects, reduce testing cycle time, and strategically evaluate opportunities to segment fuctionality into a seperate application.

Physical Description:

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project

This Click Usability Project will focus on addressing current issues and challenges with productivity, compliance risk, safety, and data integrity regulated by GO165.
·There are opportunities to update Click to make the field users more productive in how they are routed to their work and how they fill out their work order forms. Tuning the Background Optimizer (BGO) will allow for better scheduling of work. Also, the current Click project is updating Electric Inspection work to Click Mobile Touch. Electric follow-up, emergency, and construction work are still done on a Click Mobile Classic MDT. Moving the rest of the electric work to a handheld device will increase productivity by letting the field users complete their work in the field.
·The CMP Inspection Project needs changes in Click to increase safety. These can be made in conjunction with other Electric form changes.
·There are many outstanding requests for changes to forms that could impact data integrity, compliance, and usability. Updating the forms will allow us to capture the data we need. Also, user comments in SAP and Click are not well defined. Users don't know whether the comments are sent to field users, dispatchers, planners, or clerks. This process could be streamlined to let each user see the comments they need and know where their own comments are sent.
·The current Click Mobile Timesheets can't be used by Click Mobile Touch users. Porting the timesheets to Click Mobile Touch will allow for accurate time reporting.
·There is an ongoing challenge with deploying releases quickly to users due long regression test cycles and interdependencies between workstreams. This project will evaluate possible strategies including using ITQA to supplement business testing resources, automating testing scripts and segmenting out standalone functionality.

Project Justification:

·Improved user acceptance by simplifying user experience through reengineered forms and timesheet.
·Improved performance and productivity by providing better scheduling, real time data input and system integration with other applications.
·Improved communication within the business organization with clear and streamlined comments.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756J**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project
Workpaper Detail:	00756J.001 - RAMP - INCREMENTAL 19094 Click Enhancements Project
In-Service Date:	12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	881	0	0
Non-Labor	4,256	0	0
NSE	0	0	0
Total	5,137	0	0
FTE	7.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project
Workpaper Detail:	00756J.001 - RAMP - INCREMENTAL 19094 Click Enhancements Project

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project
Workpaper Detail:	00756J.002 - RAMP - INCREMENTAL 19094 Click Enhancements Project
In-Service Date:	12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	918	0
Non-Labor	0	2,980	0
NSE	0	0	0
Total	**0**	**3,898**	**0**
FTE	0.0	8.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project
Workpaper Detail:	00756J.002 - RAMP - INCREMENTAL 19094 Click Enhancements Project

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project
Workpaper Detail:	00756J.003 - RAMP - INCREMENTAL 19094 Click Enhancements Project
In-Service Date:	03/31/2019
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	0	2,000
NSE	0	0	0
Total	**0**	**0**	**2,000**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756J - RAMP - INCREMENTAL 19094 Click Enhancements Project
Workpaper Detail:	00756J.003 - RAMP - INCREMENTAL 19094 Click Enhancements Project

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

  Risk: Gas

  Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

  Embedded Costs: 0

  Explanation:

Beginning of Workpaper Group
00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 &
2017

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	552	319	0
Non-Labor	Zero-Based	0	0	0	0	0	593	304	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,145	623	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.8	2.8	0.0

Business Purpose:

The over-arching theme on the proposed projects is compliance, safety and timeliness of regulatory request. The project focuses on software development, configuration and data model enhancements of the existing Gas CAD systems. These Gas CAD application solutions will support design users and integrate to GIS systems to support system wide users, compliance, safety and emergency response requirements.

The objective of this project is to improve information management in transitioning data from design through project closeout for high pressure and storage integrity and safety management. The project includes the following:
•   Provide support for Integration of Engineering and Design into GIS Portal
•   Develop and configure production environment
•   Implement Additional ERM Products
•   Develop SAP Gateway:
•   Provide Additional AVEVA Net Reporting
•   Implement GIS Integration
•   Deploy Additional Product Component

Physical Description:

Provide support for Integration of Engineering and Design into GIS Portal.
Develop and configure production environment.
Implementation of ERM Products.
SAP Gateway.
AVEVA Net Reporting.
GIS Integration.
Additional Product Components.

Project Justification:

This project represents the capital activities which includes technical and functional application solutions to support company regulatory compliance and reporting requirements. Benefits are ability to demonstrate compliance, complete regulatory reporting and improve CAD and downstream GIS information on the system infrastructure to support various business needs.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756P**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017
Workpaper Detail:	00756P.001 - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017
In-Service Date:	12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	552	0	0
Non-Labor	593	0	0
NSE	0	0	0
Total	1,145	0	0
FTE	4.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017
Workpaper Detail:	00756P.001 - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: I. Gas System Integrity

Category-Sub: 3. Mandated

Workpaper Group: 00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017

Workpaper Detail: 00756P.002 - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017

In-Service Date: 03/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	319	0
Non-Labor	0	304	0
NSE	0	0	0
Total	**0**	**623**	**0**
FTE	0.0	2.8	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756P - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017
Workpaper Detail:	00756P.002 - RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 2017

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

  Risk: Gas

  Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756Q - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756Q - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	1,052	0	0
Non-Labor	Zero-Based	0	0	0	0	0	3,669	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	4,721	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0

Business Purpose:

The over-arching theme on the proposed projects is compliance, safety and timeliness of regulatory request. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems. These Gas GIS application solutions will support system wide users, compliance, safety and emergency response requirements.

In an effort to streamline the leak survey process to obtain greater repeatability, synchronization with SAP/Maximo and to readily demonstrate compliance, automated enhancements for Distribution, Transmission and Storage Leak Survey will be provided. A similar approach will be initiated and executed for Pipeline Patrol and Special Surveys.   In addition a lifecycle approach for Leak Record management will be developed and implemented in order to assure all leaks, potential leaks and repaired leaks are readily available for risk analysis and DOT and compliance reporting.

SoCalGas and SDG&E maintain their system infrastructure data across multiple systems in order to meet specific program requirements.   Given the program constraints, a solution needs to be evaluated and executed to keep the data consistent and synchronized across systems and accessed from a single viewer.   While the synchronization of the Companies' high pressure asset data will be addressed under a separate project, synchronization of medium pressure asset data will be addressed under this project by providing synchronization between GIS and SAP to validate required maintenance is performed on all necessary medium pressure assets in order to support compliance.   Enhancements will also be provided to allow easy access to control data and other documents via synchronization and integration to SCADA and Document Management systems.

Emergency Operations is highly dependent on providing fast and accurate information during an emergency to minimize impacts. Application enhancements will continue to be implemented to meet these requirement

Physical Description:

Application enhancements to support Distribution, Transmission and Storage Leak Survey functionality.
Application enhancements to support Pipeline Patrol.
Application enhancements to support leak record management.
Create new tools to support DIMP Risk and Threat Modeling and application enhancements to support Special Surveys.
Application enhancements to support integration/synchronization of medium pressure asset data across GIS, SAP, Control and Document Management Systems.
Application integration/software tools to support Emergency Operations requirements.
Application enhancements to create a consolidated single viewer for Gas medium pressure equipment, maintenance and control data.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756Q - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016

Project Justification:

This project represents the capital activities which includes technical and functional application solutions to support company regulatory compliance and reporting requirements.   Benefits are ability to demonstrate compliance, complete regulatory reporting and improve GIS information on the system infrastructure to support various business needs.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756Q - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756Q**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756Q - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016
Workpaper Detail:	00756Q.001 - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016

In-Service Date: 03/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	1,052	0	0
Non-Labor	3,669	0	0
NSE	0	0	0
Total	**4,721**	**0**	**0**
FTE	9.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756Q - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016
Workpaper Detail:	00756Q.001 - RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
**00756R - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH
MGMT**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756R - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	414	0	0
Non-Labor	Zero-Based	0	0	0	0	0	3,946	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	4,360	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0

Business Purpose:

Turn on SAP Inventory and Batch Management to track and trace pipe and fittings from the vendor all the way through the supply chain. Provide ability to track and record material characteristics along with other supporting documentation to personnel in supply chain, engineering, and in the field.

Project will be implemented in two phases. Phase 1 will stand up Inventory and Batch Management for PSEP and Phase 2 will rollout Phase 1 functionality to Major Projects and Pipeline Safety, as well as develop Batch Management Enhancements, Interfaces and Historical Data Loads

Physical Description:

Inventory Management.
Store and Track Material Characteristics.
Remnant Consumption.
Document Management System.
Material Approval for Use.
Advance Shipping Notice Interface.

Project Justification:

Significant reduction in safety liability by ensuring all pipe and fittings and other materials are adequately documented and traceable. Will provide higher level view of materials in the field for maintenance and capital improvement planning. Ensures compliance with tighter regulatory requirements and reporting.

Significantly reduce write offs from 154.009 account due to lack of material origin information. $12.9 M worth of material inventory is managed manually. Due to lack of traceability and visibility material is not being used, which results in material being kept on the books for five years and then written off. The dollar amount written off in 2014 was $1,034,198.73. Implementing this project will allow the company to avoid wirte offs due to lack of material traceability - material will be visible in enterprise inventory system along with associated tracebility information. Additional savings may be realized through consolidating individual job buys into volume purchases.
Supports roadmap for Enterprise Asset Management solution for pipeline and is scalable to include materials beyond high pressure pipeline components.

This solution will leverage existing software to streamline material procurement process, simplify our systems and optimize our asset base.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756R - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756R**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756R - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT
Workpaper Detail:	00756R.001 - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT
In-Service Date:	06/30/2017
Description:	

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	414	0	0
Non-Labor	3,946	0	0
NSE	0	0	0
Total	**4,360**	**0**	**0**
FTE	3.6	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756R - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT
Workpaper Detail:	00756R.001 - RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH MGMT

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　　Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN &
REPORTING

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	156	81	0
Non-Labor	Zero-Based	0	0	0	0	0	312	261	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**468**	**342**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.4	0.7	0.0

Business Purpose:

Project will develop company-wide time sequenced asset data Gas Operations Data Collection and Reporting environment using OSI PI technology, which will:
•Create the Distribution OSI PI environment - 2016
•Convert historic Auto Sol Enterprise Server (AES) data - 2016
•Create interfaces with AES, Storage and Transmission PI, Advance Meter Initiative (AMI) Aclara Head-End database to consolidate the pipeline operational pressure data - 2016
•Address pipeline operational pressure GO 112F reporting requirements – 2016
•Integrate OSISoft PI System with ESRI ArcGIS – 2016 - 2017
•Implement PI Mobile Data capability within Mobile@Work environment. – 2016 – 2017
•Develop Comprehensive Enterprise Asset Management (EAM) OSISoft PI Data Historian and Reporting Environment – 2017
•Address additional data historian and engineering situational awareness requirements for the Measurement, Regulating and Control Department – 2017

Physical Description:

The Regulatory Rule GO 112F mandates that the company establishes a comprehensive Pressure Monitoring Data Historian and Reporting Environment by Dec 31, 2016. The new system will serve as the critical tools for Gas Operation team to:
•Improve reliability of the mission critical operations systems.
•Improve Company's compliance with Federal and State regulatory requirements.
•Improve pipeline safety and customer satisfaction.
•Improve visibility of all existing storage facilities data, simplify linking to performance models by centralizing all data in a central PI Server resulting in easier, more maintainable integration with performance models.
•Display all critical measurements for pressure, quality, temperature available through the portal.
•Enhance system monitoring, situational awareness and visualization of Electronic Pressure Monitoring devices.
•Implementing the PI System has proven to improve crisis management capability, and expand collaboration among the organization.

Project Justification:

Improve reliability of the mission critical operations systems. Improve Company's compliance with Federal and State regulatory requirements.
•Improve pipeline safety and customer satisfaction.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756S**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING
Workpaper Detail:	00756S.001 - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING

In-Service Date: 12/31/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	156	0	0
Non-Labor	312	0	0
NSE	0	0	0
Total	**468**	**0**	**0**
FTE	1.4	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING
Workpaper Detail:	00756S.001 - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING
Workpaper Detail:	00756S.002 - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING
In-Service Date:	07/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	81	0
Non-Labor	0	261	0
NSE	0	0	0
Total	0	342	0
FTE	0.0	0.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756S - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING
Workpaper Detail:	00756S.002 - RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REPORTING

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756U - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756U - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	15	0	0
Non-Labor	Zero-Based	0	0	0	0	0	260	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	275	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Business Purpose:

The project will enhance the existing document and record management systems (PDMS, DocLib, WOT, etc.), improve the user experience, and provide necessary reporting capabilities for the Gas Operations organization. The enhanced systems will address known CPUC 958 and GO 112F reporting requirements in area of HP project close out compliance.
•The project will improve several existing business processes – Enterprise Geographic Information System (EGIS) maintenance by Gas Distribution Regions, High Pressure Pipeline Database (HPPD) maintenance, Landbase maintenance, EGIS Data Acceptance, Form 2112 management, Form 2120 management, IBM Cognos BI reporting, etc.
•Integrate several document libraries – Pipeline Document Management System (PDMS), Land and Right of Way (ROW) Document Management System, Storage Document Management System, Ops Qual legacy archives, Design Drawing Document Management System (DDB) with the MyProjects system.
•Enhance DocLib to meet new regulatory requirements – add new tables to capture additional information, etc. related to GO112F requirements.

This project will enable:
•Workflow templates to provide robust configuration tools allowing to add/connect new business department with minimal or no development.
•Data and Document Capture channels, Workflow, Indexing and Retrieve interfaces that are configured through the management UI by Business System analysts.
•Solution support and enhancements that is performed without extensive development
•Improved document and business record exchange between departments
•Reduced infrastructure cost due to centralization
•Improved compliance reporting in areas of HP project close out.
•Centralized data storage to insure access to the most current and finalized business process metadata.

Physical Description:

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: I. Gas System Integrity

Category-Sub: 3. Mandated

Workpaper Group: 00756U - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS

Add new/enhance existing Workflows in MyProjects.

Migrate existing MyProjects and WOT solutions to the new high-availability application and database infrastructure.

Consolidate both application into one comprehensive AppBase solution.

Consolidation of several document libraries – PDMS, Land and ROW, Storage, Ops Qual legacy archive, DDB in PDMS and integration of that consolidated DMS with MyProjects.

Enhanced GO112F compliance reporting using the additional business process metadata collected using the features herein. (e.g. reporting of various milestones – WIP Cloud, NOP, Bundle A and B, GIS posting, and calculating of corresponding KPIs).

Comply with CPUC General Order 112F. Must be in place by 1/1/2017. Create new compliance tables, maintenance screens, reports, and review notifications to comply with GO112F requirements.

Comply with California Public Utility Codes (CPUC) 950-978, which have been in effect since 2011. Create new tables, maintenance screens, reports, and review notifications to accommodate California Public Utility Code compliance requirements.

•Update to current system to better track organizational resource changes to ensure that the Document Library is providing reports to the correct users.

•Automate verification of organizational changes.

Project Justification:

•Upgraded application platform will minimize the risk of Business interruption
•Compliance to:
•CPUC General Order 58A, 112F and DOT CFR49, PHMSA Advisory Bulletin ADB-2012, CPUC 958

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: I. Gas System Integrity

Category-Sub: 3. Mandated

Workpaper Group: 00756U - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756U**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756U - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS
Workpaper Detail:	00756U.001 - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS
In-Service Date:	02/28/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	15	0	0
Non-Labor	260	0	0
NSE	0	0	0
Total	275	0	0
FTE	0.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756U - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS
Workpaper Detail:	00756U.001 - RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	**2018**	**2019**
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

**Beginning of Workpaper Group
00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED
SOL**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	242	115	0
Non-Labor	Zero-Based	0	0	0	0	0	1,962	726	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**2,204**	**841**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.1	1.0	0.0

Business Purpose:

Purpose of this proposal is to (1) analyze and document the "current state", (2) develop the Document and Records Management Technology Roadmap considering regulatory and Sempra Record Management requirements, (3) evaluate technology options including cloud-based solutions, (4) consolidate multiple systems into a consolidated solution to improve system integrity and ongoing maintenance, and (5) develop a Governance Framework to better operationalize records management processes. This proposal is a critical component of the Enterprise Asset Management (EAM) initiative - Document Management system is one of the main pillars of the EAM.

KPMG was engaged to develop the initial estimations used in this business case. For planning and budgeting purpose, the project cost and duration was estimated based on the OpenText Platform which was implemented by KPMG in other utilities, and it is currently being utilized by Gas Operations and Legal Team. The final selection of technology platform will be concluded during Requirement Phase. The project team will evaluate OpenText, Sharepoint, Documentum, etc.

Physical Description:

Establish Data and Record Management Solution.
Establish Governance Framework, Change Management and Training Requirements.
Establish single source of truth requirements.
Implementation Roadmap.
Record and Information Management Consolidated Solution.
Governance Framework, Change Management and training Process.

Project Justification:

•Streamline application support and operation.
•Reduce downstream integration cost with other EAM components.
•Offset annual maintenance costs by eliminating annual maintenance costs of current document management systems.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756V**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00756.0

Category: I. Gas System Integrity

Category-Sub: 3. Mandated

Workpaper Group: 00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

Workpaper Detail: 00756V.001 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

In-Service Date: 12/31/2017

Description:

RAMP

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	242	0	0
Non-Labor	1,222	0	0
NSE	0	0	0
Total	**1,464**	**0**	**0**
FTE	2.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.001 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.002 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
In-Service Date:	07/31/2018
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	115	0
Non-Labor	0	726	0
NSE	0	0	0
Total	0	841	0
FTE	0.0	1.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.002 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.003 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
In-Service Date:	04/30/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	700	0	0
NSE	0	0	0
Total	700	0	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.003 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC　　　　　　　　　　　Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.004 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
In-Service Date:	09/30/2017

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	40	0	0
NSE	0	0	0
Total	**40**	**0**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756V - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL
Workpaper Detail:	00756V.004 - RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SOL

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

  Risk: Gas

  Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Beginning of Workpaper Group
00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO
MGMT SOLUTION PH2

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH2

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	639	511
Non-Labor	Zero-Based	0	0	0	0	0	0	3,548	1,760
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**4,187**	**2,271**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	5.6	4.4

Business Purpose:

SoCalGas is faced with increasing requirements for Documents and Records management. In meeting these requirements, there is an in-flight project to implement records and document management system (RDMS) platform by Q2 2018. The main objective of the RDMS project is to set up a single standard platform with RDMS governance and capabilities. Business units will be able to utilize the platform to develop and customize their own sites to meet their records and documents needs.

Currently, Gas operations relies on multiple technology platforms and physical storage to achieve RDMS capabilities. New departmental sites will be created on the records and documents management platform, which will be the single source of truth that will eliminate multiple versions of electronic and physical documents. This also will enable the company to store, manage, and retrieve records and documents in an efficient manner.

Physical Description:

The project will develop and implement departmental records and document management sites. It will provide a single source of truth repository and extend the available RDMS capabilities below to support the business in managing the records and documents.
The RDMS Platform capabilities are:
- Documents Management
- Records Management
- Digital Asses Management
- Imaging
- Collaboration
- Auto Classification
- Search
The project will be implemented in three phases:
Phase I (target completion date Q1 2018) – Set up enterprise framework (taxonomy, governance, etc.)
Phase II (target completion date Q3 2018) – Impacted business unit TBD
Phase III (target completion date Q4 2018) – Impacted business unit TBD

Project Justification:

Streamline application support and operation.
Reduce downstream integration cost with other EAM components.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

Beginning of Workpaper Sub Details for
Workpaper Group 00756X

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH2
Workpaper Detail:	00756X.001 - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION I
In-Service Date:	12/31/2018

Description:

RAMP

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	639	0
Non-Labor	0	3,548	0
NSE	0	0	0
Total	**0**	**4,187**	**0**
FTE	0.0	5.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH2
Workpaper Detail:	00756X.001 - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	**2018**	**2019**
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Construction Start Date: In Service Date:12/31/2018

Work Type: Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH2
Workpaper Detail:	00756X.002 - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION I

In-Service Date:	10/31/2019
Description:	

RAMP

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	511
Non-Labor	0	0	1,760
NSE	0	0	0
Total	0	0	2,271
FTE	0.0	0.0	4.4

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	I. Gas System Integrity
Category-Sub:	3. Mandated
Workpaper Group:	00756X - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH2
Workpaper Detail:	00756X.002 - RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGMT SOLUTION PH

RAMP Item # 1

RAMP Chapter: SCG-8

Program Name: IT

Program Description: IT

Risk/Mitigation:

Risk: Gas

Mitigation: IT

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC   Forecast Method: Zero-Based

Construction Start Date: In Service Date:10/31/2019

Work Type: Mandated

Work Type Citation: O

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation:

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	J. HR
Workpaper:	00786D

Summary for Category: J. HR

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	300	291	436
Non-Labor	0	0	200	355
NSE	0	0	0	0
Total	**0**	**300**	**491**	**791**
FTE	0.0	2.6	2.5	3.8

00786D 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oak

Labor	0	300	291	436
Non-Labor	0	0	200	355
NSE	0	0	0	0
Total	**0**	**300**	**491**	**791**
FTE	0.0	2.6	2.5	3.8

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions
(Valley Oaks System)

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	J. HR
Category-Sub:	4. Business Optimization
Workpaper Group:	00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks System)

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	300	291	436
Non-Labor	Zero-Based	0	0	0	0	0	0	200	355
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**300**	**491**	**791**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.6	2.5	3.8

Business Purpose:

The iVOS Claims system software is now 15 years old (at the time of this writing). The product will be phased out in 3 to 5 years and vendor expects to replace it with Reveal (Ventiv). the new software, that is planned for release in late 2016 or 2017. It is uncertain if the current functionality will be maintained in the new software and if other additional modules will be required.

Physical Description:

Replace current iVOS software, add customizations to match current functionality (i.e. paperless office and disability calculations) and update hardware as needed. Evaluate the new software and explore products by other vendors. The selected software must have an open configuration to allow the client to install or develop its own screens business rules and/or customizations. Software will be required to support document imaging processing, dashboard reporting, workflow tasks and daily scheduled batch processing for reports, file transfers and data updates.

Project Justification:

Employee Care Services has unique processes to implement an integrated claims approach within a paperless environment. With the current system having an open configuration, Employee Care Services has been able to customize its screens, tables, work flows, warning mechanisms, interfaces, reports and securities. ECS anticipates improved efficiencies with improved technologies with more user flexibility

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	J. HR
Category-Sub:	4. Business Optimization
Workpaper Group:	00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks System

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00786D**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	J. HR
Category-Sub:	4. Business Optimization
Workpaper Group:	00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks System
Workpaper Detail:	00786D.001 - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks Sy
In-Service Date:	12/31/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	300	0	0
Non-Labor	0	0	0
NSE	0	0	0
Total	300	0	0
FTE	2.6	0.0	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00786.0

Category: J. HR

Category-Sub: 4. Business Optimization

Workpaper Group: 00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks System

Workpaper Detail: 00786D.002 - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks Sy

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	291	0
Non-Labor	0	150	0
NSE	0	0	0
Total	0	441	0
FTE	0.0	2.5	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	J. HR
Category-Sub:	4. Business Optimization
Workpaper Group:	00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks System
Workpaper Detail:	00786D.003 - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks Sy
In-Service Date:	04/30/2018
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	0
Non-Labor	0	50	0
NSE	0	0	0
Total	0	50	0
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00786.0
Category:	J. HR
Category-Sub:	4. Business Optimization
Workpaper Group:	00786D - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks System
Workpaper Detail:	00786D.004 - 19117 FoF - Employee Care Services iVOS Claims System Ventiv eSolutions (Valley Oaks Sy
In-Service Date:	03/31/2019
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	436
Non-Labor	0	0	355
NSE	0	0	0
Total	0	0	791
FTE	0.0	0.0	3.8

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	K. Supply Management
Workpaper:	VARIOUS

Summary for Category: K. Supply Management

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	708	457	0
Non-Labor	0	1,949	2,090	0
NSE	0	0	0	0
Total	**0**	**2,657**	**2,547**	**0**
FTE	0.0	6.1	4.0	0.0

00756W 84299 Supply Mgmt Analytics & Reporting

Labor	0	510	0	0
Non-Labor	0	730	0	0
NSE	0	0	0	0
Total	**0**	**1,240**	**0**	**0**
FTE	0.0	4.4	0.0	0.0

00776AJ 19129 FoF - Integrated Supplier Portal

Labor	0	0	457	0
Non-Labor	0	0	2,090	0
NSE	0	0	0	0
Total	**0**	**0**	**2,547**	**0**
FTE	0.0	0.0	4.0	0.0

00776X 84271 FoF - SUPPLY MANAGEMENT TRANSACTION ENABLEMENT

Labor	0	198	0	0
Non-Labor	0	1,219	0	0
NSE	0	0	0	0
Total	**0**	**1,417**	**0**	**0**
FTE	0.0	1.7	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00756W - 84299 Supply Mgmt Analytics & Reporting

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	K. Supply Management
Category-Sub:	3. Mandated
Workpaper Group:	00756W - 84299 Supply Mgmt Analytics & Reporting

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	510	0	0
Non-Labor	Zero-Based	0	0	0	0	0	730	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**1,240**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0

Business Purpose:

The purpose of the project is to update and modernize the current Reporting and Analytics solution for the Supply Management and Logistics departments with an in-house solution that can align with the company's Enterprise Analytics Strategy.

•Project would modernize and transform the current data and foundation as to support the Supply Management and Logistics analytics reporting requirements, today and in the future.
•This will not be a simple lift and shift from the Cognos application but a complete redesign/restructure of the data foundation and data model.
•Solution would support improvement and maturity of both Supply Management and Logistics Business processes.
•Solution would be reusable, robust, and scalable.

Physical Description:

Supply Management Analytics Reporting Environment (SoCal Gas and SDG&E).
Logistics Analytics Reporting Environment (SoCal Gas and SDG&E).
Supply Management Report Content.
Logistics Report Content.

Project Justification:

See Purpose

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	K. Supply Management
Category-Sub:	3. Mandated
Workpaper Group:	00756W - 84299 Supply Mgmt Analytics & Reporting

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00756W**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00756.0
Category:	K. Supply Management
Category-Sub:	3. Mandated
Workpaper Group:	00756W - 84299 Supply Mgmt Analytics & Reporting
Workpaper Detail:	00756W.001 - 84299 Supply Mgmt Analytics & Reporting
In-Service Date:	06/30/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	510	0	0
Non-Labor	730	0	0
NSE	0	0	0
Total	1,240	0	0
FTE	4.4	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776AJ - 19129 FoF - Integrated Supplier Portal**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	K. Supply Management
Category-Sub:	4. Business Optimization
Workpaper Group:	00776AJ - 19129 FoF - Integrated Supplier Portal

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	0	457	0
Non-Labor	Zero-Based	0	0	0	0	0	0	2,090	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**2,547**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0

Business Purpose:

This project proposes to coordinate the efforts across the supply chain, accounting and treasury departments to maximize Sempra's working capital and maximize payment discounts. A key component of this project will be the use of a Taulia solution to consolidate vendor interactions through a single point of entry for vendors to engage Sempra to self-manage their Company information, interact with Company on multiple supplier performance and relationship management attributes, manage their payment inquiry requests, accelerate payments, and submit electronic invoicing. Part of the implementation will include aggressive outreach campaigns with our supply base to train them on the use of the Taulia solution, in addition to coordinated efforts with AP and Supply Management to enforce the use of the program. Information entered into the Taulia portal will be integrated back to Sempra's SAP system.

This project also includes implementation of a supply chain finance and bank card program offered by a yet to be selected financial institution. This program increases the use of corporate cards resulting in increased rebates to Sempra and extended payment opportunities. The program also includes financing of vendor payments in an accelerated timeframe while extending actual payments made by Sempra. This results in positive increases in working capital to both Sempra and its vendors. ?
?
The proposed solution will include two portals which interface with SAP, one from Taulia and one from the yet to be selected financial institution.?

Physical Description:

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	K. Supply Management
Category-Sub:	4. Business Optimization
Workpaper Group:	00776AJ - 19129 FoF - Integrated Supplier Portal

Vendor portal provided by Taulia. Additional functionality from Levante is a strong possibility and costs for Levante were included in project estimates.
Dynamic discounting through Taulia portal.
Supply chain financing through a financial institution yet to be identified. Additional portal will be implemented for supply chain finance program.

Outbound broad communications to suppliers.?
Generally, vendors accepting dynamic discounting will not be offered supply chain finance/cards.
Integration between Taulia and SAP.?
Planned decommissioning of various portals/web pages.?

Project Justification:

Fuel the Future Savings

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: K. Supply Management

Category-Sub: 4. Business Optimization

Workpaper Group: 00776AJ - 19129 FoF - Integrated Supplier Portal

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AJ**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: K. Supply Management

Category-Sub: 4. Business Optimization

Workpaper Group: 00776AJ - 19129 FoF - Integrated Supplier Portal

Workpaper Detail: 00776AJ.001 - 19129 FoF - Integrated Supplier Portal

In-Service Date: 10/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	457	0
Non-Labor	0	690	0
NSE	0	0	0
Total	0	1,147	0
FTE	0.0	4.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	K. Supply Management
Category-Sub:	4. Business Optimization
Workpaper Group:	00776AJ - 19129 FoF - Integrated Supplier Portal
Workpaper Detail:	00776AJ.002 - 19129 FoF - Integrated Supplier Portal

In-Service Date: 05/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	0	1,400	0
NSE	0	0	0
Total	**0**	**1,400**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776X - 84271 FoF - SUPPLY MANAGEMENT TRANSACTION ENABLEMENT

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	K. Supply Management
Category-Sub:	4. Business Optimization
Workpaper Group:	00776X - 84271 FoF - SUPPLY MANAGEMENT TRANSACTION ENABLEMENT

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	198	0	0
Non-Labor	Zero-Based	0	0	0	0	0	1,219	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,417	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0

Business Purpose:

This project is the first phase of the Transaction Enablement Program with the purpose of replacing only the SupplyNet and the FBCard applications with one single solution that is easy-to-use, can provide up-to-date eProcurement functionality, and can be accessible from any location by means of a personal computers and/or mobile device. Functionality must include real-time transaction processing and monitoring (e.g. Apple Pay/Google Wallet) as to help bolster controls and management of department's purchases and spend. The project will offer the opportunity to broaden the company's transactional supplier base, including smaller niche suppliers who relies on newer technology as to compete with larger suppliers, and to have a majority of the departments within SoCal Gas, SDG&E, and Corporate use the new solution for purchasing all company's supplies and assets.

Physical Description:

eProcurement
Company's Credit Cards (FBCard) management and reconciliation
Supplier's Catalog management
eProcurement and FBCard Reporting and Notifications
Integration with SAP for accounting validation, PO setup/changes, and Invoicing/Payment instructions

Project Justification:

•Eliminate the risk of system failures and down time.
•Eliminate the support of outdated code and infrastructure.
•Increases participation opportunities for DBE suppliers.
•Ability to provide a value-add control-monitored transactional platform for the Utilities, Corporate, and Major Projects as the company moves forward with more project-based initiatives

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	K. Supply Management
Category-Sub:	4. Business Optimization
Workpaper Group:	00776X - 84271 FoF - SUPPLY MANAGEMENT TRANSACTION ENABLEMENT

Forecast Methodology:

Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

Non-Labor - Zero-Based

Project is currently in-flight. Based on actual timeline of the project to complete.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776X**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	K. Supply Management
Category-Sub:	4. Business Optimization
Workpaper Group:	00776X - 84271 FoF - SUPPLY MANAGEMENT TRANSACTION ENABLEMENT
Workpaper Detail:	00776X.001 - 84271 FoF - SUPPLY MANAGEMENT TRANSACTION ENABLEMENT
In-Service Date:	04/30/2017
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	198	0	0
Non-Labor	1,219	0	0
NSE	0	0	0
Total	1,417	0	0
FTE	1.7	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	M. AM Infrastructure
Workpaper:	VARIOUS

Summary for Category: M. AM Infrastructure

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	0	626	683
Non-Labor	0	0	1,142	4,132
NSE	0	0	0	0
Total	**0**	**0**	**1,768**	**4,815**
FTE	0.0	0.0	5.4	5.9

00776AA 19120 DCU LTE Upgrade Program

Labor	0	0	85	357
Non-Labor	0	0	966	3,908
NSE	0	0	0	0
Total	**0**	**0**	**1,051**	**4,265**
FTE	0.0	0.0	0.7	3.1

00776AB 19121 DCU Software IS Upgrade

Labor	0	0	72	92
Non-Labor	0	0	176	224
NSE	0	0	0	0
Total	**0**	**0**	**248**	**316**
FTE	0.0	0.0	0.6	0.8

00776Z 19119 DCU Compliance Inspection Work Mgmt

Labor	0	0	469	234
Non-Labor	0	0	0	0
NSE	0	0	0	0
Total	**0**	**0**	**469**	**234**
FTE	0.0	0.0	4.1	2.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776AA - 19120 DCU LTE Upgrade Program**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776AA - 19120 DCU LTE Upgrade Program

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	85	357
Non-Labor	Zero-Based	0	0	0	0	0	0	966	3,908
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	1,051	4,265
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.7	3.1

Business Purpose:

The SoCalGas Advanced Meter Network includes approximately 4,600 Data Collector Units, each one of which contains a
cellular communications card provided by Verizon Wireless or AT&T Wireless that is repsonsible for relaying meter read
and other data from the DCUs back to the Advanced Meter Head End System.
Existing cellular communications cards utilize 2G or 3G cellular technology and must be upgraded to the newer LTE
technology. Verizon has announced that they will no longer support our older equipment by the end of the decade (2020).
AT&T has not announced a sunset date for their equipment, but it is expected to be announced for the early- to mid- 2020s.

Physical Description:

The scope of the project is to remove and replace 4,600 DCU cellular comms cards at 100% of the DCU locations across
the SoCalGas Service Territory. Verizon sites will be prioritized due to the earlier sunset date for existing technology.

Project Justification:

In addition to mandatory LTE communications upgrade, this project will result in a brief 'inside the box' inspection of each
DCU (from a bucket truck) allowing for any operational or safety concerns about each DCU to be noted for follow-up action.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: M. AM Infrastructure

Category-Sub: 5. AMI

Workpaper Group: 00776AA - 19120 DCU LTE Upgrade Program

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AA**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776AA - 19120 DCU LTE Upgrade Program
Workpaper Detail:	00776AA.001 - 19120 DCU LTE Upgrade Program

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	85	0
Non-Labor	0	966	0
NSE	0	0	0
Total	**0**	**1,051**	**0**
FTE	0.0	0.7	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776AA - 19120 DCU LTE Upgrade Program
Workpaper Detail:	00776AA.002 - 19120 DCU LTE Upgrade Program

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	0	357
Non-Labor	0	0	3,908
NSE	0	0	0
Total	0	0	4,265
FTE	0.0	0.0	3.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00776AB - 19121 DCU Software IS Upgrade

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776AB - 19121 DCU Software IS Upgrade

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	72	92
Non-Labor	Zero-Based	0	0	0	0	0	0	176	224
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**248**	**316**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.8

Business Purpose:

The SoCalGas Advanced Meter Network includes approximately 4,600 Aclara Data Collector Units (DCUs), each one of which is connected via cellular communications gateways to an Aclara Head End software system which collects metering and sensor data generated by the ~6M Advanced Meter MTUs and diagnostic/operational information from the 4,600 DCUs. The DCU - Software Information Security (IS) Upgrade Project will provide for enhanced IS functionaity covering communications between the Aclara DCUs and the Head End software system located at the Sempra IT Data Center.

Physical Description:

The Project will consist of two separate HE Software & DCU Firmware upgrades to provide initial enhancment of network protocol authentication and cryptographic capabilities in two stages, both leveraging the existing DCU hardware.

Project Justification:

The project will enhance the existing IS capabilities of the Advanced Meter hardware and IT systems, helping them to adapt and better defend against increasingly more sophisticated cybersecurity threats.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: M. AM Infrastructure

Category-Sub: 5. AMI

Workpaper Group: 00776AB - 19121 DCU Software IS Upgrade

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AB**

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: M. AM Infrastructure

Category-Sub: 5. AMI

Workpaper Group: 00776AB - 19121 DCU Software IS Upgrade

Workpaper Detail: 00776AB.001 - 19121 DCU Software IS Upgrade

In-Service Date: 12/31/2018

Description:

See workpaper description

	Forecast In 2016 $(000)		
Years	**2017**	**2018**	**2019**
Labor	0	72	0
Non-Labor	0	176	0
NSE	0	0	0
Total	**0**	**248**	**0**
FTE	0.0	0.6	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776AB - 19121 DCU Software IS Upgrade
Workpaper Detail:	00776AB.002 - 19121 DCU Software IS Upgrade

In-Service Date: 11/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	92
Non-Labor	0	0	224
NSE	0	0	0
Total	**0**	**0**	**316**
FTE	0.0	0.0	0.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776Z - 19119 DCU Compliance Inspection Work Mgmt**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776Z - 19119 DCU Compliance Inspection Work Mgmt

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	469	234
Non-Labor	Zero-Based	0	0	0	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	469	234
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	4.1	2.0

Business Purpose:

Managing the Advanced Meter Data Collector Units (DCUs) and Poles*; compliance inspections, installations, replacements, incidents and inventory by transitioning the DCU maintenance program into SAP PM leverages existing Sempra technology and processes.
*METHANE SENSORS may be attached to SoCal Gas Poles.

Physical Description:

• DCU Installation - consists of the following phases: Site Selection & Survey, GIS Approvals, Permitting, Construction Specifications, Commissioning, As-Built Drawings and Acceptance
• Pole Installation – consists of the following phases: Site Selection & Survey, GIS Approvals, Permitting, Construction Specifications, Commissioning, As-Built Drawings and Acceptance
• DCU Inspection – Inspection, Follow up Repairs
• Pole Inspection - Inspection, Follow up Repairs
• DCU asset management – Supply Management, RMA (return to manufacturer), Claims Support
• Pole asset management – Supply Management, RMA (return to manufacturer), Claims Support
• DCU Incident management – track incidents specific to asset
• Pole Incident management - track incidents specific to asset
• DCU Replacement – Track a new installation for replacements
• Pole Replacement - Track a new installation for replacements
• DCU Relocations – Track a new installation for relocations
• Pole Relocations – Track a new installation for relocations
• DCU Reporting – data must be available to automate reports
• Pole Reporting - data must be available to automate reports
• DCU component management – track specific components within the DCU, Replacements, Incidents, Maintenance
• Site Alerts – safety concerns, corporate security incidents
• Data Conversion
• Data exchanges from vendor(s) & ACLARA

Project Justification:

The DCU Inspection and Maintenance Program is managed through a third party vendor application selected by our AM Network vendor partner at the beginning of the Advanced Meter Project in order to meet project schedule constraints. SCG needs to implement this project in order to take the opportunity to leverage existing data modeling for reporting.

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776Z - 19119 DCU Compliance Inspection Work Mgmt

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776Z**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	M. AM Infrastructure
Category-Sub:	5. AMI
Workpaper Group:	00776Z - 19119 DCU Compliance Inspection Work Mgmt
Workpaper Detail:	00776Z.001 - 19119 DCU Compliance Inspection Work Mgmt

In-Service Date: 12/31/2018

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	469	0
Non-Labor	0	0	0
NSE	0	0	0
Total	**0**	**469**	**0**
FTE	0.0	4.1	0.0

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY

Witness: Christopher R. Olmsted

Budget Code: 00776.0

Category: M. AM Infrastructure

Category-Sub: 5. AMI

Workpaper Group: 00776Z - 19119 DCU Compliance Inspection Work Mgmt

Workpaper Detail: 00776Z.002 - 19119 DCU Compliance Inspection Work Mgmt

In-Service Date: 04/30/2019

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	234
Non-Labor	0	0	0
NSE	0	0	0
Total	**0**	**0**	**234**
FTE	0.0	0.0	2.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Category:	N. Corporate
Workpaper:	00776AI

Summary for Category: N. Corporate

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	127	74	0
Non-Labor	0	2,277	353	0
NSE	0	0	0	0
Total	**0**	**2,404**	**427**	**0**
FTE	0.0	1.1	0.6	0.0

00776AI 19126 IAM NextGen

Labor	0	127	74	0
Non-Labor	0	2,277	353	0
NSE	0	0	0	0
Total	**0**	**2,404**	**427**	**0**
FTE	0.0	1.1	0.6	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00776AI - 19126 IAM NextGen**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	N. Corporate
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AI - 19126 IAM NextGen

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	127	74	0
Non-Labor	Zero-Based	0	0	0	0	0	2,277	353	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	2,404	427	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.1	0.6	0.0

Business Purpose:

The NextGen IAM project will include evaluation and implementation of a new application solution with a Software as a Service (SaaS) or cloud based IAM system preferred over on-prem solutions. This new IAM system, which will be implemented alongside of redesigned business processes, will be connected to authoritative data sources just as the current system is.

Physical Description:

The project will address process capabilities along with the following:
A central repository of user access (employees and non-employees)
The means to determine whether a user's access is appropriate for the current job responsibility
A central means to gain, store, track and audit access approvals for primary and secondary/privileged accounts
A streamlined, easy-to-use management experience to provision a new or transferred employee
A requisite set of reporting and dashboard capabilities to adequately meet business auditing and compliance needs
A proper IAM framework to address IT strategies and the cloud roadmap
Additionally, the project will identify, develop, and deploy a limited persona based (i.e. employee vs. contractor) access management model that will enable supervisors to effectively manage their direct reports.

Project Justification:

Reduce access related productivity impacts: Automating the provisioning/de-provisioning of commonly requested system/physical access will reduce the time that employees and non-employees are unable to perform work due to access related issues.
- Increase operational efficiency: Automation and process streamlining will reduce manual tasks and time required to requests and process access related tickets.
- Reduce security and audit risks: Standardizing, automating and/or centralizing the attestation and the de-provisioning processes for system access will eliminate unauthorized access and increase our ability to audit/report on system access.

Note: Totals may include rounding differences.

Area: INFORMATION TECHNOLOGY
Witness: Christopher R. Olmsted
Budget Code: 00776.0
Category: N. Corporate
Category-Sub: 1. Technical Obsolescence
Workpaper Group: 00776AI - 19126 IAM NextGen

Forecast Methodology:

Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

Non-Labor - Zero-Based

Based on Project Manager and Subject Matter Expert estimates.

NSE - Zero-Based

N/A

**Beginning of Workpaper Sub Details for
Workpaper Group 00776AI**

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	N. Corporate
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AI - 19126 IAM NextGen
Workpaper Detail:	00776AI.001 - 19126 IAM NextGen

In-Service Date: 12/31/2017

Description:

See workpaper description

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	127	0	0
Non-Labor	2,277	0	0
NSE	0	0	0
Total	**2,404**	**0**	**0**
FTE	1.1	0.0	0.0

Note: Totals may include rounding differences.

Area:	INFORMATION TECHNOLOGY
Witness:	Christopher R. Olmsted
Budget Code:	00776.0
Category:	N. Corporate
Category-Sub:	1. Technical Obsolescence
Workpaper Group:	00776AI - 19126 IAM NextGen
Workpaper Detail:	00776AI.002 - 19126 IAM NextGen
In-Service Date:	11/30/2018
Description:	

See workpaper description

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	0	74	0
Non-Labor	0	353	0
NSE	0	0	0
Total	0	427	0
FTE	0.0	0.6	0.0

Note: Totals may include rounding differences.