

Application of SAN DIEGO GAS & ELECTRIC)
COMPANY for authority to update its gas and)
electric revenue requirement and base rates)
effective January 1, 2019 (U 902-M))

Application No. 17-10-___

Exhibit No.: (SDG&E-18-WP)

WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF JERRY D. STEWART
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

OCTOBER 2017



2019 General Rate Case - APP
INDEX OF WORKPAPERS

Exhibit SDG&E-18-WP - CS - OFFICE OPERATIONS

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Overall Summary For Exhibit No. SDG&E-18-WP

Area:	CS - OFFICE OPERATIONS
Witness:	Jerry D. Stewart

Description	In 2016 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Non-Shared Services	36,818	39,000	40,282	44,319
Shared Services	0	0	0	0
Total	36,818	39,000	40,282	44,319

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2019 GRC - APP
 Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart

Summary of Non-Shared Services Workpapers:

Description	In 2016 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
A. Customer Service Office Operations	36,818	39,000	40,282	44,319
Total	36,818	39,000	40,282	44,319

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Workpaper: VARIOUS

Summary for Category: A. Customer Service Office Operations

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	27,987	28,407	28,733	30,232
Non-Labor	4,670	6,547	7,596	10,230
NSE	4,160	4,045	3,952	3,856
Total	36,817	38,999	40,281	44,318
FTE	397.2	398.5	399.2	416.4

Workpapers belonging to this Category:

100001.000 Advanced Metering Ops

Labor	7,451	7,622	7,579	8,301
Non-Labor	706	747	882	1,733
NSE	0	0	0	0
Total	8,157	8,369	8,461	10,034
FTE	83.7	85.9	84.7	94.7

100002.000 Billing

Labor	3,580	3,575	3,766	3,799
Non-Labor	683	2,523	3,421	4,224
NSE	0	0	0	0
Total	4,263	6,098	7,187	8,023
FTE	49.2	49.1	51.1	50.6

100003.000 Credit & Collections

Labor	2,083	1,992	2,010	2,234
Non-Labor	544	682	794	839
NSE	0	0	0	0
Total	2,627	2,674	2,804	3,073
FTE	30.3	29.6	30.0	32.3

100004.000 Remittance Processing

Labor	0	0	0	0
Non-Labor	785	772	758	745
NSE	0	0	0	0
Total	785	772	758	745
FTE	0.0	0.0	0.0	0.0

100004.001 Postage

Labor	0	0	0	0
Non-Labor	0	0	0	0
NSE	4,160	4,045	3,952	3,856
Total	4,160	4,045	3,952	3,856
FTE	0.0	0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Workpaper: VARIOUS

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
100005.000 Branch Offices				
Labor	1,460	1,504	1,414	1,293
Non-Labor	519	474	552	916
NSE	0	0	0	0
Total	1,979	1,978	1,966	2,209
FTE	23.7	23.7	21.7	16.7
100006.000 CCC Operations				
Labor	8,896	9,088	9,112	9,804
Non-Labor	41	-14	-242	292
NSE	0	0	0	0
Total	8,937	9,074	8,870	10,096
FTE	158.8	157.1	156.9	168.3
100007.000 CCC Support				
Labor	1,512	1,479	1,417	1,366
Non-Labor	1,278	1,229	1,263	1,313
NSE	0	0	0	0
Total	2,790	2,708	2,680	2,679
FTE	20.1	19.7	18.6	17.6
100008.000 Customer Operations Support & Projects				
Labor	3,005	3,147	3,435	3,435
Non-Labor	114	134	168	168
NSE	0	0	0	0
Total	3,119	3,281	3,603	3,603
FTE	31.4	33.4	36.2	36.2

Note: Totals may include rounding differences.

Beginning of Workpaper
100001.000 - Advanced Metering Ops

San Diego Gas & Electric Company
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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 1. Advanced Metering Operations
 Workpaper: 100001.000 - Advanced Metering Ops

Activity Description:

Advanced Metering Operations (AMO) supports the delivery of customer services on premises, responds to customer inquiries, resolves customer problems, and supports providing accurate and timely bills for all of SDG&E's 2.26 million meters, covering all of San Diego County and South Orange County. There are six distinct areas in the organization including Electric Metering Operations (EMO), Smart Meter Data Operations (SMDO), Quality Assurance & Training, Smart Meter Technical Support (SMTS), Electric Meter Engineering (EME), and Network Operations and Engineering (NOE).

Forecast Explanations:

Labor - Base YR Rec

A base year forecast method was used because the business has changed significantly due to the transition of all commercial customers to time-of-use rates. Starting in late 2015 small commercial customers were defaulted to time-of-use event-based rates and then in early 2016, medium commercial customers defaulted to time-of-use event based rates. As a result, AMO business processes related to interval data validation, editing, and field work take significantly more time to complete. Therefore, the base year provides a reasonable starting point for future expenditures.

Non-Labor - Base YR Rec

See above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		7,824	8,091	8,023	7,464	7,451	7,622	7,579	8,301	
Non-Labor		857	614	545	635	706	747	882	1,733	
NSE		0	0	0	0	0	0	0	0	
Total		8,682	8,705	8,568	8,099	8,157	8,369	8,461	10,034	
FTE		91.0	95.0	93.9	85.8	83.6	85.9	84.7	94.7	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 1. Advanced Metering Operations
Workpaper: 100001.000 - Advanced Metering Ops

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	7,451	7,451	7,451	171	128	850	7,622	7,579	8,301
Non-Labor	Base YR Rec	706	706	706	41	176	1,027	747	882	1,733
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		8,157	8,157	8,157	212	304	1,877	8,369	8,461	10,034
FTE	Base YR Rec	83.7	83.7	83.7	2.2	1.0	11.0	85.9	84.7	94.7

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	90	0	0	90	1.0	1-Sided Adj	CSCHRAMM20170309132256110	
Explanation:		Work Order Volume Increase: Estimated increase of 4,000 work orders over 2016 base year. These orders would be worked at an average annual order of 1,000 per FTE at an annual salary of \$90.3K per year. Approximately 3,000 of the increase in orders will be worked by the Electric Meter Tester Apprentices (EMTA's). See AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cells C-17 and C-21)							
2017	Other	224	0	0	224	2.9	1-Sided Adj	CSCHRAMM20170309132843383	
Explanation:		Electric Meter Tester Apprentice (EMTA): Full year impact of 5 EMTA's who started in August 2016 (5 EMTA's x 7/12 year = 2.9 FTE x \$71k annual = \$205K) and associated EMTA's step-up labor increase every 6 months during 3-year training period of \$19K. Of the forecasted work order volume increase of 4,000 the EMTA's will work 3,000 orders. See AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cell C-18) (\$205K + \$19K = \$224K)							
2017	RAMP Incremental	46	0	0	46	0.6	1-Sided Adj	CSCHRAMM20170511172612397	
Explanation:		RAMP: RAMP Incremental; RAMP SDG&E Chapter 17 Workforce Planning Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions. Mitigation Program: 3 Yr Apprentice Electric Meter Tester Program Full year impact of 1 Apprentice Electric Meter Tester (AMT) of \$42K. AMT started in August 2016 (\$42K = 1 apprentice x 7/12 year = .6 FTE at \$71K annual) and associated Apprentice Meter Tester step-up labor increase of \$4K (\$42K + 4K = \$46K) 2016 embedded costs \$30K							
2017	Other	-114	0	0	-114	-1.3	1-Sided Adj	CSCHRAMM20170309132940773	

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 1. Advanced Metering Operations
 Workpaper: 100001.000 - Advanced Metering Ops

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
Explanation:		VREP and Full Year Labor Impact: Full year labor impact of 2016 vacancies and maternity leave of \$80k and .4 FTE offset by VREP (retirements) Business Advisor (\$96K and .8 FTE); Project Mgr. II (\$99K and .9 FTE). The Business Advisor and Project Mgr. II positions to be absorbed by current staffing. (\$80K - \$96K - \$99K) = (\$114K) (.4 - .8 - .9) = (1.3) FTE						
2017	Other	0	41	0	41	0.0	1-Sided Adj	CSCHRAMM20170309133104457
Explanation:		Non-labor Adjustment: 2016 full year impact of contracted resources needed due to delays in Enhanced Network Analytics implementation of \$41K.						
2017	FOF-Ongoing	-75	0	0	-75	-1.0	1-Sided Adj	CSCHRAMM20170309133200833
Explanation:		Business Optimization (FOF): Labor benefits such as developing automated solutions to detect and fix smart meter issues, leveraging Advanced Metering Infrastructure (AMI) technology to reduce need for manual meter reads, and digitizing intake process and work orders for contract crews.						
2017 Total		171	41	0	212	2.2		
2018	Other	90	0	0	90	1.0	1-Sided Adj	CSCHRAMM20170309134909860
Explanation:		Work Order Volume Increase: Estimated increase of 4,500 work orders over 2016 base year. These orders would be worked at an average annual order of 1,000 per FTE at an annual salary of \$90.3K per year. Approximately 3,500 of the work orders will be worked by the EMTA's. See AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cells D-17 and D-21)						
2018	Other	268	0	0	268	2.9	1-Sided Adj	CSCHRAMM20170309135035333
Explanation:		Electric Meter Tester Apprentice (EMTA): Full year impact of 5 EMTA's who started in August 2016 (5 EMTA's x 7/12 year = 2.9 FTE's x \$71K annual = \$205K) and associated EMTA's step-up labor increase every 6 months during 3-year training period of \$63K. Of the forecasted work order volume increase of 4,500 the EMTA's will work 3,500 orders. See AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cells D-18 and D-19) (\$205K + \$63K = \$268K)						
2018	RAMP Incremental	55	0	0	55	0.6	1-Sided Adj	CSCHRAMM20170512104342520

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 1. Advanced Metering Operations
 Workpaper: 100001.000 - Advanced Metering Ops

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
Explanation: RAMP: RAMP Incremental; RAMP SDG&E Chapter 17 Workforce Planning Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions. Mitigation Program: 3 Yr Apprentice Electric Meter Tester Program Full year impact of 1 Apprentice Electric Meter Tester (AMT) of \$42K. AMT started in August 2016 (\$42K = 1 apprentice x 7/12 year = .6 FTE at \$71K annual) and associated AMT step-up labor increase of \$13K. (\$42K + \$13K = \$55K) 2016 embedded costs \$30K								
2018	RAMP Incremental	0	10	0	10	0.0	1-Sided Adj	CSCHRAMM20170512124555140
Explanation: RAMP: RAMP Incremental; RAMP SDG&E Chapter 17 Workforce Planning Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions. Mitigation Program: Engineer (Prin. & Sr.) Electric Metering; knowledge transfer, job shadowing and hands on experience, and metering school (proposed) Proposed Electric Meter School \$10K non-labor 2016 embedded costs \$8K								
2018	Other	-114	0	0	-114	-1.3	1-Sided Adj	CSCHRAMM20170309135208860
Explanation: VREP and Full Year Labor Impact: Full year labor impact of 2016 vacancies and maternity leave of \$80k and .4 FTE offset by VREP (retirements) Business Advisor (\$96K and .8 FTE); Project Mgr. II (\$99K and .9 FTE). The Business Advisor and Project Mgr. II positions to be absorbed by current staffing. (\$80K - \$96K - \$99K) = (\$114K) (.4 - .8 - .9) = (1.3) FTE								
2018	FOF-Ongoing	-171	0	0	-171	-2.2	1-Sided Adj	CSCHRAMM20170309135609870
Explanation: Business Optimization (FOF): Labor benefits such as developing automated solutions to detect and fix smart meter issues, leveraging AMI technology to reduce need for manual meter reads and digitizing intake process and work orders for contract crews.								
2018	Other	0	41	0	41	0.0	1-Sided Adj	CSCHRAMM20170309135358173
Explanation: Non-labor Adjustment: 2016 full year impact of contracted resources needed due to delays in Enhanced Network Analytics implementation of \$41K.								
2018	Other	0	125	0	125	0.0	1-Sided Adj	CSCHRAMM20170309135529277
Explanation: Capital Project Impacts - Enhanced Network Analytics - Third party hosting fees for network management system. Reference Capital Project ID # T-19036.								

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 1. Advanced Metering Operations
 Workpaper: 100001.000 - Advanced Metering Ops

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>
2018 Total		128	176	0	304	1.0		

2019 Other		90	0	0	90	1.0	1-Sided Adj	CSCHRAMM20170309140705233
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Explanation: Work Order Volume Increase: Estimated increase of 5,300 work orders over 2016 base year. These orders would be worked at an average annual order of 1,000 per FTE at an annual salary of \$90.3K per year. Approximately 4,300 of the increase in orders will be worked by the EMTA's. See AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cells E-17 and E-21)

2019 Other		304	0	0	304	2.9	1-Sided Adj	CSCHRAMM20170309140806690
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Explanation: Electric Meter Tester Apprentice (EMTA): Full year impact of 5 EMTA's who started in August 2016 (5 EMTA's x 7/12 year = 2.9 FTE x \$71K annual = \$205K) and associated EMTA's step-up labor increase every 6 months during 3-year training period of \$98K. Of the forecasted work order volume increase of 5,300 the EMTA's will work 4,300 orders. See AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cells E-18 and E-19)
(\$205K + \$99K = \$304K)

2019 RAMP Incremental		61	0	0	61	0.6	1-Sided Adj	CSCHRAMM20170512105829427
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Explanation: RAMP: RAMP Incremental; RAMP SDG&E Chapter 17 Workforce Planning
 Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions.
 Mitigation Program: 3 Yr Apprentice Electric Meter Tester Program
 Full year impact of 1 Apprentice Electric Meter Tester (AMT) of \$42K. AMT started in August 2016 (\$42K = 1 apprentice x 7/12 year = .6 FTE at \$71K annual) and associated AMT step-up labor increase of \$19K.
 (\$42K + \$19K = \$61K)
 2016 embedded costs \$30K

2019 RAMP Incremental		0	10	0	10	0.0	1-Sided Adj	CSCHRAMM20170512124617973
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Explanation: RAMP: RAMP Incremental; RAMP SDG&E Chapter 17 Workforce Planning
 Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions.
 Mitigation Program: Engineer (Prin. & Sr.) Electric Metering; knowledge transfer, job shadowing and hands on experience, and metering school (proposed)
 Proposed Electric Meter School \$10K non-labor
 2016 embedded costs \$8K (training)

2019 Other		-114	0	0	-114	-1.3	1-Sided Adj	CSCHRAMM20170309140845380
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Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 1. Advanced Metering Operations
 Workpaper: 100001.000 - Advanced Metering Ops

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj_Type	RefID
Explanation:		VREP and Full Year Labor Impact: Full year labor impact of 2016 vacancies and maternity leave of \$80K and .4 FTE offset by VREP (retirements) for Business Advisor (\$96K and .8 FTE); Project Mgr. II (\$99K and .9 FTE). The Business Advisor and Project Mgr. II positions to be absorbed by current staffing.						
		(\$80k - \$96k - \$99k) = (\$114k)						
		(.4 - .8 - .9) = (1.3) FTE						
		(\$80k - \$96k - \$99k) = (\$114k)						
		(.4 - .8 - .9) = (1.3) FTE						
2019 Other		680	993	0	1,673	10.0	1-Sided Adj	CSCHRAMM20170627172432997
Explanation:		Residential TOU Mass Default: Labor for 10 Single-Phase Meter Testers (SPT) and non-Labor for 10 back office support contractor analysts and tools for SPT's. See Advanced Metering Ops 100001.000 Supplemental Workpaper 1 - TOU Mass Default Forecast Calculations for additional detail. (Reference cell B-7 for labor and cell I-23 for non-labor)						
		Calculation:						
		Labor: \$68k x 10 = \$680k						
		Non-labor:						
		Contracted non-labor: \$92.3k x 10 = \$923k						
		Tools: \$7k x 10 = \$70k						
2019 Other		0	-101	0	-101	0.0	1-Sided Adj	CSCHRAMM20170309140913973
Explanation:		Non-labor Adjustment: Reduction in non-labor of (\$101K) for contractor resource that is no longer needed due to implementation of Enhanced Network Analytics.						
2019 Other		0	125	0	125	0.0	1-Sided Adj	CSCHRAMM20170309140939090
Explanation:		Capital Project Impacts - Enhanced Network Analytics - Third party hosting fees for network management system. Reference Capital Project ID # T-19036.						
2019 FOF-Ongoing		-171	0	0	-171	-2.2	1-Sided Adj	CSCHRAMM20170309141011120
Explanation:		Business Optimization (FOF): Labor benefits such as developing automated solutions to detect and fix smart meter issues, leveraging AMI technology to reduce need for manual meter reads, and digitizing intake process and work orders for contract crews.						
2019 Total		850	1,027	0	1,877	11.0		

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 1. Advanced Metering Operations
Workpaper: 100001.000 - Advanced Metering Ops

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	6,450	6,645	6,608	6,378	6,411
Non-Labor	860	612	548	642	712
NSE	0	0	0	0	0
Total	7,310	7,257	7,156	7,020	7,123
FTE	80.4	82.2	79.6	72.8	71.0
Adjustments (Nominal \$) **					
Labor	-195	-115	0	-62	-20
Non-Labor	-25	-6	-4	-7	-6
NSE	0	0	0	0	0
Total	-220	-121	-4	-70	-26
FTE	-2.1	-1.4	0.0	0.2	-0.2
Recorded-Adjusted (Nominal \$)					
Labor	6,255	6,530	6,608	6,316	6,391
Non-Labor	836	606	544	634	706
NSE	0	0	0	0	0
Total	7,090	7,136	7,152	6,950	7,097
FTE	78.3	80.8	79.6	73.0	70.8
Vacation & Sick (Nominal \$)					
Labor	906	1,036	1,055	975	1,060
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	906	1,036	1,055	975	1,060
FTE	12.6	14.2	14.3	12.8	12.9
Escalation to 2016\$					
Labor	664	525	360	173	0
Non-Labor	21	8	1	1	0
NSE	0	0	0	0	0
Total	685	533	361	174	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	7,824	8,091	8,023	7,464	7,451
Non-Labor	857	614	545	635	706
NSE	0	0	0	0	0
Total	8,682	8,705	8,568	8,099	8,157
FTE	90.9	95.0	93.9	85.8	83.7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 1. Advanced Metering Operations
 Workpaper: 100001.000 - Advanced Metering Ops

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	-195	-115	0	-62	-20
Non-Labor	-25	-6	-4	-7	-6
NSE	0	0	0	0	0
Total	-220	-121	-4	-70	-26
FTE	-2.1	-1.4	0.0	0.2	-0.2

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-82	0	0	-1.3	CCTR Transf To 2100-3753.000	CSCHRAMM20161004145624107
Explanation: Transfer labor and FTE associated with Meter Access positions from 2100-3547 in work paper group 100001 Advanced Metering Operations to cost center 2100-3753 in work paper group 1FC004 CSF Office Support to align costs where activity/function resides.							
2012	Other	-113	0	0	-0.8	CCTR Transf To 2100-0040.000	CSCHRAMM20161004150957830
Explanation: Transfer labor and FTE for Project Manager position from cost center 2100-3780 in work paper group 100001 Advanced Metering Operations to cost center 2100-0040 in work paper group 11N001 Residential Services to align costs where function resides.							
2012	Other	0	-19	0	0.0	1-Sided Adj	CSCHRAMM20161004161159660
Explanation: Remove one-time costs associated with contract Labor.							
2012	Other	0	-5	0	0.0	CCTR Transf To 2100-3576.000	CSCHRAMM20161004163050040
Explanation: Transfer office services cost from 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2012 Total		-195	-25	0	-2.1		
2013	Other	-54	0	0	-0.8	CCTR Transf To 2100-3753.000	CSCHRAMM20161004145939057
Explanation: Transfer labor and FTE associated with Meter Access positions from cost center 2100-3547 in work paper group 100001 Advanced Metering Operations to cost center 2100-3753 in work group 1FC004.000 CSF Office Support to align historical costs where activity/function resides.							
2013	Other	-30	0	0	0.0	1-Sided Adj	CSCHRAMM20161004154138957
Explanation: Remove one-time costs associated with severance payment.							

Note: Totals may include rounding differences.

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 Category: A. Customer Service Office Operations
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 Workpaper: 100001.000 - Advanced Metering Ops

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2013	Other	0	-6	0	0.0	CCTR Transf To 2100-3576.000	CSCHRAMM20161004163235597
Explanation: Transfer office services cost from cost center 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align costs where activity/function resides.							
2013	Other	-31	0	0	-0.6	CCTR Transf To 2100-0129.000	CSCHRAMM20170206124648153
Explanation: Transfer labor and FTE associated with Relief District Crew Dispatcher from cost center 2100-0648 in work paper group 100001 Advanced Metering Operations to cost center 2100-0129 in work paper group 1FC003.000 Customer Service Field to align costs where activity/function resides.							
2013 Total		-115	-6	0	-1.4		
2014	Other	0	-4	0	0.0	CCTR Transf To 2100-3576.000	CSCHRAMM20161004163354897
Explanation: Transfer office services non-labor from cost center 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2014 Total		0	-4	0	0.0		
2015	Other	-83	0	0	0.0	1-Sided Adj	CSCHRAMM20161004154312897
Explanation: Remove one-time costs associated with severance payment.							
2015	Other	0	-7	0	0.0	CCTR Transf To 2100-3576.000	CSCHRAMM20161004163517240
Explanation: Transfer office services non-labor from cost center 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in workpaper group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2015	Other	20	0	0	0.2	1-Sided Adj	CSCHRAMM20161021165512533
Explanation: One-sided adjustment to include 9 days of missing union labor in 2015 that should have been accrued in cctr 2100-0035 in 2015, this amount was accrued at a high level - SDG&E corporate cost center in 2015.							
2015 Total		-62	-7	0	0.2		
2016	Other	-20	0	0	-0.2	1-Sided Adj	CSCHRAMM20170206135143280
Explanation: One-sided adjustment to include 9 days of missing union labor accrual reversal that posted in Jan. 2016 (accrued at a high level in Dec. 2015). This accrual reversal should have been posted to cctr 2100-0035 in 2016. This adjustment is the corresponding reversal of the adjustment to 2015 for the missing 9 days of union labor accrual that should have posted in 2015 to cctr 2100-0035 (Dec. 2015).							

Note: Totals may include rounding differences.

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<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2016	Other	0	-6	0	0.0	CCTR Transf To 2100-3576.000	CSCRAMM20170206135546753
Explanation:		Transfer office services non-labor costs from 2100-3574 in work group Advanced Metering Operations 100001 to cost center 2100-3576 in work group 100008 Customer Operations Support & Projects to align costs where activity resides.					
2016 Total		-20	-6	0	-0.2		

Note: Totals may include rounding differences.

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RAMP Item # 1

Ref ID: CSCHRAMM20170309133238087

RAMP Chapter: SDG&E-3

Program Name: Behavior Based Safety (BBS) and Customer Service Field (CSF) Observations Outside of BBS

Program Description: A proactive approach to safety and health management focusing on principles that recognize at-risk as a frequent cause of both minor and serious injuries. The purpose is to reduce the occurrence of at-risk behaviors by modifying individuals actions and/or behaviors through observation, feedback, and positive interventions aimed at developing safe work habits, and Field observations performed by Supervisors.

Risk/Mitigation:

Risk: Employee, Contractor, and Public Safety

Mitigation: Field observations of employee and contractors activities and safety behaviors.

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	892	892	892
High	1,070	1,070	1,070

Funding Source: CPUC-GRC

Forecast Method: Other

Work Type: Non-Mandated

Work Type Citation:

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 37

Explanation: 2016 BBS Spend \$31K; Field Obs \$6K Ramp ranges included are for BBS and CSF Observations outside of BBS. The areas covered by these two programs are AMO and Customer Service Field (CSF).

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RAMP Item # 2

Ref ID: CSCHRAMM20170511172612397

RAMP Chapter: SDG&E-17

Program Name: Electric Meter Tester/Meter Test Electrician

Program Description: 3 year Apprentice Electric Meter Tester program

Risk/Mitigation:

Risk: Workforce Planning

Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions.

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	348	361	477
High	739	756	900

Funding Source: CPUC-GRC

Forecast Method: Average

Work Type: Non-Mandated

Work Type Citation: n/a

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 30

Explanation: 2016 embedded costs of \$30K (\$30K = 1 apprentice x 5/12 year = .4 FTE at \$71K annual) 8 EMTs eligible to retire in 2019 - forecast 13% will retire. $8 \times 13\% = 1$

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RAMP Item # 3

Ref ID: CSCHRAMM20170512115543637

RAMP Chapter: SDG&E-17

Program Name: Engineer (Prin & Sr)

Program Description: Metering School

Risk/Mitigation:

Risk: Workforce Planning

Mitigation: Knowledge transfer tools and processes are available; Workforce planning tools and templates available to identify labor force gaps and develop staffing and employee development solutions.

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 8

Explanation: 130 hours for training Engineer (Prin & Sr) Calculation: \$62 avg hrly rate x 130 hrs = \$8K Ramp ranges shown in Mitigation program: 3 yr Apprentice Meter Tester.

Supplemental Workpapers for Workpaper 100001.000

AMO 100001.000 Supplemental Workpaper 1 - Work Order Volume forecast Calculations

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Electric Meter Tester (EMT) / Meter Test Electrician/Workload Plan					Single Phase Meter Technician (SPT) / Workload Plan					Combined Totals			
2		2016 YE Actual	2017 YE Plan	2018 YE Plan	2019 YE Plan		2016 YE Actual	2017 YE Plan	2018 YE Plan	2019 YE Plan		combined orders 2016	combined orders 2017	combined orders 2018	combined orders 2019
3	Description														
4	Change - Electric Meter changes for various reasons	2,560	4,640	4,698	4,813		509	530	530	615		3,069	5,170	5,228	5,428
5	Compliance Test - Sample Testing Electric Meters to verify accuracy and to stay compliant with regulations	4,435	4,400	4,500	4,600		29	100	150	200		4,464	4,500	4,650	4,800
6	Miscellaneous Electric Work - miscellaneous work performed on the electric meter, i.e.; Troubleshooting, Apprentice work and Dual Socket sets	5,484	6,820	6,868	6,918		2,270	2,247	2,247	2,247		7,754	9,067	9,115	9,165
7	Primary Assist - includes maintenance and compliance for Primary me	723	681	681	681		-	-	-	-		723	681	681	681
8	Read Verify - Reads due to non-communicating / known mitigation issues and verify reads for billing purposes	4,150	4,010	4,200	4,500		11,211	12,000	12,000	12,000		15,361	16,010	16,200	16,500
9	Testing - Customer requested tests for accuracy concerns and installation tests on CT meters	1,552	1,550	1,600	1,700		-	-	-	-		1,552	1,550	1,600	1,700
10	Turn On & Shut Off - Turning on and shutting off electric meters	42	32	32	32		-	-	-	-		42	32	32	32
11															
12	Total	18,946	22,133	22,579	23,244		14,019	14,877	14,927	15,062		32,965	37,010	37,506	38,306
13															
14															
15		2016 Actual Orders	2017 Forecasted Orders	2018 Forecasted Orders	2019 Forecasted Orders										
16	TOTAL work orders	32,965	37,010	37,506	38,306										
17	Change compared to BY 2016	-	4,045	4,541	5,341										
18	Orders worked by existing Electric Meter Tester Apprentice (EMTA's) ¹	-	(3,000)	(3,000)	(3,000)										
19	Efficiencies by EMTA's as gain field experience ²	-	-	(500)	(1,300)										
20	Incremental SPT/EMT's forecasted ³	-	1.0	1.0	1.0										
21	Incremental SPT/EMT labor forecasted ⁴	-	\$ 90,300	\$ 90,300	\$ 90,300										
22															
23	Assumptions:														
24	¹ Approximately 3 FTE's / 3,000 orders will be assigned to existing EMTA's beginning in 2017, were in classroom training in 2016.														
25	² Cumulative year-over-year slight increase will be absorbed by existing EMTA's as become more experienced in the field														
26	³ Each SPT/EMT is able to work 1,064 orders/year														
27	⁴ Each SPT/EMT labor rate is \$90.3K/year														

AMO 100001.000 Supplemental Workpaper 2 - Residential TOU Mass Default forecast Calculations

	A	B	C	D	E	F	G	H	I
1	LABOR:								
	<i>Assumptions :</i>								
	----> 1 Single Phase Meter Tech (SPT) is able to field and collect interval data from approximately 19 meters/orders per day.								
	----> SPT Union Position (Job Dode 03903, ADP Grade 376, \$32.56/hour per 9/1/16 union pay-scale)								
2									
3	*Additional monthly orders due to TOU Mass Default	4,035							
4	Number of orders worked per day per SPT	19							
5	Workdays per month	21							
6	Incremental FTE's required for TOU Mass Default	10							
7	Incremental Labor expenses for TOU Mass Default	679,853							
8									
9	*Additional monthly orders due to TOU Mass Default	Number of Meters Requiring Interval Data	**Exception Rate (0.5% in 2016)						
10	As of 12/31/16	190,354	960						
11	Res TOU Mass Default	800,000	4,035						
12									
13									
14	**Exception Rate	2015	2016						
15	Total Meters Requiring Interval Data	68,370	190,354						
16	Meter Exceptions	504	960						
17	Exception Rate	0.74%	0.50%						
18									
19	NON-LABOR:								
	<i>Assumptions :</i>								
	----> 1 Analyst is able to work 50 exceptions/per day (current state as of 12/31/16)								
	----> Starting 2019 with the implementation the Enhanced Network Analytics (ENA) capital project an analyst will be able to work 95.5 exceptions/day and the exception rate will decrease by .01%.								
	----> Incremental TOU Mass Default resources will be filled as contract labor @ \$92.3K/resource								
20	----> Tools are \$7K/SPT								
21		Number of Interval Billed Meters	Total Daily Exceptions	Exception Rate	# Exceptions Worked Per employee	Total # Analysts	Contractor Analyst Resource Expense	Tools for SPT resources	Total Incremental Expense
22	As of 12/31/16	190,354	250	0.13%	50	5			
23	Incremental Analysts required for TOU Mass Default	800,000	955	0.12%	95.5	10	\$ 922,685	\$ 70,000	\$ 992,685

Beginning of Workpaper
100002.000 - Billing

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 Category: A. Customer Service Office Operations
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Activity Description:

Customer billing operations expenses cover the cost of calculating customer bills, maintaining accurate customer account information, issuing special bills that require manual calculations, resolving billing exceptions, addressing customer bill inquiries, and ensuring bills are prepared in accordance with applicable tariffs, statutes, customer contracts and other agreements.

Forecast Explanations:

Labor - Base YR Rec

A Base Year Forecast Method is used because the business has changed significantly due to Small and Medium Business Time-of-Use (TOU) Default and Net Energy Metering 2.0. Furthermore, 2016 non-labor costs are more reflective of the costs needed to support increasingly complex billing activities. Therefore, the base year provides a reasonable starting point for future expenditures.

Non-Labor - Base YR Rec

See explanation above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		3,822	3,990	3,561	3,278	3,580	3,575	3,766	3,799	
Non-Labor		300	295	365	609	683	2,523	3,421	4,224	
NSE		0	0	0	0	0	0	0	0	
Total		4,121	4,285	3,926	3,887	4,263	6,098	7,187	8,023	
FTE		57.5	58.2	51.6	46.8	49.2	49.1	51.1	50.6	

Note: Totals may include rounding differences.

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Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	3,580	3,580	3,580	-5	186	219	3,575	3,766	3,799
Non-Labor	Base YR Rec	683	683	683	1,840	2,738	3,541	2,523	3,421	4,224
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		4,263	4,263	4,263	1,835	2,924	3,760	6,098	7,187	8,023
FTE	Base YR Rec	49.2	49.2	49.2	-0.1	1.9	1.4	49.1	51.1	50.6

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	0	1,729	0	1,729	0.0	1-Sided Adj	CAMIRKHI20170309142231307	
Explanation:		Growth in Interval Billed Accounts: As more customers transition to time-of-use rates customer billing has become more complex due to interval data and has resulted in delayed bills. Contracted resources are being used to augment the gap in resources needed for timely bill processing. See Billing 100002.000 Supplemental Workpaper 1 - Growth in Interval Data Forecast for additional detail (Reference cell E-16).							
2017	Other	0	111	0	111	0.0	1-Sided Adj	CSCHRAMM20170627231120120	
Explanation:		Complex Billing Data Analytics: Contractor Resource to assist with data analytics for interval billing. See Billing 100002.000 Supplemental Workpaper 2 - Complex Analytics Forecast for additional detail (Reference cell E-12).							
2017	FOF-Ongoing	-5	0	0	-5	-0.1	1-Sided Adj	CAMIRKHI20170309045928757	
Explanation:		Business Optimization (FOF): Labor benefits such as digitizing intake process and work orders for contract crews.							
2017 Total		-5	1,840	0	1,835	-0.1			
2018	Other	0	1,366	0	1,366	0.0	1-Sided Adj	CAMIRKHI20170309050328097	
Explanation:		Growth in Interval Billed Accounts: As more customers transition to time-of-use rates customer billing has become more complex due to interval data. Contracted resources are being used to augment the gap in resources needed for timely bill processing. See Billing 100002.000 Supplemental Workpaper 1 - Growth in Interval Data Forecast for additional detail. (Reference cell F-16)							
2018	Other	0	1,366	0	1,366	0.0	1-Sided Adj	CSCHRAMM20170627233344823	

Note: Totals may include rounding differences.

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Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
Explanation:		Residential TOU Default Pilot: Contractor resources required to support Residential TOU Default Pilot. The Billing and Customer Operations Support costs were requested in SDG&E Advice letter filing E-4848 and denied in the Draft Resolution for SDG&E's TOU Default Pilot (Draft Resolution E-4848). See Billing 100002.000 Supplemental Workpaper 3 - TOU Mass Default Forecast for additional detail. (Reference cell F-14)						
2018	Other	102	3	0	105	1.0	1-Sided Adj	CSCHRAMM20170627233309230
Explanation:		Complex Billing Data Analytics: Resource to assist with data analytics for interval billing. See Billing 100002.000 Supplemental Workpaper 2 - Complex Analytics Forecast for additional detail. (Reference cell F-13 for labor and cell F-14 for non-labor).						
2018	Other	89	3	0	92	1.0	1-Sided Adj	CAMIRKHI20170309050139497
Explanation:		Impact of Regulatory Decisions: 1 FTE Business System Analyst (MRR: SA5) \$89K, to support rate changes, test bill, project and production support, and \$3K in associated non-labor. See Billing 100002.000 Supplemental Workpaper 4 - Impact of Regulatory Decisions Forecast for additional detail. (Reference cell F-14 for labor and cell G-14 for non-labor)						
2018	FOF-Ongoing	-5	0	0	-5	-0.1	1-Sided Adj	CAMIRKHI20170309050029877
Explanation:		Business Optimization (FOF): Labor benefits such as digitizing intake process and work orders for contract crews.						
2018 Total		186	2,738	0	2,924	1.9		
2019	Other	0	1,277	0	1,277	0.0	1-Sided Adj	CAMIRKHI20170309050840450
Explanation:		Growth in Interval Billed Accounts: As more customers transition to time-of-use rates customer billing has become more complex due to interval data. Contracted resources are being used to augment the gap in resources needed for timely bill processing. See Billing 100002.000 Supplemental Workpaper 1 - Growth in Interval Data Forecast for additional detail. (Reference cell G-16)						
2019	Other	0	2,255	0	2,255	0.0	1-Sided Adj	CSCHRAMM20170627234157860
Explanation:		Residential TOU Mass Default: Contracted Billing resources required to support Residential TOU Mass Default. See Billing 100002.000 Supplemental Workpaper 3 - Residential TOU Mass Default Forecast for additional detail. (Reference cell G-14)						
2019	Other	204	6	0	210	2.0	1-Sided Adj	CSCHRAMM20170511112545443
Explanation:		Complex Billing Data Analytics: Resources to assist with data analytics for interval billing. See Billing 100002.000 Supplemental Workpaper 2 - Complex Analytics Forecast for additional detail. (Reference cell G-13 for labor and cell G-14 for non-labor)						
Calculation:		Labor: 2 x \$102K = \$204K Non-Labor: 2 x \$3K = \$6K						

Note: Totals may include rounding differences.

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<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>	
2019	Other	89	3	0	92	1.0	1-Sided Adj	CAMIRKHI20170309050753990	
Explanation:		Impact of Regulatory Decisions: 1 FTE Business System Analyst (MRR: SA5) \$89K to support rate changes, test bill, project and production support, and \$3K in associated non-labor. See Billing 100002.000 Supplemental Workpaper 4 - Impact of Regulatory Decisions Forecast for additional detail. (Reference cell F-15 for labor and cell G-15 for non-labor)							
2019	FOF-Ongoing	-74	0	0	-74	-1.6	1-Sided Adj	CAMIRKHI20170309050644567	
Explanation:		Business Optimization (FOF): Labor benefits such as implementing Case Management System for complaint resolution and digitizing intake process and work orders for contract crews							
2019 Total		219	3,541	0	3,760	1.4			

Note: Totals may include rounding differences.

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Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	3,189	2,796	2,512	2,821	3,078
Non-Labor	292	289	359	941	786
NSE	0	0	0	0	0
Total	3,481	3,085	2,871	3,761	3,864
FTE	51.1	42.2	37.0	40.3	41.7
Adjustments (Nominal \$) **					
Labor	-134	425	421	-47	-7
Non-Labor	0	2	5	-332	-103
NSE	0	0	0	0	0
Total	-134	426	426	-379	-110
FTE	-1.6	7.3	6.7	-0.4	-0.1
Recorded-Adjusted (Nominal \$)					
Labor	3,055	3,221	2,933	2,774	3,071
Non-Labor	292	291	365	608	683
NSE	0	0	0	0	0
Total	3,347	3,512	3,298	3,382	3,754
FTE	49.5	49.5	43.7	39.9	41.6
Vacation & Sick (Nominal \$)					
Labor	443	511	468	428	509
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	443	511	468	428	509
FTE	8.0	8.7	7.8	7.0	7.6
Escalation to 2016\$					
Labor	324	259	160	76	0
Non-Labor	7	4	0	1	0
NSE	0	0	0	0	0
Total	332	263	160	77	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	3,822	3,990	3,561	3,278	3,580
Non-Labor	300	295	365	609	683
NSE	0	0	0	0	0
Total	4,121	4,285	3,926	3,887	4,263
FTE	57.5	58.2	51.5	46.9	49.2

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 2. Billing
 Workpaper: 100002.000 - Billing

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	-134	425	421	-47	-7
Non-Labor	0	2	5	-332	-103
NSE	0	0	0	0	0
Total	-134	426	426	-379	-110
FTE	-1.6	7.3	6.7	-0.4	-0.1

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-53	0	0	-0.8	CCTR Transf To 2100-0244.000	CSCHRAMM20161016142927080
Explanation: Transfer labor and FTE associated with Billing Analyst role that moved between organizations in late 2012 from cost center 2100-0008 in work paper group 100002 Billing to cost center 2100-0244 in work paper group 1EP003 Mid and Back Office to align historical costs with current organization structure.							
2012	Other	-81	0	0	-0.8	CCTR Transf To 2100-0712.000	CSCHRAMM20161016144140917
Explanation: Transfer labor and FTE associated with Business Planner role from cost center 2100-3480 in work paper group 100002 Billing to cost center 2100-0712 in work paper group 1AG001 Controller - PIng & Reg Accts. to align costs where Business Planning functions reside.							
2012 Total		-134	0	0	-1.6		
2013	Other	-58	0	0	-0.6	CCTR Transf To 2100-0712.000	CSCHRAMM20161016144225793
Explanation: Transfer labor and FTE associated with Business Planner role from cost center 2100-3480 in work paper group 100002 Billing to cost center 2100-0712 in work paper group 1AG001 Controller - PIng & Reg Accts. to align costs where Business Planning functions reside.							
2013	Other	444	2	0	7.6	CCTR Transf From 2100-3477.000	CSCHRAMM20161018170329940
Explanation: Transfer labor, FTE, and non-labor costs associated with Customer Account Verification (CAV) Billing functions from cost center 2100-3477 in work paper group 100008 Customer Operations Support & Projects to cost center 2100-0009 in work paper group 100002 Billing to align costs where activity/function resides.							
2013	Other	39	0	0	0.3	CCTR Transf From 2100-0040.000	CSCHRAMM20161011153819513
Explanation: Transfer Billing Project Manager labor and FTE from cost center 2100-0040 in work paper group 11N001 Residential Services to cost center 2100-3480 in work paper group 100002 Billing to align costs where function/activity resides.							
2013 Total		425	2	0	7.3		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 2. Billing
 Workpaper: 100002.000 - Billing

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2014	Other	421	5	0	6.7	CCTR Transf From 2100-3477.000	CSCHRAMM20161018170501967
Explanation: Transfer labor, FTE, and non-labor costs associated with Customer Account Verification (CAV) Billing functions from cost center 2100-3477 in work paper group100008 Customer Operations Support & Projects to cost center 2100-0009 in work paper group100002 Billing to align costs where activity/function resides.							
2014 Total		421	5	0	6.7		
2015	Other	-47	0	0	-0.4	CCTR Transf To 2100-3576.000	CSCHRAMM20161016144407983
Explanation: Transfer Project Mgr labor and FTE from cost center 2100-3480 in work paper group 100002 Billing to cost center 2100-3576 in work paper group 100008 Customer Operations Support and Projects to align costs where function resides.							
2015	Other	0	-340	0	0.0	1-Sided Adj	CSCHRAMM20161016144515530
Explanation: Remove one-time vendor costs related to CIS Strategy Development							
2015	Other	0	8	0	0.0	CCTR Transf From 2100-3477.000	CSCHRAMM20161018170806407
Explanation: Transfer non-labor costs related to Customer Account Verification (CAV) Billing functions from cost center 2100-3477 in work paper group100008 Customer Operations Support & Projects to cost center 2100-0009 in work paper group 00002 Billing to align costs where activity/function resides.							
2015 Total		-47	-332	0	-0.4		
2016	Other	0	-103	0	0.0	CCTR Transf To 2100-0058.000	CSCHRAMM20170223133653817
Explanation: Transfer non-labor costs associated with Rate Reform Education (personalized video bills) from cost center 2100-3480 in work paper group 100002 Billing to cost center 2100-0058 in work paper group 11N003 Marketing, Research & Analytics, to align function/activity where it resides.							
2016	Other	-7	0	0	-0.1	CCTR Transf To 2100-3576.000	CSCHRAMM20170223134435707
Explanation: Transfer labor and FTE associated with project manager role from cost center 2100-3480 in work paper group100002 Billing to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align function/activity where it resides.							
2016 Total		-7	-103	0	-0.1		

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper 100002.000

Billing 100002.000 Supplemental Workpaper 1 - Growth in Interval Data Forecast

	A	B	C	D	E	F	G
1	Year End Totals	2014	2015	2016	2017	2018	2019
2	Interval Data Billed Accounts	29,250	33,076	177,985	177,985	177,985	177,985
3	Percent Growth ^{1,2}		13%	438%	0%	0%	0%
4	Average Number of New Interval Data Billed Accounts Per Month ¹		319	12,076	0	0	0
5							
6	Required Interval Billing Tasks ³						
7	- Supervision			5.0	6.5	6.5	6.5
8	- New Setups			8.0	8.0	8.0	8.0
9	- Monthly Exception Handling and Maintenance			24.0	34.0	34.0	34.0
10	Total Resource Requirement			37.0	48.5	48.5	48.5
11							
12	Proposed TY2019 GRC Incremental Increase						
13	(Required to support continued growth rate)			Resources	11.5	11.5	11.5
14							
15	Forecast Adjustment Assumptions						
16	Contract Labor			Non-Labor	\$1,728,438	\$1,365,988	\$1,277,300
17							
18							
19	<u>Assumptions:</u>						
20	¹ 2016 increases compared to historical years are related to the SMB (Small and Medium Business) time-of-use default, NEM 2.0, and virtual net metering.						
21	² Does not include growth from RES-TOU Pilot and Mass Default in compliance with D.15-07-001. See Billing 100002.000 Supplemental Workpaper 3 - Residential TOU Mass Default Forecast						
22	³ In 2016 there was growth in TOU billed customers due to the SMB rollout. Without the necessary additional staffing it caused the backlog to grow. This backlog continued to grow so resources are forecasted being brought in beginning with 2017 to eliminate the delayed billing backlog.						

Billing 10002.000 Supplemental Workpaper 2 - Complex Analytics Forecast

	A	B	C	D	E	F	G
1	Year End Totals	2014	2015	2016	2017	2018	2019
2	Total Work Items Generated ¹	293,384	306,038	1,202,106	1,202,106	1,322,317	1,652,896
3							
4	Required Interval Billing Tasks						
5	- Data Analytics				1.0	1.0	2.0
6	Total Resource Requirement				1.0	1.0	2.0
7							
8	Proposed TY2019 GRC Incremental Increase						
9	(Required to support continued growth rate)			Resources	1.0	1.0	2.0
10							
11	Forecast Adjustment Assumptions						
12	Contract Labor			Non-Labor	\$111,258		
13	Billing Advisor (AD2) = Labor \$102,000			Labor		\$102,000	\$204,000
14	Billing Advisor (AD2) = Non-Labor \$3,000			Non-Labor		\$3,000	\$6,000
15				Total	\$111,258	\$105,000	\$210,000
16							
17	<u>Assumptions:</u>						
18	¹ Total work items will increase 10% in 2018 and 25% in 2019						

Billing 100002.000 Supplemental Workpaper 3 - Residential TOU Mass Default Forecast

	A	B	C	D	E	F	G
1	Year End Totals	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
2	Residential TOU Pilot/Default Customers					100,000	900,000
3							
4	Required Interval Billing Tasks						
5	- Supervision					1.5	2.5
6	- New Setups					0.0	2.0
7	- Monthly Exception Handling and Maintenance					10.0	11.0
8	Total Resource Requirement					11.5	15.5
9							
10	Proposed TY2019 GRC Incremental Increase						
11	(Required to support RES-TOU Pilot and Mass Default)			Resources		11.5	15.5
12							
13	Forecast Adjustment Assumptions ¹						
14	Contract Labor			Non-Labor		\$1,365,988	\$2,255,150
15							
16							
17	¹ Incremental contract labor to support Residential TOU Pilot and Mass Default as per D.15-07-001						

Billing 10002.000 Supplemental Workpaper 4 - Impact of Regulatory Decisions Forecast

	A	B	C	D	E	F	G
1	Year End Totals	2014	2015	2016	2017	2018	2019
2	# of Rate Entries Per Year ^{1,2}	38,600	30,100	38,600	38,600	42,600	42,600
3	Percent Growth		-22%	28%	0%	10%	0%
4							
5	Required Rate Entry Team Tasks						
6	- Rate Entry & Rate Entry Audit ³		2.0	2.0	2.0	3.0	3.0
7	- Test Bill / Project Support / Production Support		1.0	1.0	1.0	1.0	1.0
8	Total Resource Requirement		3.0	3.0	3.0	4.0	4.0
9							
10	Proposed TY2016 GRC Incremental Increase						
11	(Required to support additional regulatory projects)		Resources		0.0	1.0	1.0
12							
13	Forecast Adjustment Assumptions						
14	Business Systems Analyst (SA5) = Labor \$88,650			Labor	\$0	\$88,650	\$88,650
15	Business Systems Analyst (SA5) = Non-Labor \$3,000			Non-Labor	\$0	\$3,000	\$3,000
16				Total	\$0	\$91,650	\$91,650
17							
18	<u>Assumptions:</u>						
19	¹ 2016 increases compared to historical years are related to Residential Rate Reform, NEM 2.0, Production Support for Aging Billing System, and New Rate Options not supported by Test Bill.						
20	² 2018 and 2019 increase due to GRC Phase 2 implementation.						
21	³ In addition to support for rate entries, incremental FTE would be reasonable for test bill calculations, project support, and production support as indicated in the testimony.						

Beginning of Workpaper
100003.000 - Credit & Collections

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 3. Credit & Collections
 Workpaper: 100003.000 - Credit & Collections

Activity Description:

The Credit and Collections expenses cover the costs to collect final bill payment from customers, perform skip tracing (research to locate a customer after a service termination and the final bill reaches delinquent status), investigate energy theft, bankruptcy processing, activities supporting remittance processing, and developing policy and procedures to reduce bad debt exposure.

Forecast Explanations:

Labor - Base YR Rec

A base year forecast method was used for TY 2019 for Credit and Collections because the last recorded year accurately reflects the expense level associated with current departmental activity. Efficiencies have been gained in both Customer Payment and Collections Services as manual data entry processes have been automated (i.e. the Un-postable Payment Process, Escheatment Process, turn on investigation process, and NEM Strategies). Therefore, the base year provides a reasonable starting point for future expenditures.

Non-Labor - Base YR Rec

See above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	
Years										
Labor	2,216	2,351	2,269	2,002	2,083	1,992	2,010	2,234		
Non-Labor	451	487	438	443	544	682	794	839		
NSE	0	0	0	0	0	0	0	0		
Total	2,667	2,837	2,707	2,445	2,627	2,674	2,804	3,073		
FTE	35.1	36.4	33.9	29.8	30.3	29.6	30.0	32.3		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 3. Credit & Collections
Workpaper: 100003.000 - Credit & Collections

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	2,083	2,083	2,083	-91	-73	151	1,992	2,010	2,234
Non-Labor	Base YR Rec	544	544	544	138	250	295	682	794	839
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		2,627	2,627	2,627	47	177	446	2,674	2,804	3,073
FTE	Base YR Rec	30.3	30.3	30.3	-0.7	-0.3	2.0	29.6	30.0	32.3

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	0	64	0	64	0.0	1-Sided Adj	CAMIRKHI20170309051233227	
Explanation:		Collection Agency Commission: \$64K non-labor increase in commission to collection agencies.							
2017	Other	15	5	0	20	0.2	1-Sided Adj	CAMIRKHI20170309051305133	
Explanation:		Customer Growth: Labor increase of \$15K and non-labor increase of \$5K due to increased credit activities resulting from customer growth. See Credit & Collections 100003.000 Supplemental Workpaper 1 - Customer Growth Calculation for additional detail. (Reference cell C-5 for labor and cell C-9 for non-labor)							
2017	Other	-212	0	0	-212	-2.8	1-Sided Adj	CAMIRKHI20170309051335883	
Explanation:		VREP: Retirements for Account Management Supervisor (\$66.5K and .9 FTE), Customer Payments Supervisor (\$72.5K and .9 FTE), and Customer Payments Specialist (\$73K and .9 FTE)							
2017	FOF-Ongoing	106	69	0	175	1.9	1-Sided Adj	CAMIRKHI20170309051054100	
Explanation:		Business Optimization: FOF labor and non-labor benefits and costs such as reducing energy theft, Propensity to Pay, and digitizing intake process and work orders for contract crews.							
2017 Total		-91	138	0	47	-0.7			
2018	Other	0	104	0	104	0.0	1-Sided Adj	CAMIRKHI20170309051522870	
Explanation:		Collection Agency Commission: \$104K non-labor increase in commission to collection agencies.							
2018	Other	33	13	0	46	0.6	1-Sided Adj	CAMIRKHI20170309051554637	
Explanation:		Customer Growth: Labor increase of \$33K and non-labor increase of \$13K due to increased credit activities resulting from customer growth. See Credit & Collections 100003.000 Supplemental Workpaper 1 - Customer Growth Calculation for additional detail. (Reference cell D-5 for labor and cell D-9 for non-labor)							

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 3. Credit & Collections
Workpaper: 100003.000 - Credit & Collections

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>
2018	Other	-212	0	0	-212	-2.8	1-Sided Adj	CAMIRKHI20170309051619090
Explanation:		VREP: Retirements for Account Management Supervisor (\$66.5K and .9 FTE), Customer Payments Supervisor (\$72.5K and .9 FTE), and Customer Payments Specialist (\$73K and .9 FTE)						
2018	FOF-Ongoing	106	133	0	239	1.9	1-Sided Adj	CAMIRKHI20170309051442277
Explanation:		Business Optimization: FOF labor and non-labor benefits and costs such as reducing energy theft, Propensity to Pay, and digitizing intake process and work orders for contract crews.						
2018 Total		-73	250	0	177	-0.3		
2019	Other	0	134	0	134	0.0	1-Sided Adj	CAMIRKHI20170309051846950
Explanation:		Collection Agency Commission: \$134K non-labor increase in commission to collection agencies.						
2019	Other	53	22	0	75	0.9	1-Sided Adj	CAMIRKHI20170309051917920
Explanation:		Customer Growth: Labor increase of \$53K and non-labor increase of \$22K due to increased credit activities resulting from customer growth. See Credit & Collections 100003.000 Supplemental Workpaper 1 - Customer Growth Calculation for additional detail. (Reference cell E-5 for labor and cell E-9 for non-labor)						
2019	Other	-212	0	0	-212	-2.8	1-Sided Adj	CAMIRKHI20170309051941857
Explanation:		VREP: Retirements for Account Management Supervisor (\$66.5K and .9 FTE), Customer Payments Supervisor (\$72.5K and .9 FTE), and Customer Payments Specialist (\$73K and .9 FTE)						
2019	Other	204	6	0	210	2.0	1-Sided Adj	CSCHRAMM20170511124700173
Explanation:		Complex Credit Analytics: 2 FTE s as Credit Advisors (MRR AD2 - \$102K each) to work on complex credit issues. Calculation: Labor: 2 FTEs x \$102K = \$204K Non-labor: \$3K x 2 = \$6K						
2019	FOF-Ongoing	106	133	0	239	1.9	1-Sided Adj	CAMIRKHI20170309051804997
Explanation:		Business Optimization: FOF labor and non-labor cost to achieve in reducing energy theft, Propensity to Pay, and digitizing intake process and work orders for contract crews.						
2019 Total		151	295	0	446	2.0		

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
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Category: A. Customer Service Office Operations
Category-Sub: 3. Credit & Collections
Workpaper: 100003.000 - Credit & Collections

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,734	1,852	1,891	1,649	1,740
Non-Labor	410	460	438	442	544
NSE	0	0	0	0	0
Total	2,144	2,312	2,329	2,092	2,284
FTE	29.5	30.1	28.8	24.7	24.9
Adjustments (Nominal \$) **					
Labor	38	45	-23	45	46
Non-Labor	29	21	0	0	0
NSE	0	0	0	0	0
Total	67	66	-23	45	46
FTE	0.7	0.8	-0.2	0.8	0.8
Recorded-Adjusted (Nominal \$)					
Labor	1,772	1,897	1,868	1,694	1,787
Non-Labor	440	481	438	442	544
NSE	0	0	0	0	0
Total	2,211	2,378	2,306	2,136	2,330
FTE	30.2	30.9	28.6	25.5	25.7
Vacation & Sick (Nominal \$)					
Labor	257	301	298	262	296
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	257	301	298	262	296
FTE	4.9	5.4	5.1	4.5	4.7
Escalation to 2016\$					
Labor	188	153	102	46	0
Non-Labor	11	6	0	1	0
NSE	0	0	0	0	0
Total	199	159	102	47	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	2,216	2,351	2,269	2,002	2,083
Non-Labor	451	487	438	443	544
NSE	0	0	0	0	0
Total	2,667	2,837	2,707	2,445	2,627
FTE	35.1	36.3	33.7	30.0	30.4

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

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 Category-Sub: 3. Credit & Collections
 Workpaper: 100003.000 - Credit & Collections

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	38	45	-23	45	46
Non-Labor	29	21	0	0	0
NSE	0	0	0	0	0
Total	67	66	-23	45	46
FTE	0.7	0.8	-0.2	0.8	0.8

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	0	3	0	0.0	CCTR Transf From 2100-0395.000	CSCHRAMM20160928203511860
Explanation: Transfer printing costs associated with red notices from cost center 2100-0395.000 in work paper group 100004.000 Remittance Processing to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.							
2012	Other	-5	0	0	-0.1	CCTR Transf To 2100-0712.000	CSCHRAMM20161016145820713
Explanation: Transfer labor and FTE associated with Business Planner role from cost center 2100-3490 in work paper group 100003 Credit & Collections to cost center 2100-0712 in work paper group 1AG001 Controller - Plng & Reg Accts. to align costs where Business Planning functions reside.							
2012	Other	43	0	0	0.8	CCTR Transf From 2100-3580.000	CSCHRAMM20170223161139823
Explanation: Transfer labor and FTE associated with Business Service Credit Rep from cost center 2100-3580 in work paper group 11N002 Business Services to cost center 2100-0022 in work paper group 100003 Credit & Collections to align costs where function/activity resides.							
2012	Other	0	27	0	0.0	CCTR Transf From 2100-0395.001	CSCHRAMM20160928202743797
Explanation: Transfer postage costs associated with red notices from cost center 2100-0395.001 in sub work paper group 100004.001 Postage to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.							
2012 Total		38	29	0	0.7		
2013	Other	0	2	0	0.0	CCTR Transf From 2100-0395.000	CSCHRAMM20160928203732170
Explanation: Transfer printing costs associated with red notices from cost center 2100-0395.000 in work paper group 100004.000 Remittance Processing to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.							
2013	Other	45	0	0	0.8	CCTR Transf From 2100-3580.000	CSCHRAMM20170223161253190

Note: Totals may include rounding differences.

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2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 3. Credit & Collections
 Workpaper: 100003.000 - Credit & Collections

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
Explanation: Transfer labor and FTE associated with Business Service Credit Rep. from cost center 2100-3580 in work paper group 11N002 Business Services to cost center 2100-0022 in work paper group 100003 Credit & Collections to align costs where function/activity resides.							
2013	Other	0	19	0	0.0	CCTR Transf From 2100-0395.001	CSCHRAMM20160928203051087
Explanation: Transfer postage costs associated with red notices from cost center 2100-0395.001 in sub work paper group 100004.001 Postage to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.							
2013 Total		45	21	0	0.8		
2014	Other	-23	0	0	-0.3	CCTR Transf To 2100-0712.000	CSCHRAMM20161016150005967
Explanation: Transfer labor and FTE associated with Business Planner role from cost center 2100-3490 in work paper group 100003 Credit & Collections to cost center 2100-0712 in work paper group 1AG001 Controller - PIng & Reg Accts. to align costs where Business Planning functions reside.							
2014	Other	-30	0	0	-0.4	CCTR Transf To 2100-0712.000	CSCHRAMM20161016150059060
Explanation: Transfer labor and FTE associated with Business Planner role from cost center 2100-3811 in work paper group 100003 Credit & Collections to cost center 2100-0712 in work paper group 1AG001 Controller - PIng & Reg Accts. to align costs where Business Planning functions reside.							
2014	Other	30	0	0	0.5	CCTR Transf From 2100-3580.000	CSCHRAMM20170223161403003
Explanation: Transfer labor and FTE associated with Business Service Credit Rep from cost center 2100-3580 in work paper group 11N002 Business Services to cost center 2100-0022 in work paper group 100003 Credit & Collections to align costs where function/activity resides.							
2014 Total		-23	0	0	-0.2		
2015	Other	45	0	0	0.8	CCTR Transf From 2100-0634.000	CSCHRAMM20170223161505410
Explanation: Transfer labor and FTE associated with Business Service Credit Rep from cost center 2100-0634 in work paper group 11N002 Business Services to cost center 2100-0022 in work paper group 100003 Credit & Collections to align costs where function/activity resides.							
2015 Total		45	0	0	0.8		
2016	Other	46	0	0	0.8	CCTR Transf From 2100-0634.000	CSCHRAMM20170223161627037
Explanation: Transfer labor and FTE associated with Business Service Credit Rep from cost center 2100-0634 in work paper group 11N002 Business Services to cost center 2100-0022 in work paper group 100003 Credit & Collections to align costs where function/activity resides.							

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 3. Credit & Collections
Workpaper: 100003.000 - Credit & Collections

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2016 Total		46	0	0	0.8		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 3. Credit & Collections
 Workpaper: 100003.000 - Credit & Collections

RAMP Item # 1

Ref ID: CSCHRAMM20170511114831563

RAMP Chapter: SDG&E-3

Program Name: Energy Diversion Investigations

Program Description: Meter tampering and meter bypass investigation and remediation.

Risk/Mitigation:

Risk: Employee, Contractor, and Public Safety

Mitigation: Customer initiated orders relative to public safety.

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	168	168	168
High	202	202	202

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 239

Explanation: 2016 Total Leads 2,208 x average hours per investigation x average salary = 2016 embedded costs
 2,208 leads x 3.15 hrs. x \$34.33 = \$239K

Supplemental Workpapers for Workpaper 100003.000

Credit & Collections 100003.000 Supplemental Work Paper 1 - Customer Growth Calculation

	A	B	C	D	E
1		Base Year 2016	2017	2018	2019
2	Meter Growth Rate ¹	0%	0.75%	1.69%	2.67%
3					
4	Adjusted Labor ²	\$ 2,083	\$ 1,983	\$ 1,977	\$ 1,977
5	Labor forecast adjustments due to growth		\$ 15	\$ 33	\$ 53
6	Adjusted Labor Forecast		\$ 1,998	\$ 2,010	\$ 2,030
7					
8	Adjusted Non-Labor ²	\$ 544	\$ 677	\$ 781	\$ 811
9	Non-Labor forecast adjustments due to growth		\$ 5	\$ 13	\$ 22
10	Adjusted Non-Labor Forecast		\$ 682	\$ 795	\$ 833
11					
12	Meter Growth Rate	Actual / Forecast Electric Meters³	% Increase from Base Year	% Increase year-over-year	
13	Base Year 2016	1,430,175			
14	2017	1,440,919	0.75%	0.75%	
15	2018	1,454,332	1.69%	0.93%	
16	2019	1,468,392	2.67%	0.97%	
17					
18	¹ Represents Electric meter growth as a representation of customer growth for all customer classes				
19	² Adjusted Labor and Non-Labor represents Base Year amounts adjusted for incremental increases and decreases requested in GRC prior to the addition of Customer Growth amounts.				
20	³ 2016 actual electric meters, 2017 through 2019 forecasted electric meters. Reference: Exhibit SDG&E-38 Customer Forecast Electric, Witness Kenneth Schiermeyer.				
21					

Beginning of Workpaper
100004.000 - Remittance Processing

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 4. Remittance Processing
 Workpaper: 100004.000 - Remittance Processing

Activity Description:

The Remittance Processing workgroup expenses cover the costs of paper, envelopes, and vendor fees to deliver customer bills.

Forecast Explanations:

Labor - Base YR Rec

N/A

Non-Labor - Base YR Rec

A base year forecast method was used because this workpaper group includes non-labor costs of software maintenance for My Account, vendor's fees for electronic bill delivery to customers' home banking websites, and billing forms and envelopes for paper bills and notices. These costs are driven by the volumes of bills, notices and payments which are impacted by customer growth as well as customer choice of billing and payment channels. Therefore, the base year provides a reasonable starting point for future expenditures.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		0	0	0	0	0	0	0	0	
Non-Labor		823	899	699	792	785	772	758	745	
NSE		0	0	0	0	0	0	0	0	
Total		823	899	699	792	785	772	758	745	
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 4. Remittance Processing
Workpaper: 100004.000 - Remittance Processing

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	0	0	0	0	0	0	0	0	0
Non-Labor	Base YR Rec	785	785	785	-13	-27	-40	772	758	745
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		785	785	785	-13	-27	-40	772	758	745
FTE	Base YR Rec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	0	2	0	2	0.0	1-Sided Adj	CSCHRAMM20170309162530640	
Explanation:		Software Licensing Costs: \$2K non-labor increase for licensing fees for SDG&E's MyAccount electronic bill payment and presentment software. See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell M-17)							
2017	Other	0	1	0	1	0.0	1-Sided Adj	CSCHRAMM20170309162657827	
Explanation:		Increase of E-Bills Delivered: \$1K increase in non-labor costs for vendor to deliver electronic bills to customers' home banking websites. See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell M-5)							
2017	Other	0	-16	0	-16	0.0	1-Sided Adj	CSCHRAMM20170309162729970	
Explanation:		Forms & Envelopes - reduction due to suppressed bills and e-bills: Reduction of (\$16K) in non-labor for forms and envelopes due to suppressed bills (customers have indicated they no longer need a paper bill). See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell M-12)							
2017 Total		0	-13	0	-13	0.0			
2018	Other	0	4	0	4	0.0	1-Sided Adj	CSCHRAMM20170309162758687	
Explanation:		Software Licensing Costs: \$4K non-labor increase for licensing fees for SDG&E's MyAccount electronic bill payment and presentment software. See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell N-17)							
2018	Other	0	3	0	3	0.0	1-Sided Adj	CSCHRAMM20170309162826000	

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 4. Remittance Processing
 Workpaper: 100004.000 - Remittance Processing

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
Explanation:		Increase of E-Bills Delivered: \$3K increase in non-labor costs for vendor to deliver electronic bills to customers' home banking websites. See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell N-5)						
2018	Other	0	-34	0	-34	0.0	1-Sided Adj	CSCHRAMM20170309162852300
Explanation:		Forms & Envelopes - reduction due to suppressed bills and e-bills: Reduction of (\$34K) in non-labor for forms and envelopes due to suppressed bills (customers have indicated they no longer need a paper bill). See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell N-12)						
2018 Total		0	-27	0	-27	0.0		
2019	Other	0	7	0	7	0.0	1-Sided Adj	CSCHRAMM20170309162924623
Explanation:		Software Licensing Costs: \$7K non-labor increase for licensing fees for SDG&E's MyAccount electronic bill payment and presentment software. See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell O-17)						
2019	Other	0	4	0	4	0.0	1-Sided Adj	CSCHRAMM20170309162947153
Explanation:		Increase of E-Bills Delivered: \$4K increase in non-labor costs for vendor to deliver electronic bills to customers' home banking websites. See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell O-5)						
2019	Other	0	-51	0	-51	0.0	1-Sided Adj	CSCHRAMM20170309163016213
Explanation:		Forms & Envelopes - reduction due to suppressed bills and e-bills: Reduction of (\$51K) in non-labor for forms and envelopes due to suppressed bills (customers have indicated they no longer need a paper bill). See Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations for additional detail. (Reference cell O-12)						
2019 Total		0	-40	0	-40	0.0		

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 4. Remittance Processing
Workpaper: 100004.000 - Remittance Processing

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	888	889	698	790	785
NSE	0	0	0	0	0
Total	888	889	698	790	785
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-85	-2	0	0	0
NSE	0	0	0	0	0
Total	-85	-2	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	802	887	698	790	785
NSE	0	0	0	0	0
Total	802	887	698	790	785
FTE	0.0	0.0	0.0	0.0	0.0
Vacation & Sick (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Escalation to 2016\$					
Labor	0	0	0	0	0
Non-Labor	21	11	1	1	0
NSE	0	0	0	0	0
Total	21	11	1	1	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	0	0	0	0	0
Non-Labor	823	899	699	792	785
NSE	0	0	0	0	0
Total	823	899	699	792	785
FTE	0.0	0.0	0.0	0.0	0.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 4. Remittance Processing
 Workpaper: 100004.000 - Remittance Processing

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	0	0
Non-Labor	-85	-2	0	0	0
NSE	0	0	0	0	0
Total	-85	-2	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	0	-3	0	0.0	CCTR Transf To 2100-3490.000	CCHRAMM20160928203511860
Explanation:		Transfer printing costs associated with red notices from cost center 2100-0395.000 in work paper group 100004.000 Remittance Processing to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.					
2012	Other	0	-83	0	0.0	1-Sided Adj	CCHRAMM20161021105121467
Explanation:		Remove one time costs associated with audit fees.					
2012 Total		0	-85	0	0.0		
2013	Other	0	-2	0	0.0	CCTR Transf To 2100-3490.000	CCHRAMM20160928203732170
Explanation:		Transfer printing costs associated with red notices from cost center 2100-0395.000 in work paper group 100004.000 Remittance Processing to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.					
2013 Total		0	-2	0	0.0		
2014 Total		0	0	0	0.0		
2015 Total		0	0	0	0.0		
2016 Total		0	0	0	0.0		

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper 100004.000

Remittance Processing 100004.000 Supplemental Workpaper 1 - Historical and Forecast Data

	A	B	C	D	E	F	G	H	I	J	
1		Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Note: Historical and forecast volume of Bills & Notices is the same set of data used in Workpaper 100004.001 - Postage Supplemental Workpaper 1	
2		2012	2013	2014	2015	2016	2017	2018	2019		
3							[A]	[A]	[A]		
4	Total Actual / Forecast Electric Meters	1,397,678	1,405,218	1,412,939	1,421,829	1,430,175	1,440,919	1,454,331	1,468,391		
5	Reference: Exhibit SDG&E-38 Customer Forecast Electric, Witness: Kenneth Schiermeyer										
6	Volume										
7	Bills & Notices						[C] = (A x B)	[C] = (A x B)	[C] = (A x B)		
8	RICOH - Grouped Bills	842,264	839,427	955,359	885,060	562,066	561,958	567,189	572,672		
9	Monterey Park (MPK)- Paper Bills	10,643,744	10,079,842	9,687,681	9,427,349	9,141,050	8,861,652	8,595,096	8,325,777		
10	My Account Suppressed Bills	4,448,597	4,955,778	5,380,205	5,870,166	6,410,828	6,959,639	7,533,435	8,120,202		
11	Consolidator e-Bills Delivered	771,581	872,905	931,842	908,366	918,765	922,188	930,772	939,770		
12	Other Notices	583,026	550,400	713,959	806,242	755,202	763,687	770,795	778,247		
13	Total	17,289,212	17,298,352	17,669,046	17,897,183	17,787,911	18,069,124	18,397,287	18,736,668		
14											
15	Bills & Notices Per Meter						[B]	[B]	[B]		
16	RICOH - Grouped Bills	0.60	0.60	0.68	0.62	0.39	0.39	0.39	0.39		
17	MPK- Paper Bills	7.62	7.17	6.86	6.63	6.39	6.15	5.91	5.67		
18	My Account Suppressed Bills	3.18	3.53	3.81	4.13	4.48	4.83	5.18	5.53		
19	Consolidator e-Bills Delivered	0.55	0.62	0.66	0.64	0.64	0.64	0.64	0.64		
20	Other Notices	0.42	0.39	0.51	0.57	0.53	0.53	0.53	0.53		
21	Total	12.37	12.31	12.52	12.59	12.43	12.54	12.65	12.76		
22											
23	All Bills Per Meter (Sum of Rows 16:19)	11.95	11.92	12.01	12.02	11.90	12.01	12.12	12.23		
24	Notices Per Meter	0.42	0.39	0.51	0.57	0.53	0.53	0.53	0.53		
25											
26	Postal Rate									Postal Rate Changes Effective 1/22/17	
27	Bills & Notices						[D]	[D]	[D]	2017	
28	RICOH - Grouped Bills			Average Rate of flat mails		\$0.653	\$0.661	\$0.661	\$0.661	\$0.008	
29	MPK- Paper Bills			Blended rate of regular mails		\$0.381	\$0.379	\$0.379	\$0.379	(\$0.002)	
30	My Account Suppressed Bills			Blended rate of regular mails		\$0.380	\$0.378	\$0.378	\$0.378	(\$0.002)	
31	Consolidator e-Bills Delivered			Blended rate of regular mails		\$0.380	\$0.378	\$0.378	\$0.378	(\$0.002)	
32	Other Notices			Blended rate of regular mails		\$0.408	\$0.412	\$0.412	\$0.412	\$0.004	
33											
34	Postage										
35	Bills & Notices						[E] = (C x D)	[E] = (C x D)	[E] = (C x D)		
36	RICOH - Grouped Bills	\$534,015	\$555,756	\$634,749	\$563,365	\$367,213	\$371,638	\$375,097	\$378,724		
37	MPK- Paper Bills	\$3,791,483	\$3,664,918	\$3,688,376	\$3,664,274	\$3,484,734	\$3,359,613	\$3,258,557	\$3,156,453		
38	My Account Suppressed Bills	\$1,555,000	\$1,781,106	\$2,044,042	\$2,272,641	\$2,438,102	\$2,632,205	\$2,849,221	\$3,071,142		
39	Consolidator e-Bills Delivered	\$269,705	\$313,722	\$354,024	\$351,675	\$349,416	\$348,781	\$352,028	\$355,431		
40	Other Notices	\$216,898	\$210,606	\$292,072	\$335,580	\$308,256	\$314,774	\$317,704	\$320,776		
41	Total	\$6,367,101	\$6,526,108	\$7,013,263	\$7,187,535	\$6,947,722	\$7,027,011	\$7,152,607	\$7,282,526		

Remittance Processing 100004.000 Supplemental Workpaper 2 - Forecast Adjustment Calculations

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Volume					Unit cost						Impacts Due to Meter Growth		
2	Vendor's Fees for Consolidator e-Bills Delivered (1)	2016	2017	2018	2019		2016	2017	2018	2019			2017	2018	2019
3															
4	Volume = Bills & Notices: Consolidator e-Bills Delivered (2)	918,765	922,188	930,772	939,770							Volume	3,423	12,007	21,005
5	Costs = Volume x Unit Cost	\$192,941	\$193,659	\$195,462	\$197,352		\$0.21	\$0.21	\$0.21	\$0.21		Costs	\$718	\$2,521	\$4,411
6															
7															
8		Volume					Unit Cost Savings						Impacts Due to Meter Growth		
9	Forms & Envelopes Savings	2016	2017	2018	2019		2016	2017	2018	2019			2017	2018	2019
10															
11	Volume = Bills & Notices: My Account Suppressed Bills + Consolidator e-Bills Delivered (3)	7,329,593	7,881,827	8,464,207	9,059,972							Volume	552,234	582,380	595,765
12	Savings = Volume x Unit Cost Savings	(\$216,956)	(\$233,302)	(\$250,541)	(\$268,175)		(\$0.0296)	(\$0.0296)	(\$0.0296)	(\$0.0296)		Savings	\$16,346	(\$33,585)	(\$51,219)
13															
14															
15		Cost											Impacts Due to Contractual Increase of 4% Annually		
16	Software (4)	2016	2017	2018	2019								2017	2018	2019
17	Contractual increase of 4% annually	\$54,968	57,167	59,453	61,832							Costs	\$2,199	\$4,485	\$6,864
18															
19															
20	(1) Vendor fees are the cost to deliver e-bills to customers' home banking web sites, not email addresses.														
21	(2) Volume actual / forecast see Supplemental Workpaper 1 Historical and Forecast Data attached to Ex. SDGE-18 Workpaper 100004.000. Reference cells: F11; G11; H11; I11														
22	(3) Volume actual / forecast see Supplemental Workpaper 1 Historical and Forecast Data attached to Ex. SDGE-18 Workpaper 100004.000. Reference cells: Sum(F10:F11); Sum(G10:G11); Sum(H10:H11); Sum(I10:I11)														
23	(4) Annual software maintenance of My Account internal SDG&E Electronic Bill Payment & Presentment (EBPP) platform.														

**Beginning of Workpaper
100004.001 - Postage**

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 5. Postage
 Workpaper: 100004.001 - Postage

Activity Description:

The Postage workgroup covers the postage costs to deliver customer bills.

Forecast Explanations:

Labor - Base YR Rec

N/A

Non-Labor - Base YR Rec

N/A

NSE - Base YR Rec

A base year forecast method was used because expenses depend on postage rates which are determined by the USPS, the volume of paper bills, and notices which are impacted by customer growth as well as electronic bill adoption levels. Therefore, the base year provides a reasonable starting point for future expenditures.

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		0	0	0	0	0	0	0	0	
Non-Labor		0	0	0	0	0	0	0	0	
NSE		4,659	4,489	4,620	4,571	4,160	4,045	3,952	3,856	
Total		4,659	4,489	4,620	4,571	4,160	4,045	3,952	3,856	
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 5. Postage
Workpaper: 100004.001 - Postage

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	0	0	0	0	0	0	0	0	0
Non-Labor	Base YR Rec	0	0	0	0	0	0	0	0	0
NSE	Base YR Rec	4,160	4,160	4,160	-115	-208	-304	4,045	3,952	3,856
Total		4,160	4,160	4,160	-115	-208	-304	4,045	3,952	3,856
FTE	Base YR Rec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	0	0	107	107	0.0	1-Sided Adj	CSCHRAMM20170309163419503	
Explanation:		Postage Impact Due to Meter Growth: Postage increase in the amount of \$107K due to meter growth. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell F-7)							
2017	Other	0	0	-28	-28	0.0	1-Sided Adj	CSCHRAMM20170309163513007	
Explanation:		Postage Impact Due to Postal Rate Change: Postage reduction in the amount of (\$28K) due to postal rate change. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell J-7)							
2017	Other	0	0	-211	-211	0.0	1-Sided Adj	CSCHRAMM20170309163953683	
Explanation:		Postage Savings Impact Due to Meter Growth (paperless/e-Bills): Paperless postage savings of (\$211K) due to meter growth. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell F-15)							
2017	Other	0	0	17	17	0.0	1-Sided Adj	CSCHRAMM20170309164042870	
Explanation:		Postage Savings Impact Due to Postal Rate Change (paperless/e-Bills): Paperless postage savings decrease of \$17K due to postal rate change. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell J-15)							
2017 Total		0	0	-115	-115	0.0			
2018	Other	0	0	234	234	0.0	1-Sided Adj	CSCHRAMM20170309164105130	
Explanation:		Postage Impact Due to Meter Growth: Postage increase in the amount of \$234K due to meter growth. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell G-7)							

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 5. Postage
 Workpaper: 100004.001 - Postage

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>
2018	Other	0	0	-29	-29	0.0	1-Sided Adj	CSCHRAMM20170309164128740
Explanation:		Postage Impact Due to Postal Rate Change: Postage reduction in the amount of (\$29K) due to postal rate change. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell K-7)						
2018	Other	0	0	-433	-433	0.0	1-Sided Adj	CSCHRAMM20170309164152827
Explanation:		Postage Savings Impact Due to Meter Growth (paperless/e-Bills): Paperless postage savings of (\$433K) due to meter growth. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell G-15)						
2018	Other	0	0	20	20	0.0	1-Sided Adj	CSCHRAMM20170309164236273
Explanation:		Postage Savings Impact Due to Postal Rate Change (paperless/e-Bills): Paperless postage savings decrease of \$20K due to postal rate change. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell K-15)						
2018 Total		0	0	-208	-208	0.0		
2019	Other	0	0	365	365	0.0	1-Sided Adj	CSCHRAMM20170309164256210
Explanation:		Postage Impact Due to Meter Growth: Postage increase in the amount of \$365K due to meter growth. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell H-7)						
2019	Other	0	0	-30	-30	0.0	1-Sided Adj	CSCHRAMM20170309164315217
Explanation:		Postage Impact Due to Postal Rate Change: Postage reduction in the amount of (\$30K) due to postal rate change. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell L-7)						
2019	Other	0	0	-661	-661	0.0	1-Sided Adj	CSCHRAMM20170309164340787
Explanation:		Postage Savings Impact Due to Meter Growth (paperless/e-Bills): Paperless postage savings of (\$661K) due to meter growth. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell H-15)						
2019	Other	0	0	22	22	0.0	1-Sided Adj	CSCHRAMM20170309164403053
Explanation:		Postage Savings Impact Due to Postal Rate Change (paperless/e-Bills): Paperless postage savings decrease of \$22K due to postal rate change. See Postage 100004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary for additional detail. (Reference cell L-15)						
2019 Total		0	0	-304	-304	0.0		

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 5. Postage
Workpaper: 100004.001 - Postage

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	2,565	4,467	4,613	4,564	4,160
NSE	0	0	0	0	0
Total	2,565	4,467	4,613	4,564	4,160
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-2,565	-4,467	-4,613	-4,564	-4,161
NSE	4,542	4,431	4,615	4,563	4,160
Total	1,977	-35	2	-1	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	4,542	4,431	4,615	4,563	4,160
Total	4,542	4,431	4,615	4,563	4,160
FTE	0.0	0.0	0.0	0.0	0.0
Vacation & Sick (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Escalation to 2016\$					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	116	57	5	7	0
Total	116	57	5	7	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	4,659	4,489	4,620	4,571	4,160
Total	4,659	4,489	4,620	4,571	4,160
FTE	0.0	0.0	0.0	0.0	0.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 5. Postage
Workpaper: 100004.001 - Postage

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	0	0
Non-Labor	-2,565	-4,467	-4,613	-4,564	-4,161
NSE	4,542	4,431	4,615	4,563	4,160
Total	1,977	-35	2	-1	-0.296
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	0	2,004	0	0.0	1-Sided Adj	TPMTT20160919152208630
Explanation: To true-up postage expenses							
2012	Other	0	-4,542	4,542	0.0	1-Sided Adj	TPMTT20160919152515020
Explanation: To move postage expenses to NSE							
2012	Other	0	-27	0	0.0	CCTR Transf To 2100-3490.000	CSCHRAMM20160928202743797
Explanation: Transfer postage costs associated with red notices from cost center 2100-0395.001 in sub work paper group 100004.001 Postage to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.							
2012 Total		0	-2,565	4,542	0.0		
2013	Other	0	-17	0	0.0	1-Sided Adj	TPMTT20160919153158610
Explanation: To true-up postage expenses							
2013	Other	0	-4,431	4,431	0.0	1-Sided Adj	TPMTT20160919153355460
Explanation: To move postage expenses to NSE							
2013	Other	0	-19	0	0.0	CCTR Transf To 2100-3490.000	CSCHRAMM20160928203051087
Explanation: Transfer postage costs associated with red notices from cost center 2100-0395.001 in sub work paper group 100004.001 Postage to costs center 2100-3490 in work paper group 100003.000 Credit & Collections to align costs where activity resides.							
2013 Total		0	-4,467	4,431	0.0		
2014	Other	0	2	0	0.0	1-Sided Adj	TPMTT20160919153804920
Explanation: To true-up postage expenses							
<i>Note: Totals may include rounding differences.</i>							

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 5. Postage
 Workpaper: 100004.001 - Postage

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2014	Other	0	-4,615	4,615	0.0	1-Sided Adj	TPMTT20160919153930613
Explanation: To move postage expenses to NSE							
2014 Total		0	-4,613	4,615	0.0		
2015	Other	0	-1	0	0.0	1-Sided Adj	TPMTT20160919154156390
Explanation: To true-up postage expenses							
2015	Other	0	-4,563	4,563	0.0	1-Sided Adj	TPMTT20160919154250040
Explanation: To move postage expenses to NSE							
2015 Total		0	-4,564	4,563	0.0		
2016	Other	0	0	0	0.0	1-Sided Adj	TPMTT20170203171812627
Explanation: To true-up postage expenses							
2016	Other	0	-4,160	4,160	0.0	1-Sided Adj	TPMTT20170203172028923
Explanation: To move postage expenses to NSE							
2016 Total		0	-4,161	4,160	0.0		

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper 100004.001

Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Actual	Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast									
2	2012	2013	2014	2015	2016	2016	2017	2018	2019									
3							[A]	[A]	[A]									
4	Total actual / forecast electric meters										Reference: Exhibit SDG&E-38 Customer Forecast Electric Witness: Kenneth Schiermeyer							
5	Volume						Bills & Notices Volume Forecast			Bills & Notices Volume Forecast Change								
6	Bills & Notices						[C] = (A x B)	[C] = (A x B)	[C] = (A x B)	2017	2018	2019						
7	RICOH - Grouped Bills	842,264	839,427	955,359	885,060	562,066	561,958	567,189	572,672	(108)	5,123	10,606						
8	Monterey Park (MPK) - Paper Bills	10,643,744	10,079,842	9,687,681	9,427,349	9,141,050	8,861,652	8,595,096	8,325,777	(279,398)	(545,954)	(815,273)						
9	My Account Surpressed Bills	4,448,597	4,955,778	5,380,205	5,870,166	6,410,828	6,959,639	7,533,435	8,120,202	548,811	1,122,607	1,709,374						
10	Consolidator e-Bills Delivered	771,581	872,905	931,842	908,366	918,765	922,188	930,772	939,770	3,423	12,007	21,005						
11	Other Notices	583,026	550,400	713,959	806,242	755,202	763,687	770,795	778,247	8,485	15,593	23,045						
12	Total	17,289,212	17,298,352	17,669,046	17,897,183	17,787,911	18,069,124	18,397,287	18,736,668	281,213	609,376	948,757						
13	MPK Bills & Notices (Sum of Rows 8:11)					17,225,845	17,507,166	17,830,098	18,163,996	281,321	604,253	938,151						
14	Combined Electronic Bills (Sum Rows 9:10)					7,329,593	7,881,827	8,464,207	9,059,972	552,234	1,134,614	1,730,379						
15																		
16							Bills & Notices Per Meter Forecast			Bills & Notices Per Meter Forecast Change to BY2016								
17	Bills & Notices Per Meter						[B]	[B]	[B]	2016 - 2015	2017	2018	2019					
18	RICOH - Grouped Bills	0.60	0.60	0.68	0.62	0.39	0.39	0.39	0.39	-0.230	0.000	0.000	0.000					
19	MPK - Paper Bills	7.62	7.17	6.86	6.63	6.39	6.15	5.91	5.67	-0.240	-0.240	-0.480	-0.720					
20	My Account Surpressed Bills	3.18	3.53	3.81	4.13	4.48	4.83	5.18	5.53	0.350	0.350	0.700	1.050					
21	Consolidator e-Bills Delivered	0.55	0.62	0.66	0.64	0.64	0.64	0.64	0.64	0.000	0.000	0.000	0.000					
22	Other Notices	0.42	0.39	0.51	0.57	0.53	0.53	0.53	0.53	-0.040	0.000	0.000	0.000					
23	Total	12.37	12.31	12.52	12.59	12.43	12.54	12.65	12.76	-0.160	0.110	0.220	0.330					
24	All Bills Per Meter (Sum of Rows 18 through 21)	11.95	11.92	12.01	12.02	11.90	12.01	12.12	12.23									
25	Notices Per Meter	0.42	0.39	0.51	0.57	0.53	0.53	0.53	0.53									
26																		
27																		
28	Postal Rate						Postal Rate Forecast			Postal Rate Changes Effective 1/22/17			BY2016 Blended Postal Rates					
29	Bills & Notices						[D]	[D]	[D]	2017	2018	2019	2017	2018	2019			
30	RICOH - Grouped Bills			Average Rate of flat mails		\$0.653	\$0.661	\$0.661	\$0.661	\$0.008	\$0.000	\$0.000	\$0.6533	\$0.6533	\$0.6533			
31	MPK - Paper Bills			Blended rate of regular mails		\$0.381	\$0.379	\$0.379	\$0.379	(\$0.002)	\$0.000	\$0.000	\$0.3820	\$0.3820	\$0.3820			
32	My Account Surpressed Bills			Blended rate of regular mails		\$0.380	\$0.378	\$0.378	\$0.378	(\$0.002)	\$0.000	\$0.000	\$0.3820	\$0.3820	\$0.3820			
33	Consolidator e-Bills Delivered			Blended rate of regular mails		\$0.380	\$0.378	\$0.378	\$0.378	(\$0.002)	\$0.000	\$0.000	\$0.3820	\$0.3820	\$0.3820			
34	Other Notices			Blended rate of regular mails		\$0.408	\$0.412	\$0.412	\$0.412	\$0.004	\$0.000	\$0.000	\$0.3820	\$0.3820	\$0.3820			
35																		
36	Postage						Postage Forecast			Net Postage Forecast Impacts To BY2016			Postage Forecast Impact Due to Growth			Postage Forecast Impact Due to Rate		
37	Bills & Notices						[E] = (C x D)	[E] = (C x D)	[E] = (C x D)	2017	2018	2019	2017	2018	2019	2017	2018	2019
38	RICOH - Grouped Bills	\$534,015	\$555,756	\$634,749	\$563,365	\$367,213	\$371,638	\$375,097	\$378,724	\$4,425	\$7,884	\$11,511	(\$71)	\$3,347	\$6,929	\$4,496	\$4,537	\$4,582
39	MPK - Paper Bills	\$3,791,483	\$3,664,918	\$3,688,376	\$3,664,274	\$3,484,734	\$3,359,613	\$3,258,557	\$3,156,453	(\$125,121)	(\$226,177)	(\$328,281)	(\$106,730)	(\$208,554)	(\$311,434)	(\$18,391)	(\$17,623)	(\$16,847)
40	My Account Surpressed Bills	\$1,555,000	\$1,781,106	\$2,044,042	\$2,272,641	\$2,438,102	\$2,632,205	\$2,849,221	\$3,071,142	\$194,103	\$411,119	\$633,040	\$209,646	\$428,836	\$652,981	(\$15,543)	(\$17,717)	(\$19,941)
41	Consolidator e-Bills Delivered	\$269,705	\$313,722	\$354,024	\$351,675	\$349,416	\$348,781	\$352,028	\$355,431	(\$635)	\$2,612	\$6,015	\$1,308	\$4,587	\$8,024	(\$1,943)	(\$1,975)	(\$2,009)
42	Other Notices	\$216,898	\$210,606	\$292,072	\$335,580	\$308,256	\$314,774	\$317,704	\$320,776	\$6,518	\$9,448	\$12,520	\$3,241	\$5,957	\$8,803	\$3,277	\$3,491	\$3,717
43	Total Postage	\$6,367,101	\$6,526,108	\$7,013,263	\$7,187,535	\$6,947,722	\$7,027,011	\$7,152,607	\$7,282,526	\$79,289	\$204,885	\$334,804	\$107,394	\$234,173	\$365,303	(\$28,105)	(\$29,288)	(\$30,499)
44																		
45	MPK Bills & Notices Postage (Sum of rows 39:42)	\$5,833,086	\$5,970,352	\$6,378,514	\$6,624,170	\$6,580,509	\$6,655,373	\$6,777,510	\$6,903,802	\$74,864	\$197,001	\$323,293	\$107,465	\$230,826	\$358,374	(\$32,601)	(\$33,825)	(\$35,081)
46	Postage Savings Impacts (Combined Electronic Bills Savings (Sum of Rows 40:41)*-1)	(\$1,824,705)	(\$2,094,828)	(\$2,398,066)	(\$2,624,316)	(\$2,787,518)	(\$2,980,986)	(\$3,201,249)	(\$3,426,573)	(\$193,468)	(\$413,731)	(\$639,055)	(\$210,954)	(\$433,423)	(\$661,005)	\$17,486	\$19,692	\$21,950
47																		
48	Total Postage Actual / Forecast	\$4,542,396	\$4,431,280	\$4,615,197	\$4,563,219	\$4,160,204	\$4,046,025	\$3,951,358	\$3,855,953	(\$114,179)	(\$208,846)	(\$304,251)	(\$103,560)	(\$199,250)	(\$295,702)	(\$10,619)	(\$9,596)	(\$8,549)
49																		
50	Note: Totals may include rounding differences.																	

Postage 10004.001 Supplemental Workpaper 2 - Postage Forecast Adjustment Summary

	A	B	C	D	E	F	G	H	I	J	K	L
1		Postage Forecast Impacts				Postage Impact Due to Electric Meter Growth				Postage Impact Due to Rate Changes		
2		2017	2018	2019		2017	2018	2019		2017	2018	2019
3												
4	RICOH - Grouped Bills ¹	\$4,425	\$7,884	\$11,511		(\$71)	\$3,347	\$6,929		\$4,496	\$4,537	\$4,582
5	MPK - Bills & Notices ²	\$74,864	\$197,001	\$323,293		\$107,465	\$230,826	\$358,374		(\$32,601)	(\$33,825)	(\$35,081)
6												
7	Postage Forecast Impacts Bills & Notices³	\$79,289	\$204,885	\$334,804		\$107,394	\$234,173	\$365,303		(\$28,105)	(\$29,288)	(\$30,499)
8												
9		Postage Forecast Savings				Postage Savings Due to Electric Meter Growth				Postage Savings Due to Rate Changes		
10		2017	2018	2019		2017	2018	2019		2017	2018	2019
11												
12	My Account Suppressed Bills ⁴	(\$194,103)	(\$411,119)	(\$633,040)		(\$209,646)	(\$428,836)	(\$652,981)		\$15,543	\$17,717	\$19,941
13	Consolidator e-Bills Delivered ⁵	\$635	-\$2,612	-\$6,015		(\$1,308)	(\$4,587)	(\$8,024)		\$1,943	\$1,975	\$2,009
14												
15	Postage Forecast Savings e-Bills⁶	(\$193,468)	(\$413,731)	(\$639,055)		(\$210,954)	(\$433,423)	(\$661,005)		\$17,486	\$19,692	\$21,950
16												
17		Net Postage Forecast Impacts				Net Postage Impact Due to Electric Meter Growth				Net Postage Impact Due to Rate Changes		
18		2017	2018	2019		2017	2018	2019		2017	2018	2019
19												
20	Net Postage Forecast Impacts⁷	(\$114,179)	(\$208,846)	(\$304,251)		(\$103,560)	(\$199,250)	(\$295,702)		(\$10,619)	(\$9,596)	(\$8,549)
21												
22	<i>Note: Totals may include rounding differences.</i>											
23												
24	¹ See Row 38 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											
25	² See Row 45 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											
26	³ See Row 43 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											
27	⁴ See Row 40 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											
28	⁵ See Row 41 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											
29	⁶ See Row 46 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											
30	⁷ See Row 48 of Postage 10004.001 Supplemental Workpaper 1 - Historical and Forecast Data for calculations.											

Beginning of Workpaper
100005.000 - Branch Offices

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 6. Branch Offices
 Workpaper: 100005.000 - Branch Offices

Activity Description:

The Branch Office and Authorized Pay Location operations expenses cover the cost of providing payment collection and other services to those customers who prefer to be face-to-face for payments, service requests, and information.

Forecast Explanations:

Labor - Base YR Rec

A base year forecast method for TY 2019 for Branch Offices was used because the last recorded year accurately reflects the expense level associated with current departmental activity. In early 2016 a market job study was conducted by SDG&E Human Resources to evaluate and standardize the job profiles of the Energy Service Specialists (ESS's), and Energy Service Associates (ESA's) classifications to more accurately reflect the work performed by these classifications. This resulted in a compensation analysis and ESS/ESA salaries were adjusted upward effective July 2016. Therefore, the base year provides a reasonable starting point for future expenses.

Non-Labor - Base YR Rec

Same as above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		1,507	1,607	1,382	1,315	1,460	1,504	1,414	1,293	
Non-Labor		491	523	653	560	519	474	552	916	
NSE		0	0	0	0	0	0	0	0	
Total		1,998	2,131	2,035	1,875	1,979	1,978	1,966	2,209	
FTE		27.3	28.4	23.2	21.6	23.7	23.7	21.7	16.7	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 6. Branch Offices
Workpaper: 100005.000 - Branch Offices

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	1,460	1,460	1,460	44	-46	-167	1,504	1,414	1,293
Non-Labor	Base YR Rec	519	519	519	-45	33	397	474	552	916
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,979	1,979	1,979	-1	-13	230	1,978	1,966	2,209
FTE	Base YR Rec	23.7	23.7	23.7	0.0	-2.0	-7.0	23.7	21.7	16.7

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	44	0	0	44	0.0	1-Sided Adj	CAMIRKHI20170309111534780	
Explanation:		Salary Differential: Full year impact of salary adjustments for ESS's and ESA - Cashiers. Salary adjustment was effective 7/2016. Calculation: 20 ESS/ESA x (7/12 of 2080 hours or 1,210 hrs) = 24,200 hours 24,200 hours x average hourly rate increase of \$1.83 per ESS/ESA = \$44K							
2017	Other	0	-45	0	-45	0.0	1-Sided Adj	CAMIRKHI20170309111604377	
Explanation:		Non-labor adjustment: Reduction in non-labor for contracted resource support in the Branch Office lobbies. In BY 2016 SDG&E Branch Offices contracted resources to educate customers on the new technologies implemented in the branch offices, such as the qmatic machines, lobby computers, etc. and increase awareness of self service options.							
2017 Total		44	-45	0	-1	0.0			
2018	Other	44	0	0	44	0.0	1-Sided Adj	CAMIRKHI20170309111801643	
Explanation:		Salary Differential: Full year impact of salary adjustments for ESS's and ESA - Cashiers. Salary adjustment was effective 7/2016. Calculation: 20 ESS/ESA x (7/12 of 2080 hours or 1,210 hrs) = 24,200 hours 24,200 hours x average hourly rate increase of \$1.83 per ESS/ESA = \$44K							
2018	Other	0	-45	0	-45	0.0	1-Sided Adj	CAMIRKHI20170309112344793	
Explanation:		Non-labor adjustment: Reduction in non-labor for contracted resource support in the Branch Office lobbies. In BY 2016 SDG&E Branch Offices contracted resources to educate customers on the new technologies implemented in the branch offices, such as the qmatic machines, lobby computers, etc. and increase awareness of self service options.							
2018	FOF-Ongoing	-90	78	0	-12	-2.0	1-Sided Adj	CAMIRKHI20170309112520240	

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 6. Branch Offices
 Workpaper: 100005.000 - Branch Offices

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
Explanation:		Business Optimization: FOF labor and non-labor benefits and costs such as implementing self service kiosks throughout the Branch Offices.							
		Labor benefits: [-2 FTE's, -\$90K] Non-Labor Costs: \$78K for kiosk turn-key services, kiosk and bulk note acceptor annual maintenance agreements, and additional DSL lines/Telco costs.							
		Reference Capital Project ID # T-19001							
2018 Total		-46	33	0	-13	-2.0			
2019 Other		44	0	0	44	0.0	1-Sided Adj	CAMIRKHI20170309112556883	
Explanation:		Salary Differential: Full year impact of salary adjustments for ESS's and ESA - Cashiers. Salary adjustment was effective 7/2016. Calculation: 20 ESS/ESA x (7/12 of 2080 hours or 1,210 hrs) = 24,200 hours 24,200 hours x average hourly rate increase of \$1.83 per ESS/ESA = \$44K							
2019 Other		0	-45	0	-45	0.0	1-Sided Adj	CAMIRKHI20170309112630600	
Explanation:		Non-labor adjustment: Reduction in non-labor for contracted resource support in the Branch Office lobbies. In BY 2016 SDG&E Branch Offices contracted resources to educate customers on the new technologies implemented in the branch offices, such as the qmatic machines, lobby computers, etc. and increase awareness of self service options.							
2019 Other		150	130	0	280	1.0	1-Sided Adj	CAMIRKHI20170309113014447	
Explanation:		ADA Compliance: 1 FTE Program Manager at \$150K (PM3) and non-labor for consulting services, ADA training materials, brochures, and conference fees.							
2019 FOF-Ongoing		-361	312	0	-49	-8.0	1-Sided Adj	CAMIRKHI20170309112924087	
Explanation:		Business Optimization: FOF labor and non-labor benefits and costs such as implementing self service kiosks throughout the Branch Offices.							
		Labor benefits: [-8 FTE's, -\$361K]: Non-Labor Costs: \$312K for kiosk turn-key services, kiosk and bulk note acceptor annual maintenance agreements, and additional DSL lines/Telco costs.							
		Reference Capital Project ID # T-19001							
2019 Total		-167	397	0	230	-7.0			

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 6. Branch Offices
Workpaper: 100005.000 - Branch Offices

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,205	1,297	1,138	1,113	1,252
Non-Labor	479	517	652	559	519
NSE	0	0	0	0	0
Total	1,683	1,814	1,790	1,672	1,772
FTE	23.5	24.2	19.7	18.4	20.1
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	1,205	1,297	1,138	1,113	1,252
Non-Labor	479	517	652	559	519
NSE	0	0	0	0	0
Total	1,683	1,814	1,790	1,672	1,772
FTE	23.5	24.2	19.7	18.4	20.1
Vacation & Sick (Nominal \$)					
Labor	175	206	182	172	208
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	175	206	182	172	208
FTE	3.8	4.2	3.5	3.2	3.6
Escalation to 2016\$					
Labor	128	104	62	31	0
Non-Labor	12	7	1	1	0
NSE	0	0	0	0	0
Total	140	111	63	31	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,507	1,607	1,382	1,315	1,460
Non-Labor	491	523	653	560	519
NSE	0	0	0	0	0
Total	1,998	2,131	2,035	1,875	1,979
FTE	27.3	28.4	23.2	21.6	23.7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 6. Branch Offices
 Workpaper: 100005.000 - Branch Offices

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
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Note: Totals may include rounding differences.

Beginning of Workpaper
100006.000 - CCC Operations

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 7. Customer Contact Center Operations
 Workpaper: 100006.000 - CCC Operations

Activity Description:

The Customer Contact Center (CCC) Operations expenses cover the costs of answering customer telephone calls, responding to incoming email from customers, responding to customer inquiries through on-line chat features, answering written customer correspondence regarding customer account activity, following up on all California Public Utilities Commission(CPUC) telephone referrals and informal and formal customer complaints, and responding to other customer account related inquiries.

Forecast Explanations:

Labor - Base YR Rec

A base year forecast method for TY 2019 for CCC Operations labor and non-labor was used because the last recorded year accurately reflects the expense level associated with current departmental activity. The dynamics of various communication channels (phone, Interactive Voice Response (IVR), and web), progressive improvements in self-service, additional training of ESS's, additional focus on effective call handling, increased call volumes, level of service (LOS), average handle times (AHT), agent occupancy, shrinkage, and standardized call scripting collectively impact CCC Operations. Furthermore, in early 2016 a market job study was conducted by SDG&E Human Resources to evaluate and standardize job profiles of the Energy Service Specialists (ESS) classifications to more accurately reflect the work performed by these classifications. This resulted in a compensation analysis and ESS salaries were adjusted upward effective July 2016. Therefore, the base year provides a reasonable starting point for future expenses.

Non-Labor - Base YR Rec

See above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		9,175	9,351	8,424	7,972	8,896	9,089	9,113	9,805	
Non-Labor		361	389	272	98	41	-14	-242	292	
NSE		0	0	0	0	0	0	0	0	
Total		9,536	9,740	8,696	8,070	8,937	9,075	8,871	10,097	
FTE		166.5	173.2	155.3	144.7	158.8	157.1	156.9	168.3	

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 7. Customer Contact Center Operations
Workpaper: 100006.000 - CCC Operations

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	8,896	8,896	8,896	192	216	908	9,088	9,112	9,804
Non-Labor	Base YR Rec	41	41	41	-55	-283	251	-14	-242	292
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		8,937	8,937	8,937	137	-67	1,159	9,074	8,870	10,096
FTE	Base YR Rec	158.8	158.8	158.8	-1.7	-1.9	9.5	157.1	156.9	168.3

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	350	0	0	350	0.0	1-Sided Adj	CSCHRAMM20170309145207090	
Explanation:		Salary Differential - Energy Service Specialists (ESS) wage adjustment: Full year impact of ESS labor increase in salaries which were effective 7/2016.							
		Calculation: 142 ESS's x 1,210 hrs. (7/12 of 2080 hrs.) = 171,820 hrs. 171,820 hrs. x \$2.04 (avg. hrly. increase) = \$350K							
2017	Other	-78	0	0	-78	0.0	1-Sided Adj	CSCHRAMM20170309150715203	
Explanation:		Labor Reduction (overtime payout for non-exempt): Labor reduction of (\$78K) for one-time overtime payout (conversion from exempt to non-exempt).							
2017	Other	29	0	0	29	0.5	1-Sided Adj	CSCHRAMM20170309150957770	
Explanation:		Customer Growth - call volume increase: Labor increase due to call volumes associated with customer growth. Labor increase: ESS 0.5 FTE, \$29k Calculation: .53 FTE x 2080 hrs. x \$26.6 = \$29k							
2017	Other	-8	0	0	-8	-0.1	1-Sided Adj	CSCHRAMM20170309151246583	
Explanation:		Capital Project Impacts - IVR Enhancement: IVR Enhancement to add fumigation turn-off self-service. Reference Capital Project ID # T-19031. Labor savings: ESS (\$8K) and (.1) FTE Calculation: -.14 FTE x 2080 hrs x \$26.6 hr. = -\$8K							
2017	FOF-Ongoing	-101	-55	0	-156	-2.1	1-Sided Adj	CSCHRAMM20170309150616093	

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 7. Customer Contact Center Operations
 Workpaper: 100006.000 - CCC Operations

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
Explanation:		Business Optimization - FOF: Labor and non-labor benefits such as reducing calls to live agents, digitizing intake process and work orders for contract crews, simplifying credit payment options, combining email and chat, and contracting/procurement efficiencies.						
		Labor savings: (\$101K) FTE (2.1) Non-Labor savings: (\$55K) Labor savings: ESS (\$101K) FTE (2.1) Non-Labor savings: (\$55K)						
2017 Total		192	-55	0	137	-1.7		
2018	Other	350	0	0	350	0.0	1-Sided Adj	CSCHRAMM20170309151424320
Explanation:		Salary Differential - Energy Service Specialists (ESS) wage adjustment: Full year impact of ESS labor increase in salaries which were effective 7/2016.						
		Calculation: 142 ESS's x 1,210 hrs. (7/12 of 2080 hrs.) = 171,820 hrs. 171,820 hrs. x \$2.04 (avg. hrly. increase) = \$350K						
2018	Other	-78	0	0	-78	0.0	1-Sided Adj	CSCHRAMM20170309151558787
Explanation:		Labor Reduction (overtime payout for non-exempt): Labor reduction of (\$78K) for one-time overtime payout (conversion from exempt to non-exempt).						
2018	Other	66	0	0	66	1.2	1-Sided Adj	CSCHRAMM20170309151813033
Explanation:		Customer Growth - call volume increase: Labor increase due to call volumes associated with customer growth.						
		Labor increase: ESS 1.2 FTE, \$66K Calculation: 1.2 FTE x 2080 hrs. x \$26.6 hr. = \$66K						
2018	RAMP-Post Filing Incr	166	0	0	166	3.0	1-Sided Adj	CSCHRAMM20170511150053263
Explanation:		RAMP: RAMP-Post Filing: SDG&E Chapter 3 Employee Contractor, and Public Safety Mitigation: Customer Initiated Orders Relative to Public Safety Post Filing Mitigation Program Capture Customer Email. Program to update customer contact information - this mitigation would improve facility access processes such as supporting leakage survey and inspection of above ground pipeline. The cost is to provide additional time for ESS's to collect/verify email addresses for non-MyAccount customers and verify email addresses for My Account customers. Increase in overall AHT of 15 seconds. See CCC Operations 100006.000 Supplemental Workpaper 4 TY2019 Forecast Adjustment Calculations Summary for additional detail. (Reference Row 20)						
		Labor Increase: ESS \$166K FTE 3.0 Calculation: 3.0 FTEs x 2080 hrs x \$26.60/hr. = \$166K						

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 7. Customer Contact Center Operations
Workpaper: 100006.000 - CCC Operations

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>
2018	Other	-30	0	0	-30	-0.5	1-Sided Adj	CSCHRAMM20170309151848167
Explanation:		Capital Project Impacts - IVR Enhancement: IVR Enhancement to add fumigation turn-off self-service. Reference Capital Project ID # T-19031. See CCC Operations 100006.000 Supplemental Workpaper 4 - TY2019 Forecast Adjustment Calculations Summary for additional details. (Reference Row 22) Labor savings: ESS (\$30K) and (.5) FTE Calculation: $-.54 \text{ FTE} \times 2080 \text{ hrs.} \times \$26.6 = -\$30\text{K}$						
2018	FOF-Ongoing	-258	-283	0	-541	-5.6	1-Sided Adj	CSCHRAMM20170309151453003
Explanation:		Business Optimization - FOF: Labor and non-labor benefits such as reducing calls to live agents, digitizing intake process, simplifying credit payment options, combining email and chat, enhancing IVR outage information, and contracting/procurement efficiencies. Labor savings: (\$258K) FTE (5.6) Non-Labor savings: (\$283K) Labor savings: ESS (\$258K) FTE (5.6) Non-Labor savings: (\$283K)						
2018 Total		216	-283	0	-67	-1.9		

2019	Other	350	0	0	350	0.0	1-Sided Adj	CSCHRAMM20170309151922400
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Explanation: Salary Differential - Energy Service Specialists (ESS) wage adjustment: Full year impact of ESS labor increase in salaries which were effective 7/2016.

Calculation:
142 ESS's x 1,210 hrs. (7/12 of 2080 hrs.) = 171,820 hrs.
171,820 hrs. x \$2.04 (avg. hrly. increase) = \$350K

2019	Other	-78	0	0	-78	0.0	1-Sided Adj	CSCHRAMM20170309152031963
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Explanation: Labor Reduction (overtime payout for non-exempt): Labor reduction of (\$78K) for one-time overtime payout (conversion from exempt to non-exempt).

2019	Other	105	0	0	105	1.9	1-Sided Adj	CSCHRAMM20170309152850947
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Explanation: Customer Growth - call volume increase: Labor increase due to call volumes associated with customer growth. See CCC Operations Supplemental Workpaper 4 - TY2019 Forecast Adjustment Calculations Summary for additional details. (Reference Row 17)

Labor increase: ESS 1.9 FTE, \$105K
Calculation: $1.9 \times 2080 \text{ hrs.} \times \$26.60/\text{hr.} = \$105\text{K}$

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 7. Customer Contact Center Operations
 Workpaper: 100006.000 - CCC Operations

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj_Type	RefID
2019	Other	588	0	0	588	9.5	1-Sided Adj	CSCHRAMM20170628150753327
Explanation: Residential TOU Mass Default: Labor and FTE impact due to call volume increase associated with Residential TOU Mass Default. Labor costs and FTEs are normalized over 3 year GRC cycle. See CCC Operations 100006.000 Supplemental Workpaper 5 - Residential TOU Mass Default (CCC) for additional details. (Reference Cell G-38 and G-39) Forecast adjustment: \$588K labor 9.5 FTE's \$433K 7.8 ESS's \$155K 1.7 Supv. (MRR: ST3)								
2019	RAMP-Post Filing Incre	166	0	0	166	3.0	1-Sided Adj	CSCHRAMM20170511155830070
Explanation: RAMP: RAMP-Post Filing: SDG&E Chapter 3 Employee Contractor, and Public Safety Mitigation: Customer Initiated Orders Relative to Public Safety Post Filing Mitigation Program: Capture Customer Email. Program to update customer contact information - this mitigation would improve facility access processes such as supporting leakage survey and inspection of above ground pipeline. The cost is to provide additional time for ESS's to collect/verify email addresses for non-MyAccount customers and verify email addresses for My Account customers. Increase in overall AHT of 15 seconds. See CCC Operations 100006.000 Supplemental Workpaper 4 TY2019 Forecast Adjustment Calculations Summary for additional detail. (Reference Row 20) Labor Increase: ESS \$166K FTE 3.0 Calculation: 3.0 FTEs x 2080 hrs x \$26.60/hr. = \$166K								
2019	Other	83	0	0	83	1.5	1-Sided Adj	CSCHRAMM20170309153008797
Explanation: California Alternate Rates for Energy (CARE) enrollments by ESS: ESS to enroll customers in CARE via online application. See CCC Operations 100006.000 Supplemental Workpaper 4 - TY2019 Forecast Adjustment Calculations Summary for additional details. (Reference Row 21) Labor ESS \$83K FTE 1.5 Calculation: 1.5 FTE x 2080 hrs. x \$26.60/hr = \$83K								
2019	Other	-30	0	0	-30	-0.5	1-Sided Adj	CSCHRAMM20170309152926040
Explanation: Capital Project Impacts - IVR Enhancement: IVR Enhancement to add fumigation turn-off self-service. Reference Capital Project ID # T-19031. See CCC Operations 100006.000 Supplemental Workpaper 4 - TY2019 Forecast Adjustment Calculations Summary for additional details. (Reference Row 22) Labor savings: ESS (\$30K) and (.5) FTE Calculation: -.54 FTE x 2080 hrs. x \$26.6 = -\$30K								
2019	FOF-Ongoing	-276	251	0	-25	-5.9	1-Sided Adj	CSCHRAMM20170309152007200

Note: Totals may include rounding differences.

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 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 7. Customer Contact Center Operations
 Workpaper: 100006.000 - CCC Operations

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>
Explanation:		Business Optimization - FOF: Labor and non-labor benefits and costs such as driving repeat credit callers to self service, creating consistency for payment arrangement options across ESS's, IVR, and Web, combining email and chat in one platform, digitizing intake process and work orders for contract crews, enhancing outage communication and self service, optimizing credit and outage calls, implementing Case Management System for complaint resolution, and contracting/procurement efficiencies.						
		Labor savings: (\$276K) FTE (5.9)						
		Non-labor costs: \$251K						
2019 Total		908	251	0	1,159	9.5		

Note: Totals may include rounding differences.

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Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 7. Customer Contact Center Operations
Workpaper: 100006.000 - CCC Operations

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	7,342	7,523	6,990	6,856	7,860
Non-Labor	352	384	272	98	41
NSE	0	0	0	0	0
Total	7,693	7,908	7,262	6,953	7,901
FTE	138.9	145.0	132.1	122.2	136.6
Adjustments (Nominal \$) **					
Labor	-7	24	-53	-110	-229
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	-7	24	-53	-110	-229
FTE	4.5	2.4	-0.4	0.9	-2.2
Recorded-Adjusted (Nominal \$)					
Labor	7,334	7,547	6,937	6,746	7,631
Non-Labor	352	384	272	98	41
NSE	0	0	0	0	0
Total	7,686	7,932	7,210	6,843	7,671
FTE	143.4	147.4	131.7	123.1	134.4
Vacation & Sick (Nominal \$)					
Labor	1,063	1,197	1,108	1,042	1,266
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	1,063	1,197	1,108	1,042	1,266
FTE	23.2	25.8	23.6	21.5	24.4
Escalation to 2016\$					
Labor	778	607	378	185	0
Non-Labor	9	5	0	0	0
NSE	0	0	0	0	0
Total	787	612	379	185	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	9,175	9,351	8,424	7,972	8,896
Non-Labor	361	389	272	98	41
NSE	0	0	0	0	0
Total	9,536	9,740	8,696	8,070	8,937
FTE	166.6	173.2	155.3	144.6	158.8

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 7. Customer Contact Center Operations
Workpaper: 100006.000 - CCC Operations

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	-7	24	-53	-110	-229
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	-7	24	-53	-110	-229
FTE	4.5	2.4	-0.4	0.9	-2.2

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-70	0	0	-0.8	CCTR Transf To 2100-0712.000	CSCHRAMM20161016130334083
Explanation: Transfer Business Planning labor and FTE associated with Business Advisor function from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-0712 in work paper group 1AG001 to align costs where Business Planning activity/function resides.							
2012	Other	-210	0	0	-2.5	CCTR Transf To 2100-3518.000	CSCHRAMM20161016130531880
Explanation: Transfer labor and FTE associated with Complaint Resolution Supervisor, Project Mgmt II, Quality Observation Spec, Service Coordinator, Training Coordinator and CCC Ops Supp Analyst from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3512 in work paper group 100007 CCC Support to align costs where activity/functions resides.							
2012	Other	273	0	0	7.8	CCTR Transf From 2100-3515.000	CSCHRAMM20161016130707377
Explanation: Transfer labor and FTE associated with Energy Services Spec I, and Energy Services Specialist Trainees from cost center 2100-3512 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.							
2012 Total		-7	0	0	4.5		

2013	Other	-132	0	0	-2.1	CCTR Transf To 2100-3518.000	CSCHRAMM20161016131428533
Explanation: Transfer labor and FTE associated with Complaint Resolution Supervisor, Level of Services Forecasting Spec, Project Mgr., Sr Business Analyst, Service Coordinator and Training Coordinator from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where activity/function resides.							
2013	Other	156	0	0	4.5	CCTR Transf From 2100-3515.000	CSCHRAMM20161016132051030
Explanation: Transfer labor and FTE associated with Energy Services Spec I, and Energy Services Specialist Trainees from cost center 2100-3515 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.							

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 7. Customer Contact Center Operations
 Workpaper: 100006.000 - CCC Operations

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2013 Total		24	0	0	2.4		
2014	Other	-87	0	0	-1.2	CCTR Transf To 2100-3516.000	CSCHRAMM20161016133350963
Explanation:		Transfer labor and FTE associated with Complaint Resolution Supervisor, Level of Service, Sr. Business Analyst, Service Coordinator, Training Coordinator and Technical Advisor from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3516 in work paper group 100007 CCC Support to align costs where activity/function resides.					
2014	Other	35	0	0	0.8	CCTR Transf From 2100-3516.000	CSCHRAMM20161016133617967
Explanation:		Transfer labor and FTE associated with Energy Services Specialist from cost center 2100-3516 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.					
2014 Total		-53	0	0	-0.4		
2015	Other	-270	0	0	-3.0	CCTR Transf To 2100-3518.000	CSCHRAMM20161016135635410
Explanation:		Transfer labor and FTE associated with Complaint Resolution Supervisor, Ops Assistance, Level of Services Forecast Specialist, Project Mgmt II, Staff Assistant, Technical Advisor from cctr 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where activity/function resides.					
2015	Other	160	0	0	3.9	CCTR Transf From 2100-3515.000	CSCHRAMM20161016135732283
Explanation:		Transfer labor and FTE associated with Energy Services Spec I from cost center 2100-3515 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.					
2015 Total		-110	0	0	0.9		
2016	Other	-229	0	0	-2.2	CCTR Transf To 2100-3518.000	CSCHRAMM20170216155018270
Explanation:		Transfer labor associated with Complaint Resolution Analyst Complaint Resolution Supervisor, and Project Mgr. to cost center 2100-3518 in WP group 100007 CCC Support to align activities where function resides.					
2016 Total		-229	0	0	-2.2		

Note: Totals may include rounding differences.

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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
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Workpaper: 100006.000 - CCC Operations

RAMP Item # 1

Ref ID: CSCHRAMM20170511134512103

RAMP Chapter: SDG&E-3

Program Name: Call Center Volume Relative to Public Safety

Program Description: Emergency calls taken by the Customer Contact Center.

Risk/Mitigation:

Risk: Employee, Contractor, and Public Safety

Mitigation: Customer initiated orders relative to public safety.

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	930	940	940
High	1,116	1,128	1,139

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 371

Explanation: Emergency calls taken by the Customer Contact Center including emergency outage calls. Note: RAMP Ranges included labor overheads.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
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Workpaper: 100006.000 - CCC Operations

RAMP Item # 2

Ref ID: CSCHRAMM20170511134556813

RAMP Chapter: SDG&E-3

Program Name: Customer Contact Center (CCC) Emergency Call Training

Program Description: Emergency call training and situational practice relative to both gas and electric.

Risk/Mitigation:

Risk: Employee, Contractor, and Public Safety

Mitigation: Mandatory employee training programs and standardized policies are in place.

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	21	21	21
High	25	25	25

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 20

Explanation: Emergency Call training of 5 hrs per ESS.

Supplemental Workpapers for Workpaper 100006.000

CCC Operations 100006.000 Supplemental Workpaper 1 - Historical Performances

	A	B	C	D	E	F	G	H
1		2012	2013	2014	2015	2016	5-year average	Comments
2	Transaction Statistics							
3	ESS-ans w/ VH	2,127,497	2,066,645	1,833,573	1,587,919	1,490,751	1,821,277	ESS-handled calls including virtual holds
4	IVR SS w/ Pay-by-Phone (PbP)	580,180	590,176	671,349	785,249	819,676	689,326	IVR self-service transactions including pay-by-phone
5	Web and Mobile Self Service (SS)	63,620	171,461	176,147	1,094,708	1,158,408	532,869	Started capturing additional self-service transactions via web and My Account in 2015: billing and account updates, rate enrollments, goals and alerts subscriptions, letters of credit and residence.
6	Email	156,330	62,209	50,711	70,394	88,442	85,617	The large reduction in email from 2012 to 2013 was due to the automation/transfer of Web Enabled Channel (WEX) to Web SS. ESS stopped processing customer requests in KANA for Turn-on, Shut-off, Appliance Service Order requests. Those requests became Web SS transactions.
7	Chat	0	4,295	8,905	11,731	10,190	7,024	Started offering Chat in 2013.
8	Abandoned	91,789	98,530	105,316	472,746	463,453	246,367	
9	Unoffered calls for closed hours			20,840	51,947	61,045	44,611	Non-emergency calls answered during closed hours, excluded from self-service calculation
10	ESS-ans w/ Virtual Hold (VH) + Interactive Voice Response (IVR) SS	2,707,677	2,656,821	2,504,922	2,373,168	2,310,427	2,510,603	
11	ESS-ans w/ VH + IVR SS w/ Pbp + Web and Mobile SS	2,771,297	2,828,282	2,681,069	3,467,876	3,468,835	3,043,472	
12	ESS-ans w/ VH + IVR SS w/PbP + Email + Chat	2,864,007	2,723,325	2,564,538	2,455,293	2,409,059	2,603,244	
13								
14	Transaction rate per Electric Meter							
15	Electric Meters (EM)	1,397,678	1,405,218	1,412,939	1,421,829	1,430,175	1,413,568	Exhibit SDG&E-38 Customer Forecast Electric Witness: Kenneth Schiermeyer
16	ESS-ans w/ VH per EM	1.52	1.47	1.30	1.12	1.04	1.29	
17	IVR SS calls w/ PbP per EM	0.42	0.42	0.48	0.55	0.57	0.49	
18	Web and Mobile SS per EM	0.05	0.12	0.12	0.77	0.81	0.37	
19	Email per EM	0.11	0.04	0.04	0.05	0.06	0.06	
20	Chat per EM	0.00	0.00	0.01	0.01	0.0071	0.00	
21	Unoffered calls for closed hours per EM					0.0427		
22								
23								
24	Performance Metrics							
25	IVR & Web SS rate	21.58%	25.50%	31.86%	55.04%	58.05%		PbP were not included in 2012 and 2013. Total self-service rate equals sum of (IVR SS w/PbP and Web SS) divided by the sum of (IVR SS w/PbP, Web SS and CSR-ans w/ VH minus unoffered calls)
26	Average Handle Time (AHT)	273	274	294	327	363	306	Calculated values from Data Warehouse (DW) LOS table.
27	ESS Level of Service (LOS)	64.96%	68.86%	65.28%	27.63%	25.42%	50.43%	ESS LOS. Calculated values from DW LOS table.
28	ESS&IVR LOS	71.63%	75.04%	73.82%	47.60%	47.46%	63.11%	ESS and IVR LOS. Calculated values from DW LOS table.
29	Occupancy	87.27%	87.85%	86.33%	90.67%	91.85%	88.79%	
30	Abandoned rate	4.14%	4.55%	5.43%	22.94%	23.72%	12.16%	Abandoned calls divided by the sum of (Abandoned and CSR-ans w/ VH)
31	Shrinkage		30.53%			32.02%		Shrinkage value re-evaluated in 2016. Use 2016 shrinkage value for forecast.
32								

CCC Operations 10006.000 Supplemental Workpaper 2 - Call Volume Forecast

	A	B	C	D	E	F
1	Base-year forecast method: Apply 2016 individual "transactions per electric meter" to forecasted electric meters to obtain transaction volumes.					
2						
3	Transactions Forecast					
4		2016 actual	2017 fcst	2018 fcst	2019 fcst	Comment
5	Electric Meters (EM)	1,430,175	1,440,919	1,454,331	1,468,391	Exhibit SDG&E-38 Customer Forecast Electric Witness: Kenneth Schiermeyer
6	ESS-ans w/ VH per EM	1.04	1.04	1.04	1.04	
7	IVR SS w/ PbP per EM	0.57	0.57	0.57	0.57	
8	Web and Mobile SS per EM	0.81	0.81	0.81	0.81	
9	Email per EM	0.06	0.06	0.06	0.06	
10	Chat per EM	0.0071	0.0071	0.0071	0.0071	
11	Unoffered calls for closed hours per EM	0.0427	0.0427	0.0427	0.0427	
12						
13	ESS-ans w/ VH	1,490,751	1,501,950	1,515,930	1,530,586	Used for e-Workforce Management (eWFM) simulations
14	IVR SS	819,676	825,834	833,520	841,579	
15	Web and Mobile SS	1,158,408	1,167,110	1,177,974	1,189,362	
16	Email	88,442	89,106	89,936	90,805	
17	Chat	10,190	10,267	10,362	10,462	
18	ESS-ans w/ VH + IVR SS + Web and Mobile SS	3,468,835	3,494,894	3,527,424	3,561,527	
19	Unoffered calls for closed hours	61,045	61,504	62,076	62,676	
20						
21	Performance Metrics					
22		2016 actual	2017 fcst	2018 fcst	2019 fcst	
23	IVR & Web SS rate	58.05%	58.00%	58.00%	58.00%	
24	AHT	363	360	360	360	Used for eWFM simulations
25	ESS LOS	25.42%	70.00%	70.00%	70.00%	Used for eWFM simulations
26	ESS&IVR LOS	47.46%	77.00%	77.00%	77.00%	
27	Occupancy	91.85%	85.00%	85.00%	85.00%	Used for eWFM simulations
28	Abandoned rate	23.72%	5.00%	5.00%	5.00%	
29	Shrinkage	32.02%	32.02%	32.02%	32.02%	Used for eWFM simulations

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CCC Operations 100006.000 Supplemental Workpaper 3 - e-Workforce Management FTE Requirements

	A	B	C	D	E	F	G	H	I	J	
1	Preparation for and recording e-Workforce Management (eWFM) runs:										
2	1. Determine 2016 monthly ESS-ans w/ VH										
3	2. Forecast monthly answered calls for 2017, 2018 and 2019 based on forecasted meter growth										
4	3. Provide the LOS team with the list of eWFM test cases including monthly offered calls, target AHT, ESS LOS, occupancy and shrinkage										
5	4. Evaluate eWFM results										
6	5. Summarize eWFM run results										
7	6. Use eWFM results to validate staffing requirements										
8											
9	Step 1: Determine 2016 monthly answered and offered calls										
10		ESS-ans w/ VH									
11	Month	2016									
12	Jan	112,469									
13	Feb	118,875									
14	Mar	125,085									
15	Apr	117,703									
16	May	115,980									
17	Jun	123,707									
18	Jul	117,074									
19	Aug	138,272									
20	Sep	132,939									
21	Oct	135,097									
22	Nov	127,111									
23	Dec	126,439									
24	Total	1,490,751									
25											
26	Step 2: Calculate monthly call volumes from 2016 base year for 2017 fcst, 2018 fcst, 2019 fcst.										
27		ESS-ans w/ VH									
28	Month	2016	2017 FCST	2018 FCST	2019 FCST						
29	Jan	112,469	113,314	114,369	115,474						
30	Feb	118,875	119,768	120,883	122,051						
31	Mar	125,085	126,025	127,198	128,427						
32	Apr	117,703	118,587	119,691	120,848						
33	May	115,980	116,851	117,939	119,079						
34	Jun	123,707	124,636	125,796	127,013						
35	Jul	117,074	117,954	119,051	120,202						
36	Aug	138,272	139,311	140,607	141,967						
37	Sep	132,939	133,938	135,184	136,491						
38	Oct	135,097	136,112	137,379	138,707						
39	Nov	127,111	128,066	129,258	130,508						
40	Dec	126,439	127,389	128,575	129,818						
41	Total	1,490,751	1,501,950	1,515,930	1,530,586						
42											
43	Steps 3, 4, 5: Summarize eWFM Test cases and Results										
44	Test cases	Call volume	AHT	Targeted ESS LOS	Occupancy	Shrinkage	eWFM FTE requirement	Email & Chat support	Special Service Desk	Total ESS requirement	
45	ESS-answered w/ VH										
46	2016 Actual	1,490,751	363	70.00%	85.00%	32.02%	137.00	3	4	144.0	
47	2017 FCST	1,501,950	360	70.00%	85.00%	32.02%	138.00	3	4	145.0	
48	2018 FCST	1,515,930	360	70.00%	85.00%	32.02%	139.00	3	4	146.0	
49	2019 FCST	1,530,586	360	70.00%	85.00%	32.02%	140.00	3	4	147.0	

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CCC Operations 100006.000 Supplemental Workpaper 4 - TY2019 Forecast Adjustment Calculations Summary

	A	B	C	D	E	F	G
1	Process for calculating FTE and cost changes by initiatives:						
2	1. For the TY2019 before any upward/downward pressures, the ESS FTE requirements were validated by the eWFM simulation based on a set of input for call volume, AHT, LOS, occupancy and shrinkage.						
3	2. For initiatives that impact call volume or Average Handle Time (AHT), FTE impact is calculated by dividing the total "call*seconds" change by the "FTE productivity call*seconds".						
4	3. For initiatives that do not impact call volume or Average Handle Time (AHT), estimates are entered for FTE and forecast adjustment						
5	4. TY2019 Forecast Adjustments are presented in Table 2						
6							
7							
8	Table 1						
9		Call volume	AHT in seconds	LOS	FTE requirements	TY2019 Forecast (\$000)	Comments
10	TY2019 ESS eWFM simulation	1,530,587	360	70%	140		ESS FTE only validated by eWFM simulation, does not include Email & Chat Support or Special Services Desk. See CCC Operations 100006.000 Supplemental Workpaper 3 - e-Workforce Management FTE Requirements for additional detail. (Reference cells B49, C49, D49, and G49)
11	2016 Base Year (Total Labor/Non-Labor)				158.8	\$8,937	2016 BY includes labor, non-labor, and FTE associated with CCC Operations.
12							
13	Table 2						
14	Forecast Adjustment Description	(A) Change in call volume	(B) Change in AHT in seconds	(C) = (A) * (B) Change in call*seconds	(D) = (C) / (FTE productivity in secs) FTE change	TY2019 Forecast Adjustment (\$000)	Comments
15	ESS salary differential					\$350	ESS average hourly rate increased by \$2.04 per hour, which was effective 7/2016. Full year effect of ESS hourly rate increase of \$350K. Calculation: 142 ESSs x 1,210 hrs. (7/12 of 2080 hrs.) = 171,820 hrs. 171,820 hrs. x \$2.04 (avg. hrly. increase) = \$350k
16	One-time non-recurring overtime payment					(\$78)	One-time non-recurring overtime payment to associate supervisors
17	Customer Growth	39,836	363	14,466,748	1.9	\$105	Customer Growth - call volume increase.
18	Residential TOU Mass Default (ESS)	117,133	500	58,566,500	7.8	\$433	Residential TOU Mass Default: Labor and FTE's impact due to call volume increase associated with Residential TOU Mass Default. Labor costs and FTEs are normalized over 3 year GRC cycle. See CCC Operations 100006.000 Supplemental Workpaper 5 - Residential TOU Mass Default (CCC) for additional detail. Forecast adjustment: \$588k labor 10.6 FTEs \$433k 7.8 ESSs
19	Residential TOU Mass Default (Supervision)				1.7	\$155	\$155k 1.7 Supv. (MRR: ST3)
20	RAMP: RAMP-Post Filing: Capture or verify email addresses.	1,053,335	21	22,436,036	3.0	\$166	RAMP: RAMP-Post Filing: SDG&E Chapter 3 Employee, Contractor, and Public Safety Mitigation: Customer Orders Relative to Public Safety Post Filing Mitigation Program: Capture or verify email addresses
21	CARE enrollment	20,000	550	11,000,000	1.5	\$83	ESS to enroll CARE customers
22	IVR fumigation turn-off self-service	(10,000)	409	(4,090,000)	(0.5)	(\$30)	Capital Project Impacts: Implement fumigation turn-off self-service functionality on IVR, divert 10000 calls to self-service annually. Reference Capital Project #19031.
23	Business Optimization (FOF)				(5.9)	(\$25)	Business Optimization (FOF) include both labor and non-labor benefits and costs for driving repeat credit callers to self service; creating consistency for payment arrangement options across ESSs, IVR, and Web; combining email and chat in one platform; digitizing intake process and work orders for contract crews; enhancing outage communication and self service, optimizing credit and outage calls; implementing Case Management System for complaint resolution; and contracting/procurement efficiencies.
24							
25	Changes				9.5	\$1,159	
26	TY2019 Forecast				168.3	\$10,096	

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CCC Operations 10006.000 Supplemental Workpaper 5 - Residential TOU Mass Default

	A	B	C	D	E	F	G	
1	Data and Assumptions:							
2	1	1.27 million residential customers in 2016						
3	2	120,000 TOU default pilot in one month in 2018 (March 2018)						
4	3	800,000 TOU mass default in 10 months in 2019 (March 2019 through December 2019)						
5	4	5% of customers will call pre default						
6	5	Rates of customer who call forecasted at 50% in 2018 and 2019, 30% in 2020, and 20% in 2021						
7	6	AHT = 500 seconds						
8	7	ST3 supervisor salary = \$93K						
9	8	150 ESS trained to take calls during the Default Pilot						
10								
11								
12								
13	Description		2018 Default Pilot	2019 Mass Default	2020 Mass Default	2021 Mass Default	2019-2021 Average	
14	Billing inquiry							
15		TOU Default start	Mar-18	Mar-19	Jan-20	Jan-21		
16		TOU Default end	Mar-19	Dec-19	Dec-20	Dec-21		
17		TOU default customers	120,000	800,000	1,050,000	1,050,000		
18		Forecasted billing calls	60,000	400,000	315,000	210,000		
19		Pre-existing billing calls	0	233,171	233,171	233,171		
20		AHT (in seconds)	500	500	500	500		
21		Existing AHT (in seconds)	0	410	410	410		
22		Handle time (in hours)	8,333	29,000	17,194	2,611		
23		ESS cost (@ \$26.60 per hour)	\$221,667	\$771,399	\$457,371	\$69,455		
24	Training							
25		Number of ESS specialists	150	150	150	150		
26		Total Training time hours (5 hrs per specialist)	750	0	0	0		
27		ESS cost (@ \$26.60 per hour)	\$19,950	\$0	\$0	\$0		
28	Supervision				0	0		
29		Supervision using ST3	1	2	2	1		
30		Supervision cost (\$93K for ST3)	\$93,000	\$186,000	\$186,000	\$93,000		
31	Summary							
32		Billing, training ESS cost	\$241,617	\$771,399	\$457,371	\$69,455	\$432,742	
33		FTE equivalent	4.4	13.9	8.3	1.3	7.8	
34		Supervision cost	\$93,000	\$186,000	\$186,000	\$93,000	\$155,000	
35		FTE equivalent	1.0	2.0	2.0	1.0	1.7	
36								
37							Total	
38						Labor	\$587,742	
39						FTE	9.5	

**Beginning of Workpaper
100007.000 - CCC Support**

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 8. Customer Contact Center Support
 Workpaper: 100007.000 - CCC Support

Activity Description:

Customer Contact Center (CCC) Support work group activities include resource planning and scheduling, technology support, training, quality assurance, policy and procedures support, planning and analysis functions, and clerical support. In addition it also includes the costs associated with software licensing and maintenance and telephone expenses.

Forecast Explanations:

Labor - Base YR Rec

A base year forecast method was used for labor and non-labor because the last recorded year accurately reflects the expense level associated with current departmental activity. Furthermore, while labor has remained constant over the years, non-labor has fluctuated due to technological implementation for new and/or outdated systems. Therefore, the base year provides a reasonable starting point for future expenditures.

Non-Labor - Base YR Rec

See above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		1,471	1,503	1,485	1,541	1,512	1,479	1,417	1,366	
Non-Labor		912	1,023	972	1,050	1,278	1,230	1,264	1,314	
NSE		0	0	0	0	0	0	0	0	
Total		2,383	2,526	2,458	2,590	2,790	2,709	2,681	2,680	
FTE		20.8	21.2	20.9	21.2	20.1	19.7	18.6	17.6	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 8. Customer Contact Center Support
Workpaper: 100007.000 - CCC Support

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	1,512	1,512	1,512	-33	-95	-146	1,479	1,417	1,366
Non-Labor	Base YR Rec	1,278	1,278	1,278	-49	-15	35	1,229	1,263	1,313
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		2,790	2,790	2,790	-82	-110	-111	2,708	2,680	2,679
FTE	Base YR Rec	20.1	20.1	20.1	-0.4	-1.5	-2.5	19.7	18.6	17.6

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	FOF-Ongoing	-33	-49	0	-82	-0.4	1-Sided Adj	CSCHRAMM20170309155157917	
Explanation:		Business Optimization: FOF labor and non-labor benefits such as combining email and chat under one platform. Labor Savings: (\$33K) Non-Labor Savings (\$49K)							
2017 Total		-33	-49	0	-82	-0.4			
2018	FOF-Ongoing	-95	-15	0	-110	-1.5	1-Sided Adj	CSCHRAMM20170309155544647	
Explanation:		Business Optimization: FOF labor and non-labor benefits and costs such as combining email and chat under one platform and implementing online training in the CCC. Labor Savings: (\$95K) Non-Labor Savings (\$15K)							
2018 Total		-95	-15	0	-110	-1.5			
2019	FOF-Ongoing	-146	35	0	-111	-2.5	1-Sided Adj	CSCHRAMM20170309160017490	
Explanation:		Business Optimization: FOF labor and non-labor benefits and costs such as combining email and chat under one platform and implementing online training in the CCC. Labor Savings: (\$146K) Non-Labor Costs: \$35K							
2019 Total		-146	35	0	-111	-2.5			

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 8. Customer Contact Center Support
Workpaper: 100007.000 - CCC Support

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,239	1,135	1,177	1,200	1,067
Non-Labor	889	907	946	1,048	1,278
NSE	0	0	0	0	0
Total	2,128	2,042	2,123	2,248	2,346
FTE	23.2	19.5	17.6	18.9	14.8
Adjustments (Nominal \$) **					
Labor	-63	78	46	103	229
Non-Labor	0	103	26	0	0
NSE	0	0	0	0	0
Total	-63	181	72	103	229
FTE	-5.3	-1.5	0.2	-1.0	2.2
Recorded-Adjusted (Nominal \$)					
Labor	1,176	1,213	1,223	1,304	1,297
Non-Labor	889	1,010	971	1,048	1,278
NSE	0	0	0	0	0
Total	2,065	2,223	2,195	2,352	2,575
FTE	17.9	18.0	17.8	17.9	17.0
Vacation & Sick (Nominal \$)					
Labor	170	192	195	201	215
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	170	192	195	201	215
FTE	2.9	3.2	3.2	3.1	3.1
Escalation to 2016\$					
Labor	125	98	67	36	0
Non-Labor	23	13	1	2	0
NSE	0	0	0	0	0
Total	148	111	68	37	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,471	1,503	1,485	1,541	1,512
Non-Labor	912	1,023	972	1,050	1,278
NSE	0	0	0	0	0
Total	2,383	2,526	2,458	2,590	2,790
FTE	20.8	21.2	21.0	21.0	20.1

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 8. Customer Contact Center Support
Workpaper: 100007.000 - CCC Support

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	-63	78	46	103	229
Non-Labor	0	103	26	0	0
NSE	0	0	0	0	0
Total	-63	181	72	103	229
FTE	-5.3	-1.5	0.2	-1.0	2.2

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	210	0	0	2.5	CCTR Transf From 2100-0013.000	CSCHRAMM20161016130531880
Explanation:		Transfer labor and FTE associated with Complaint Resolution Supervisor, Project Mgmt II, Quality Observation Spec, Service Coordinator, Training Coordinator and CCC Ops Supp Analyst from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3512 in work paper group 100007 CCC Support to align costs where activity/functions resides.					
2012	Other	-273	0	0	-7.8	CCTR Transf To 2100-0013.000	CSCHRAMM20161016130707377
Explanation:		Transfer labor and FTE associated with Energy Services Spec I, and Energy Services Specialist Trainees from cost center 2100-3512 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.					
2012 Total		-63	0	0	-5.3		
2013	Other	132	0	0	2.1	CCTR Transf From 2100-0013.000	CSCHRAMM20161016131428533
Explanation:		Transfer labor and FTE associated with Complaint Resolution Supervisor, Level of Services Forecasting Spec, Project Mgr., Sr Business Analyst, Service Coordinator and Training Coordinator from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where activity/function resides.					
2013	Other	-156	0	0	-4.5	CCTR Transf To 2100-0013.000	CSCHRAMM20161016132051030
Explanation:		Transfer labor and FTE associated with Energy Services Spec I, and Energy Services Specialist Trainees from cost center 2100-3515 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.					
2013	Other	0	60	0	0.0	CCTR Transf From 2100-3167.000	CSCHRAMM20161012145206283
Explanation:		Transfer non-labor costs associated with Live Chat from cost center 2100-3167 in work paper group 11N003 Marketing, Research, & Analytics to cost center 2100-0019 in work paper group 100007 CCC Support to align costs where activity/function resides.					

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 8. Customer Contact Center Support
Workpaper: 100007.000 - CCC Support

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2013	Other	0	43	0	0.0	CCTR Transf From 2200-0404.000	TNGUYEN20161205163028967
Explanation: Transfer SDG&E portion of Aspect Expense from cost center 2200-0404 in work paper group 200001 CCC-Support to cost center 2100-0019 in work paper group 100007 CCC-Support SDG&E to align costs where activity/function resides.							
2013	Other	101	0	0	0.9	CCTR Transf From 2100-3455.000	CCHRAMM20161016200603567
Explanation: Transfer Customer Contact Center Support - Project Manager II labor, FTE, and associated non-labor costs from cost center 2100-3455 in work paper group 11N004 Customer Programs, Pricing, and Other Office to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where CCC Project Manager activity/function resides.							
2013 Total		78	103	0	-1.5		
2014	Other	87	0	0	1.2	CCTR Transf From 2100-0013.000	CCHRAMM20161016133350963
Explanation: Transfer labor and FTE associated with Complaint Resolution Supervisor, Level of Service, Sr. Business Analyst, Service Coordinator, Training Coordinator and Technical Advisor from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3516 in work paper group 100007 CCC Support to align costs where activity/function resides.							
2014	Other	0	26	0	0.0	CCTR Transf From 2100-3167.000	CCHRAMM20161012145626680
Explanation: Transfer non-labor costs associated with Live Chat from cost center 2100-3167 in work paper group 11N003 Marketing, Research, & Analytics to cost center 2100-0019 in work paper group 100007 CCC Support to align costs where activity/function resides.							
2014	Other	-35	0	0	-0.8	CCTR Transf To 2100-0013.000	CCHRAMM20161016133617967
Explanation: Transfer labor and FTE associated with Energy Services Specialist from cost center 2100-3516 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.							
2014	Other	-75	0	0	-0.8	CCTR Transf To 2100-0712.000	CCHRAMM20161016133703373
Explanation: Transfer Business Planning labor and FTE associated with Business Advisor function from cost center 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-0712 in work paper group 1AG001.000 to align costs where Business Planning function resides.							
2014	Other	68	0	0	0.6	CCTR Transf From 2100-3455.000	CCHRAMM20161016204004613
Explanation: Transfer Customer Contact Center Support - Project Manager II labor, FTE, and associated non-labor costs from 2100-3455 in work paper group 11N004 Customer Programs, Pricing, and Other Office to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where CCC Project Manager activity/function resides.							
2014 Total		46	26	0	0.2		

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 8. Customer Contact Center Support
 Workpaper: 100007.000 - CCC Support

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2015	Other	-7	0	0	-0.1	CCTR Transf From 2100-3455.000	CSCHRAMM20161016205430347
Explanation: Transfer Customer Contact Center Support - Project Manager II labor, FTE and associated non-labor costs from 2100-3455 in work paper group 11N004 Customer Programs, Pricing, and Other Office to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where CCC Project Manager activity/function resides.							
2015	Other	270	0	0	3.0	CCTR Transf From 2100-0013.000	CSCHRAMM20161016135635410
Explanation: Transfer labor and FTE associated with Complaint Resolution Supvisor, Ops Assistance, Level of Services Forecast Specialist, Project Mgmt II, Staff Assistant, Technical Advisor from cctr 2100-0013 in work paper group 100006 CCC Operations to cost center 2100-3518 in work paper group 100007 CCC Support to align costs where activity/function resides.							
2015	Other	-160	0	0	-3.9	CCTR Transf To 2100-0013.000	CSCHRAMM20161016135732283
Explanation: Transfer labor and FTE associated with Energy Services Spec I from cost center 2100-3515 in work paper group 100007 CCC Support to cost center 2100-0013 in work paper group 100006 CCC Operations to align costs where activity/function resides.							
2015 Total		103	0	0	-1.0		
2016	Other	229	0	0	2.2	CCTR Transf From 2100-0013.000	CSCHRAMM20170216155018270
Explanation: Transfer labor associated with Complaint Resolution Analyst Complaint Resolution Supervisor, and Project Mgr. to cost center 2100-3518 in WP group 100007 CCC Support to align activities where function resides.							
2016 Total		229	0	0	2.2		

Note: Totals may include rounding differences.

Beginning of Workpaper
100008.000 - Customer Operations Support & Projects

San Diego Gas & Electric Company
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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 9. Customer Operations Support & Projects
 Workpaper: 100008.000 - Customer Operations Support & Projects

Activity Description:

The Customer Operation Support (COS) and Projects expenses cover the costs to support the delivery of major Customer Service projects and initiatives, maintenance and production support for existing technology, and business integration of technology. COS provides support for many of the key systems within the Customer Services organization such as Customer Information System (CISCO), My Account, Centralized Calculation Engine (CCE), C3 vendor support for online rate and bill comparison tools for medium and large business customers, and Customer Relationship Management (CRM) to name a few. Daily operational support responsibilities include the triaging and resolution of issues reported by the business organizations, business defects/enhancements prioritizations, requirements development, and user acceptance testing. In addition to the daily operational support, the team also supports the Project Management Office (PMO) for capital projects as subject matter experts (SMEs) of the systems.

Forecast Explanations:

Labor - Base YR Rec

A a base year forecast method for TY 2019 for Customer Operation Support and Projects labor and non-labor was used because the last recorded year accurately reflects the expense level associated with current departmental activity. Labor increased in 2016 because to the transition of ongoing Dynamic Pricing support to O&M. Therefore, the base year provides a reasonable starting point for future expenditures.

Non-Labor - Base YR Rec

See above.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		3,790	3,235	2,738	2,642	3,005	3,148	3,436	3,436	
Non-Labor		77	72	32	259	114	135	169	169	
NSE		0	0	0	0	0	0	0	0	
Total		3,867	3,306	2,770	2,901	3,120	3,283	3,605	3,605	
FTE		45.1	38.1	32.0	28.1	31.5	33.4	36.2	36.2	

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 9. Customer Operations Support & Projects
 Workpaper: 100008.000 - Customer Operations Support & Projects

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	3,005	3,005	3,005	142	430	430	3,147	3,435	3,435
Non-Labor	Base YR Rec	114	114	114	20	54	54	134	168	168
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		3,120	3,120	3,120	162	484	484	3,282	3,604	3,604
FTE	Base YR Rec	31.4	31.4	31.4	2.0	4.8	4.8	33.4	36.2	36.2

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	142	0	0	142	2.0	1-Sided Adj	CAMIRKHI20170309052151577	
Explanation:		Full Year Labor Impact: 2 FTE; \$142K fullyear cumulative impact due to timing of backfilling various vacancies and/or employee's returning from disability leaves.							
2017	Other	0	20	0	20	0.0	1-Sided Adj	CAMIRKHI20170309052235827	
Explanation:		Employee Development: Conferences and trainings.							
2017 Total		142	20	0	162	2.0			
2018	Other	142	0	0	142	2.0	1-Sided Adj	CAMIRKHI20170309052320250	
Explanation:		Full Year Labor Impact: 2 FTE; \$142K fullyear cumulative impact due to timing of backfilling various vacancies and/or employee's returning from disability leaves.							
2018	Other	0	20	0	20	0.0	1-Sided Adj	CAMIRKHI20170309052338480	
Explanation:		Employee Development: Conferences and trainings.							
2018	Other	97	3	0	100	0.8	1-Sided Adj	CAMIRKHI20170309052829237	
Explanation:		Project Growth - Business Requirements: Business Architect to align business goals and priorities with decisions regarding projects, applications/systems, processes, and capabilities across the organization. (MRR AD4; 0.8FTE; \$97K labor; \$3K in associated non-labor)							
2018	Other	89	3	0	92	1.0	1-Sided Adj	CAMIRKHI20170309052944613	
Explanation:		Capital Project Impacts: GRC Ph 2 Support. Reference Capital Project ID # T-19007. (MRR SA5; 1 FTE; \$89K labor; \$3K associated non-labor)							
2018	Other	102	3	0	105	1.0	1-Sided Adj	CAMIRKHI20170309053016703	

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

San Diego Gas & Electric Company
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Non-Shared Service Workpapers

Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 9. Customer Operations Support & Projects
 Workpaper: 100008.000 - Customer Operations Support & Projects

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>RefID</u>
Explanation: Capital Project Impacts: CCE Ph 3 Support. Reference Capital Project ID # T-16047. (MRR AD2; 1 FTE; \$102K labor; \$3K associated non-labor)								
2018	Other	0	25	0	25	0.0	1-Sided Adj	CAMIRKHI20170309053236317
Explanation: Software Licensing Fees - per user fees								
2018 Total		430	54	0	484	4.8		
2019	Other	142	0	0	142	2.0	1-Sided Adj	CAMIRKHI20170309053313113
Explanation: Full Year Labor Impact: 2 FTE; \$142K fullyear cumulative impact due to timing of backfilling various vacancies and/or employee's returning from disability leaves.								
2019	Other	0	20	0	20	0.0	1-Sided Adj	CAMIRKHI20170309053337003
Explanation: Employee Development: Conferences and trainings.								
2019	Other	97	3	0	100	0.8	1-Sided Adj	CAMIRKHI20170309053415573
Explanation: Project Growth - Business Requirements: Business Architect to align business goals and priorities with decisions regarding projects, applications/systems, processes, and capabilities across the organization. (MRR AD4; 0.8FTE; \$97K labor; \$3K in associated non-labor)								
2019	Other	89	3	0	92	1.0	1-Sided Adj	CAMIRKHI20170309053548800
Explanation: Capital Project Impacts: GRC Ph 2 Support. Reference Capital Project ID # T-19007. (MRR SA5; 1 FTE; \$89K labor; \$3K associated non-labor)								
2019	Other	102	3	0	105	1.0	1-Sided Adj	CAMIRKHI20170309053614200
Explanation: Capital Project Impacts: CCE Ph 3 Support. Reference Capital Project ID # T-16047. (MRR AD2; 1 FTE; \$102K labor; \$3K associated non-labor)								
2019	Other	0	25	0	25	0.0	1-Sided Adj	CAMIRKHI20170309053642240
Explanation: Software Licensing Fees - per user fees								
2019 Total		430	54	0	484	4.8		

Note: Totals may include rounding differences.

SDG&E/CS - OFFICE OPERATIONS/Exh No:SDG&E-18-WP/Witness: J. Stewart

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Witness: Jerry D. Stewart
Category: A. Customer Service Office Operations
Category-Sub: 9. Customer Operations Support & Projects
Workpaper: 100008.000 - Customer Operations Support & Projects

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	3,013	3,144	2,688	2,183	2,571
Non-Labor	68	66	33	259	109
NSE	0	0	0	0	0
Total	3,081	3,211	2,721	2,443	2,679
FTE	38.8	41.1	33.9	23.4	26.5
Adjustments (Nominal \$) **					
Labor	16	-534	-433	52	7
Non-Labor	7	5	-1	0	6
NSE	0	0	0	0	0
Total	23	-529	-434	51	13
FTE	0.1	-8.7	-6.8	0.5	0.1
Recorded-Adjusted (Nominal \$)					
Labor	3,030	2,611	2,255	2,235	2,578
Non-Labor	75	71	32	259	114
NSE	0	0	0	0	0
Total	3,105	2,682	2,287	2,494	2,692
FTE	38.9	32.4	27.1	23.9	26.6
Vacation & Sick (Nominal \$)					
Labor	439	414	360	345	428
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	439	414	360	345	428
FTE	6.3	5.7	4.9	4.2	4.8
Escalation to 2016\$					
Labor	321	210	123	61	0
Non-Labor	2	1	0	0	0
NSE	0	0	0	0	0
Total	323	211	123	62	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	3,790	3,235	2,738	2,642	3,005
Non-Labor	77	72	32	259	114
NSE	0	0	0	0	0
Total	3,867	3,306	2,770	2,901	3,120
FTE	45.2	38.1	32.0	28.1	31.4

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 9. Customer Operations Support & Projects
 Workpaper: 100008.000 - Customer Operations Support & Projects

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	16	-534	-433	52	7
Non-Labor	7	5	-1	-0.444	6
NSE	0	0	0	0	0
Total	23	-529	-434	51	13
FTE	0.1	-8.7	-6.8	0.5	0.1

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-169	0	0	-1.9	CCTR Transf To 2100-3935.000	CSCHRAMM20161018172216517
Explanation: Transfer labor and FTE associated with IT Quality Assurance function from cost center 2100-0642 (Customer Operations Technology Mgr.) in work paper group Customer Operations Support & Projects to cost center 2100-3935 (IT Quality Assurance) in work paper group 11T001 IT Applications NSS to align costs where activity/function resides.							
2012	Other	68	2	0	0.7	CCTR Transf From 2100-3593.000	CSCHRAMM20161012142543497
Explanation: Transfer labor, FTE, and associated non-labor for Project Manager function from cost center 2100-3593 in work paper group 11N003 Marketing, Research, & Analytics to cost center 2100-3576 in work paper group 100008 Customer Operations Support and Projects to align costs where activity/function resides.							
2012	Other	0	5	0	0.0	CCTR Transf From 2100-3574.000	CSCHRAMM20161004163050040
Explanation: Transfer office services cost from 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2012	Other	118	0	0	1.3	CCTR Transf From 2100-3584.000	CTRINH20161116081011527
Explanation: Adjustment Due To Re-Org Of Service Order Routing Technology (SORT) Team. Transfer CSF Support labor and FTE from cost center 2100-3584 in work paper group 1FC004 CSF Support to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align historical costs where activity/function resides.							
2012 Total		16	7	0	0.1		

2013	Other	-13	0	0	-0.2	CCTR Transf To 2100-0712.000	CSCHRAMM20161016143941010
Explanation: Transfer labor and FTE associated with Business Planner role from cost center 2100-3477 in work paper group 100008 Customer Operations Support and Projects to cost center 2100-0712 in work paper group 1AG001 Controller - Png & Reg Accts. to align costs where Business Planning functions reside.							

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 9. Customer Operations Support & Projects
 Workpaper: 100008.000 - Customer Operations Support & Projects

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2013	Other	0	6	0	0.0	CCTR Transf From 2100-3574.000	CSCHRAMM20161004163235597
Explanation: Transfer office services cost from cost center 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align costs where activity/function resides.							
2013	Other	-444	-2	0	-7.6	CCTR Transf To 2100-0009.000	CSCHRAMM20161018170329940
Explanation: Transfer labor, FTE, and non-labor costs associated with Customer Account Verification (CAV) Billing functions from cost center 2100-3477 in work paper group 100008 Customer Operations Support & Projects to cost center 2100-0009 in work paper group 100002 Billing to align costs where activity/function resides.							
2013	Other	-120	0	0	-1.4	CCTR Transf To 2100-3935.000	CSCHRAMM20161018172332293
Explanation: Transfer labor and FTE associated with IT Quality Assurance function from cost center 2100-0642 (Customer Operations Technology Mgr.) in work paper group Customer Operations Support & Projects to cost center 2100-3935 (IT Quality Assurance) in work paper group 1IT001 IT Applications NSS to align function/activity where it resides.							
2013	Other	43	0	0	0.5	CCTR Transf From 2100-3584.000	CTRINH20161116081142197
Explanation: Adjustment Due To Re-Org Of SORT Team. Transfer CSF Support labor from cost center 2100-3584 in work paper group 1FC004.000 CSF Support to cost center 2100-3576 in work paper group 100008.000 Customer Operations Support & Projects to align historical costs where the activity/function resides.							
2013 Total		-534	5	0	-8.7		
2014	Other	0	4	0	0.0	CCTR Transf From 2100-3574.000	CSCHRAMM20161004163354897
Explanation: Transfer office services non-labor from cost center 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2014	Other	-421	-5	0	-6.7	CCTR Transf To 2100-0009.000	CSCHRAMM20161018170501967
Explanation: Transfer labor, FTE, and non-labor costs associated with Customer Account Verification (CAV) Billing functions from cost center 2100-3477 in work paper group 100008 Customer Operations Support & Projects to cost center 2100-0009 in work paper group 100002 Billing to align costs where activity/function resides.							
2014	Other	-45	0	0	-0.5	CCTR Transf To 2100-3935.000	CSCHRAMM20161018172043997
Explanation: Transfer labor/FTE associated with IT Quality Assurance function from cost center 2100-0642 (Customer Operations Technology Mgr.) in WP Group Customer Operations Support & Projects to cost center 2100-3935 (IT Quality Assurance) in WP Group 1IT001 IT Applications NSS to align function/activity where it resides.							
2014	Other	33	0	0	0.4	CCTR Transf From 2100-3584.000	CTRINH20161116081225853

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
 Witness: Jerry D. Stewart
 Category: A. Customer Service Office Operations
 Category-Sub: 9. Customer Operations Support & Projects
 Workpaper: 100008.000 - Customer Operations Support & Projects

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
Explanation: Adjustment Due To Re-Org Of SORT Team. Transfer CSF Support labor and FTE from cost center 2100-3584 in work paper group 1FC004.000 CSF Support to cost center 2100-3576 in work paper group 100008.000 Customer Operations Support & Projects to align historical costs where the activity/function resides.							
2014 Total		-433	-1	0	-6.8		
2015	Other	47	0	0	0.4	CCTR Transf From 2100-3480.000	CSCHRAMM20161016144407983
Explanation: Transfer Project Mgr labor and FTE from cost center 2100-3480 in work paper group 100002 Billing to cost center 2100-3576 in work paper group 100008 Customer Operations Support and Projects to align costs where function resides.							
2015	Other	0	7	0	0.0	CCTR Transf From 2100-3574.000	CSCHRAMM20161004163517240
Explanation: Transfer office services non-labor from cost center 2100-3574 in work paper group 100001 Advanced Metering Operations to cost center 2100-3576 in workpaper group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2015	Other	0	-8	0	0.0	CCTR Transf To 2100-0009.000	CSCHRAMM20161018170806407
Explanation: Transfer non-labor costs related to Customer Account Verification (CAV) Billing functions from cost center 2100-3477 in work paper group 100008 Customer Operations Support & Projects to cost center 2100-0009 in work paper group 00002 Billing to align costs where activity/function resides.							
2015	Other	5	0	0	0.1	CCTR Transf From 2100-3584.000	CTRINH20161116081312557
Explanation: Adjustment Due To Re-Org Of SORT Team. Transfer CSF Support labor and FTE from cost center 2100-3584 in work paper group 1FC004.000 CSF Support to cost center 2100-3576 in work paper group 100008.000 Customer Operations Support & Projects to align historical costs where the activity/function resides.							
2015 Total		52	0	0	0.5		
2016	Other	0	6	0	0.0	CCTR Transf From 2100-3574.000	CSCHRAMM20170206135546753
Explanation: Transfer office services non-labor costs from 2100-3574 in work group Advanced Metering Operations 100001 to cost center 2100-3576 in work group 100008 Customer Operations Support & Projects to align costs where activity resides.							
2016	Other	7	0	0	0.1	CCTR Transf From 2100-3480.000	CSCHRAMM20170223134435707
Explanation: Transfer labor and FTE associated with project manager role from cost center 2100-3480 in work paper group 100002 Billing to cost center 2100-3576 in work paper group 100008 Customer Operations Support & Projects to align function/activity where it resides.							
2016 Total		7	6	0	0.1		

Note: Totals may include rounding differences.

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart

Appendix A: List of Non-Shared Cost Centers

Cost Center	Sub	Description
2100-0008	000	CUSTOMER BILLING RESOURCES MGR
2100-0009	000	CUSTOMER BILLING MGR
2100-0011	000	METER READING SUPPORT 1
2100-0013	000	CCC SAN DIEGO MANAGER
2100-0016	000	BRANCH OFFICE MANAGER
2100-0019	000	CCC TECHNOLOGY SDGE
2100-0021	000	ACCOUNT MANAGEMENT
2100-0022	000	ACCOUNT RESEARCH
2100-0023	000	METER REVENUE PROTECTION SDGE
2100-0026	000	CUSTOMER REMITTANCE PROCESSING MANAGER
2100-0035	000	ELECTRIC METERING OPERATIONS
2100-0042	000	CENTRAL OPS - MEASUREMENT OPERATIONS
2100-0330	000	ALLOWANCE FOR UNCOLLECTIBLES
2100-0395	000	POSTAGE - CUSTOMER BILLS
2100-0642	000	CUSTOMER OPERATIONS TECHNOLOGY MANAGER
2100-0648	000	METER READING OPERATIONS STAFF
2100-0649	000	MTR READING SUPPORT
2100-0717	000	QUALITY ASSURANCE
2100-3467	000	ELECTRIC METERING ENGINEERING
2100-3470	000	POLICY & STRATEGY MANAGER
2100-3471	000	TRAINING SUPERVISOR
2100-3472	000	METER READING GRP 3 - BEACH CITIES
2100-3477	000	BILLING OPERATIONS SUPPORT MGR
2100-3479	000	SUPV 3
2100-3480	000	CUST OPS SOUTH DIR
2100-3482	000	BRANCH OFFICE PAYSTATIONS
2100-3484	000	BRANCH OFFICE OPERATIONS
2100-3485	000	BRANCH OFFICE SATELLITES
2100-3486	000	AUTHORIZED PAYMENT LOCATIONS
2100-3488	000	CUST OPS SOUTH LVC
2100-3489	000	MAJOR MARKETS CREDIT & COLLECTIONS
2100-3490	000	CREDIT & COLL MGR
2100-3512	000	CCC LOS SAN DIEGO
2100-3513	000	CCC PLANNING & ANALYSIS
2100-3514	000	CCC SPECIAL SERVICES SAN DIEGO
2100-3515	000	CS TRAINING & DEVELOPMENT (SDGE)
2100-3516	000	OPS SUPPORT SDGE
2100-3517	000	QUALITY ASSURANCE SDGE
2100-3518	000	CCC PLANNING & ANALYSIS SDGE
2100-3547	000	AMO PROJECT SUPPORT
2100-3549	000	METER READING ACCESS SUPPORT
2100-3556	000	AMO PROJECTS
2100-3571	000	ADVANCED METERING OPERATIONS MANAGER
2100-3574	000	AMI PROGRAM OFFICE DIRECTOR
2100-3575	000	AMI TECHNOLOGIES

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Area: CS - OFFICE OPERATIONS
Witness: Jerry D. Stewart

Appendix A: List of Non-Shared Cost Centers

Cost Center	Sub	Description
2100-3576	000	AMI CLIENT INTERFACE
2100-3577	000	AMI STAKEHOLDER EDUCATION
2100-3598	000	ELECTRIC METERING TRAINING
2100-3620	000	AMI INSTALLATIONS
2100-3622	000	CONTRACTS & COMPLIANCE MANAGER
2100-3635	000	METER READING GROUP 7
2100-3637	000	MANAGER OF REMITTANCE PROCESSING
2100-3639	000	AMO C&I DEPLOYMENT PROJECT
2100-3779	000	CENTRALIZED OPS - SYSTEM OPERATIONS
2100-3780	000	CENTRAL OPS NETWORK & SYSTEMS SUPPORT
2100-3782	000	BILLING OPERATIONS SUPPORT - SMART METER
2100-3811	000	CUSTOMER OPS SUPPORT
2100-3844	000	VP CUSTOMER OPERATIONS
2100-3891	000	SMART MTR OPS CENTER
2100-3938	000	BUSINESS REQUIREMENTS & GOVERNANCE