Application of SAN DIEGO	GAS & ELECTRIC)
COMPANY for authority to	update its gas and electric)
revenue requirement and ba	se rates)
effective January 1, 2016	(U 902-M)	,

Application No. 14-11-003

Exhibit No.: (SDG&E-37-R-WP)

REVISED

WORKPAPERS TO PREPARED

DIRECT TESTIMONY OF

SANDRA K. HRNA

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

MARCH 2015



PROPOSED POST-TEST YEAR RATEMAKING MECHANISM - SDG&E

A. TOTAL REVENUE REQUIREMENT

This post-test year ("PTY") ratemaking mechanism proposes to adjust 2016 test-year ("TY") authorized revenue requirement in the PTY's 2017, and 2018 for:

- 1. Labor and non-labor costs based on IHS Global Insight's forecast (Section B.1.),
- 2. Medical costs based on the Towers Watson forecast (Section B.2), and
- 3. Capital investments impact on rate base (Section C).

The base margin amounts adopted in SDG&E's 2016 TY are from the testimony of SDG&E witness Khai Nguyen (Exhibit SDG&E-36-R) and utilized throughout these workpapers. Table 1 below summarizes the total revenue requirement associated with SDG&E's PTY ratemaking mechanism including Miscellaneous Revenues and Franchise Fees & Uncollectible ("FF&U").

Table 1

Line No.	Description (\$ in millions)	PTY – 2017*	PTY - 2018*
1	Total O&M Margin (excluding Medical and FFU)	\$702.3	\$719.6
2	Medical Expense	29.4	31.6
3	Capital Related Costs (Depreciation, Taxes, Return)	1,186.9	1,263.0
4	Total $(L1 + L2 + L3)$	1,918.5	2,014.2
5	FF&U (Electric =3.70%, Gas=2.29%)	64.3	64.9
6	Total Base Margin (L4 + L5)	1,982.8	2,079.1
7	Miscellaneous Revenues	19.2	19.2
8	Total Revenue Requirement (L6 + L7)	\$2,002.0	\$2,098.3
9	Revenue Requirement Increase \$	\$96.6	\$96.3
10	Revenue Requirement Increase %	5.07%	4.81%
	*Differences due to rounding.		

B. OPERATION & MAINTENANCE ("O&M") EXPENSES

The starting base for O&M escalation is the 2016 Test Year revenue requirement excluding miscellaneous revenues, capital related margin, medical expense, and FF&U ("O&M Margin"). O&M expenses are determined in total for the electric distribution, electric generation and gas departments. Medical costs are escalated separately.

1. Escalation of O&M, excluding medical: For simplicity in calculating PTY escalation, a gas and electric O&M utility input price index ("GEOMPI") is used to adjust O&M expenses to reflect the expected cost inflation of goods and services that SDG&E will incur to serve its customers. The calculation of GEOMPI is described in Mr. Scott Wilder's testimony (Exhibit SDG&E-33). The PTY O&M revenue requirement prior to FF&U gross up is calculated below in Table 2 (differences due to rounding):

Line No.	O&M Expense Adjustment (\$ in millions)	TY-2016	2017	2018
1	Prior Year O&M Margin		\$684.6	\$702.3
2	O&M Escalation Rate		2.58%	2.46%
3	Attrition-year O&M Escalation (L1* L2)		\$17.6	\$17.3
4	O&M Expense (L1+ L3)	\$684.6	\$702.3	\$719.6

2. Escalation of Medical Costs: Medical costs adopted in SDG&E's 2016 test year will be escalated annually using the Towers Watson medical escalation projections as described in the direct testimony of SDG&E witness Ms. Debbie Robinson (Exhibit SDG&E-22). The associated revenue requirement prior to FF&U gross up is calculated in Table 3 below (differences due to rounding):

Table 3

Line No.	Medical Cost Adjustment (\$ in millions)	TY-2016	2017	2018
1	Prior Year Medical Expense		\$27.2	\$29.4
2	Medical Escalation Rate		7.8%	7.8%
3	Attrition-year Medical Escalation (L1* L2)		\$2.1	\$2.3
4	Medical Expense (L1+ L3)	\$27.2	\$29.4	\$31.6

C. CAPITAL-RELATED

1. This section describes the development of PTY plant additions and other PTY rate base changes to determine the capital-related revenue requirement (authorized returns, depreciation expense, taxes and gross ups) for the electric distribution ("ED"), electric generation ("EG") and gas distribution ("GD") departments. The recorded (2010-2012) plant additions are taken from historically recorded rate base. The recorded (2013) and forecasted (2014-2016) rate base components, plant additions and plant retirements are from the testimony and workpapers of SDG&E witness Mr. Jesse S. Aragon (Exhibit SDG&E-27-R-CWP). SDG&E escalates the average of 2010-2016 capital additions to determine PTY capital additions. Incremental depreciation and amortization reserve and deferred taxes are also calculated to determine the rate base for the attrition-year. The change in year-over-year rate base is used to calculate the capital costs components of the revenue requirement. The capital-related revenue requirement is shown in Table 4 below (differences due to rounding):

Table 4

Line No.	Capital-Related Attrition (\$ in millions)	TY-2016	2017	2018
1	Prior Year Capital-Related Costs		\$1,110.8	\$1,186.9
2	Capital-Related Attrition		76.1	76.1
3	Capital-Related Costs (L1+ L2)	\$1,110.8	\$1,186.9	\$1,263.0

The development of the PTY rate base and the derivation of individual revenue requirement components are described in detail below.

- 2. Weighted Average (WAVG) Rate Base (Tables 5, 7, 9): The starting point in developing WAVG rate base for each attrition-year is the prior year plant-in-service, accumulated depreciation reserve and accumulated amortization reserve. WAVG plant additions are added and capital retirements are subtracted to determine net plant additions. Changes to the net depreciation and net amortization reserve and accumulated deferred tax reserve are calculated as further described below.
 - a) Weighted Net Plant Additions
 - 1) Plant additions (Table 6, 8, 10: Lines 10, 11-13) for the PTY are calculated using a seven-year period of recorded (2010-2013) and forecasted (2014-2016) capital additions. Each year is escalated to 2016 dollars and then averaged. The seven-year average is then escalated to 2017 and 2018 dollars using Global Insight indices, as described in the testimony of Scott Wilder (Exhibit SDG&E-33).
 - 2) Plant retirements (Table 6, 8, 10: Lines 10, 14-16) for the PTY are calculated using a three-year period of forecasted (2014-2016) capital retirements. Each year is escalated to 2016 dollars and then averaged. The three-year average is then escalated to 2017 and 2018 dollars using Global Insight indices, as described in the testimony of Scott Wilder (Exhibit SDG&E-33).
 - 3) WAVG Net Plant Additions (Table 6, 8, 10: Lines 1-3, 17): Each PTY's WAVG net plant additions is calculated using the ratio of the prior year WAVG net plant additions balance to the prior year end of year (EOY) net plant additions balance multiplied by the attrition-year's EOY net plant additions.
 - b) Change in Accumulated Depreciation Reserve (Tables 6, 8, 10: Lines 4-6): Each PTY's WAVG net depreciation reserve is calculated using the ratio of the prior year WAVG net depreciation reserve to the prior year EOY net depreciation reserve multiplied by the attrition-year's EOY net depreciation reserve. Net depreciation reserve includes annual retirements, cost of removal and salvage.
 - c) Change in Net Amortization Reserve (Tables 6, 8, 10: Lines 7-9): Each PTY's WAVG net amortization reserve is calculated using the ratio of the prior year WAVG net amortization reserve to the prior year EOY net amortization reserve multiplied by the attrition-year's EOY net amortization reserve.
 - d) Change in Accumulated Deferred Tax Reserve (Tables 5, 7, 9: Line 11): Each PTY's WAVG accumulated deferred tax is calculated by multiplying the average of the estimated year over year percentage change in the accumulated deferred tax balances (2014-2015 and 2015-2016) excluding the impact of bonus depreciation (Table 13: Lines 1-3) by the test year WAVG accumulated deferred tax.

- e) Working Capital and Other (Tables 5, 7, 9: Lines 3-7): SDG&E is not proposing to change the rate base elements of Fuel in Storage, Materials and Supplies, Working Cash, and Customer Advances for Construction from the test year 2016 amounts.
- f) Allocation of Electric General Plant and Common Plant (Tables 5, 7: Lines 14-15): To calculate the allocations of Electric General Plant and Common Plant from ED to EG for each PTY, SDG&E uses the ratio (from Table 5) of prior year allocated Electric General Plant to the plant-in-service multiplied by the attrition-year plant-in-service. Similarly, SDG&E uses the ratio (from Table 5) of prior year allocated Common Plant to the plant-in-service multiplied by the attrition-year plant-in-service. The resulting allocations are transferred to EG in Table 7.

The resulting WAVG Depreciated Rate Base is used to calculate the capital-related revenue requirement (authorized returns, depreciation expense, taxes and gross ups) for the ED, EG and GD departments as described in Section C.3. below.

San Diego Gas and Electric Company 2016 GRC – Revised March 2015 Non-Shared Service Workpapers San Diego Gas and Electric Company WEIGHTED AVERAGE DEPRECIATED RATE BASE ELECTRIC DISTRIBUTION

			2016 RO	Model		2017-2018 Att	rition Year
		Source: Witne	ss: Jesse S. Ara	gon / Exhibit SI	OG&E-27-R		
		Recorded			Test	PTY	PTY
Line		Year	Estimate	d Year	Year	AY	AY
No.	Account Description	2013	2014	2015	2016	2017	2018
	Fixed Capital						
1	Plant-in-Service	5,838,012	6,257,981	6,797,493	7,309,255	7,815,942	8,302,779
2	Total Fixed Capital	5,838,012	6,257,981	6,797,493	7,309,255	7,815,942	8,302,779
	Working Capital						
3	Fuel in Storage						
4	Materials & Supplies	35,933	38,098	38,818	39,665	39,665	39,665
5	Working Cash	-	-	_	119,813	119,813	119,813
6	Total Working Capital	35,933	38,098	38,818	159,478	159,478	159,478
	Other						
7	Customer Advances For Construction	(14,720)	(25,264)	(26,978)	(27,159)	(27,159)	(27,159)
8	Total Other	(14,720)	(25,264)	(26,978)	(27,159)	(27,159)	(27,159)
	Deductions For Reserves						
9	Accumulated Depreciation Reserve	2,398,023	2,527,379	2,673,704	2,829,417	2,994,485	3,170,381
10	Accumulated Amortization Reserve	125,429	162,559	211,205	266,905	324,781	386,455
11	Accumulated Deferred Taxes	399,947	389,423	426,273	399,597	379,165	359,777
12	Total Deductions For Reserves	2,923,400	3,079,361	3,311,182	3,495,920	3,698,431	3,916,613
13	Weighted Average Depreciated Rate Base	2,935,826	3,191,455	3,498,150	3,945,653	4,249,830	4,518,485
14	Allocated Electric General		(8,518)	(8,526)	(8,571)	(9,165)	(9,736)
15	Allocated Common	_	(13,686)	(16,512)	(18,301)	(19,570)	(20,789)
16	Total Weighted Average Rate Base	_	3,169,251	3,473,112	3,918,782	4,221,095	4,487,961

Table 6

San Diego Gas and Electric Company WAVG Rate Base Support: Capital Additions, Capital Retirements, Net Depreciation and Amortization Reserve ELECTRIC DISTRIBUTION (Thousands of Dollars)

		2016 RO Model 2017-2018 Attrition Year								
Line		201	16		2017			2018		
	Description	End of Year	WAVG	End of Year	WAVG	WAVG Increase	End of Year	WAVG	WAVG Increase	
	Plant-in-Service									
1	Beginning of the Year	7,057,107	7,057,107	7,588,087	7,588,087	530,980	8,067,910	8,067,910	479,823	
2	Net Plant Additions	530,980	252,148	479,823	227,855	(24,293)	494,594	234,869	7,014	
3	Total	7,588,087	7,309,255	8,067,910	7,815,942	506,687	8,562,504	8,302,779	486,837	
	Accumulated Depreciation Reserve									
4	Beginning of the Year	2,747,595	2,747,595	2,906,991	2,906,991	159,396	3,077,437	3,077,437	170,445	
5	Net Depreciation Reserve	159,396	81,822	170,445	87,494	5,672	181,062	92,944	5,450	
6	Total	2,906,991	2,829,417	3,077,437	2,994,485	165,068	3,258,499	3,170,381	175,895	
	Accumulated Amortization Reserve									
7	Beginning of the Year	238,643	238,643	294,559	294,559	55,916	354,351	354,351	59,792	
8	Net Amortization Reserve	55,916	28,262	59,792	30,222	1,959	63,517	32,104	1,882	
9	Total	294,559	266,905	354,351	324,781	57,875	417,868	386,455	61,675	
			Reco	orded		Forecast		PTY	<u> </u>	
		2010 (2010\$)	2011 (2011\$)	2012 (2012\$)	2013 (2013\$)	2014 (2014\$)	2015 (2015\$)	2016 (2016\$)	2017	2018
10	Escalation Rates to 2016\$	17.120%	12.296%	8.541%	6.012%	4.415%	2.116%	0.000%	2.338%	3.078%
11	Capital Additions (Table 11)	458,807	352,196	436,433	380,272	691,961	539,756	618,475		
12	Capital Additions (2016\$)	537,357	395,501	473,709	403,132	722,512	551,177	618,475		
13	Capital Additions 7-Year Average							528,838	541,203	557,864
14	Capital Retirements (Table 12)					63,162	50,515	62,399		
15	Capital Retirements (2016\$)					65,951	51,584	62,399		
16	Capital Retirements 3-Year Average						, -	59,978	61,380	63,270
17	Net Plant Additions for Ratebase								479,823	494,594

San Diego Gas and Electric Company 2016 GRC – Revised March 2015 Non-Shared Service Workpapers San Diego Gas and Electric Company WEIGHTED AVERAGE DEPRECIATED RATE BASE

ELECTRIC GENERATION

	·			2017-2018 Attrition Year			
		Source: Witne	ss: Jesse S. Ara	gon / Exhibit Sl	DG&E-27-R		
		Recorded			Test	PTY	PTY
Line		Year	Estimate	d Year	Year	AY	AY
No.	Account Description	2013	2014	2015	2016	2017	2018
]	Fixed Capital						
1 1	Plant-in-Service	950,786	978,972	995,970	1,005,258	1,042,731	1,117,567
2	Total Fixed Capital	950,786	978,972	995,970	1,005,258	1,042,731	1,117,567
,	Working Capital						
3	Fuel in Storage						
4	Materials & Supplies	23,306	49,662	65,231	65,927	65,927	65,927
5	Working Cash	-	-	-		-	-
6	Total Working Capital	23,306	49,662	65,231	65,927	65,927	65,927
	Other						
_	Customer Advances For Construction	-	<u>-</u>	<u>-</u>		<u>-</u>	_
8 _	Total Other	-		-	<u> </u>	-	
-	Deductions For Reserves						
9 .	Accumulated Depreciation Reserve	259,104	292,904	329,686	367,164	405,823	446,601
10	Accumulated Amortization Reserve	-	1	3	6	8	10
_	Accumulated Deferred Taxes	45,718	49,758	58,724	63,936	71,162	79,205
12	Total Deductions For Reserves	304,822	342,663	388,414	431,105	476,993	525,816
13	Weighted Average Depreciated Rate Base	669,270	685,972	672,787	640,080	631,665	657,678
14	Allocated Electric General		8,518	8,526	8,571	9,165	9,736
15	Allocated Common	_	13,686	16,512	18,301	19,570	20,789
16	Total Weighted Average Rate Base	_	708,175	697,826	666,952	660,399	688,202

Table 8

San Diego Gas and Electric Company WAVG Rate Base Support: Capital Additions, Capital Retirements, Net Depreciation and Amortization Reserve ELECTRIC GENERATION (Thousands of Dollars)

		2016 RO	Model	2017-2018 Attrition Year					
Line		201	6		2017			2018	
No.	Description	End of Year	WAVG	End of Year	WAVG	WAVG Increase	End of Year	WAVG	WAVG Increase
	Plant-in-Service								
1	Beginning of the Year	1,001,211	1,001,211	1,010,491	1,010,491	9,280	1,084,413	1,084,413	73,922
2	Net Plant Additions	9,280	4,047	73,922	32,240	28,193	76,019	33,155	915
3	Total	1,010,491	1,005,258	1,084,413	1,042,731	37,472	1,160,432	1,117,567	74,837
4	Accumulated Depreciation Reserve	249 200	249 200	296 162	296 162	27.052	425 520	425 520	20.267
4	Beginning of the Year Net Depreciation Reserve	348,209 37,953	348,209 18,954	386,162 39,367	386,162 19,661	37,953 707	425,529 42,193	425,529 21,072	39,367 1,411
5 6	Total	386,162	367,164	425,529	405,823	38,659	467,722	446,601	40,778
	Accumulated Amortization Reserve								
7	Beginning of the Year	5	5	7	7	2	9	9	2
8	Net Amortization Reserve	2	1	2	1	0	2	1	0
9	Total	7	6	9	8	2	11	10	2

		Recorded			Forecast			PTY		
		2010 (2010\$)	2011 (2011\$)	2012 (2012\$)	2013 (2013\$)	2014 (2014\$)	2015 (2015\$)	2016 (2016\$)	2017	2018
10	Escalation Rates to 2016 \$	18.725%	14.589%	9.566%	5.234%	3.992%	1.877%	0.000%	2.375%	2.838%
11	Capital Additions (Table 11)	8,986	330,195	32,906	30,444	29,986	13,181	12,622		
12	Capital Additions (2016\$)	10,668	378,366	36,054	32,038	31,183	13,429	12,622		
13	Capital Additions 7-Year Average							73,480	75,225	77,360
14	Capital Retirements (Table 12)					1.434	1,077	1,232		
15	Capital Retirements (2016\$)					1,491	1,097	1,232		
16	Capital Retirements 3-Year Average							1,273	1,303	1,340
17	Net Plant Additions for Ratebase								73,922	76,019

San Diego Gas and Electric Company 2016 GRC – Revised March 2015 Non-Shared Service Workpapers San Diego Gas and Electric Company WEIGHTED AVERAGE DEPRECIATED RATE BASE GAS DISTRIBUTION

		2016 RO Model				2017-2018 At	trition Year
		Source: Witne	ess: Jesse S. Ara	gon / Exhibit SI	OG&E-27-R		
		Recorded			Test	PTY	PTY
Line		Year	Estimate	d Year	Year	AY	AY
No.	Account Description	2013	2014	2015	2016	2017	2018
	Fixed Capital						
1	Plant-in-Service	1,552,171	1,639,340	1,728,282	1,823,904	1,919,410	1,999,809
2	Total Fixed Capital	1,552,171	1,639,340	1,728,282	1,823,904	1,919,410	1,999,809
	Working Capital						
3	Fuel in Storage	282	282	282	282	282	282
4	Materials & Supplies	3,536	3,615	3,667	3,728	3,728	3,728
5	Working Cash	-	-	-	16,243	16,243	16,243
6	Total Working Capital	3,818	3,896	3,949	20,252	20,252	20,252
	Other						
7	Customer Advances For Construction	(1,706)	(1,613)	(1,400)	(1,216)	(1,216)	(1,216)
8	Total Other	(1,706)	(1,613)	(1,400)	(1,216)	(1,216)	(1,216)
	Deductions For Reserves						
9	Accumulated Depreciation Reserve	900,989	928,355	962,962	994,323	1,022,568	1,052,122
10	Accumulated Amortization Reserve	41,490	47,351	57,237	68,621	80,135	92,190
11	Accumulated Deferred Taxes	80,394	60,932	69,463	66,757	65,315	63,905
12	Total Deductions For Reserves	1,022,872	1,036,638	1,089,662	1,129,701	1,168,019	1,208,216
13	Weighted Average Depreciated Rate Base	531,411	604,986	641,169	713,240	770,428	810,629
14	Total Weighted Average Rate Base	-	604,986	641,169	713,240	770,428	810,629

17 Net Plant Additions for Ratebase

San Diego Gas and Electric Company WAVG Rate Base Support: Capital Additions, Capital Retirements, Net Depreciation and Amortization Reserve GAS DISTRIBUTION (Thousands of Dollars)

		2016 RO	Model	2017-2018 Attrition Year						
Line		201	16		2017			2010		
	Description	End of Year	WAVG	End of Year	WAVG	WAVG Increase	End of Year	2018 WAVG	WAVG Increase	
	Plant-in-Service									
1	Beginning of the Year	1,779,757	1,779,757	1,886,309	1,886,309	106,553	1,966,199	1,966,199	79,890	
2	Net Plant Additions	106,553	44,148	79,890	33,100	(11,047)	81,119	33,610	509	
3	Total	1,886,309	1,823,904	1,966,199	1,919,410	95,506	2,047,319	1,999,809	80,399	
	Accumulated Depreciation Reserve									
4	Beginning of the Year	978,840	978,840	1,006,274	1,006,274	27,434	1,035,145	1,035,145	28,871	
5	Net Depreciation Reserve	27,434	15,483	28,871	16,294	811	30,080	16,976	683	
6	Total	1,006,274	994,323	1,035,145	1,022,568	28,245	1,065,226	1,052,122	29,553	
	Accumulated Amortization Reserve									
7	Beginning of the Year	62,911	62,911	74,126	74,126	11,215	85,929	85,929	11,803	
8	Net Amortization Reserve	11,215	5,710	11,803	6,009	299	12,297	6,261	252	
9	Total	74,126	68,621	85,929	80,135	11,514	98,226	92,190	12,054	
			Reco	rded			Forecast		PTY	
		2010 (2010\$)	2011 (2011\$)	2012 (2012\$)	2013 (2013\$)	2014 (2014\$)	2015 (2015\$)	2016 (2016\$)	2017	2018
10	Escalation Rates to 2016\$	23.376%	12.711%	4.434%	4.770%	3.348%	1.799%	0.000%	2.098%	1.538%
11	Capital Additions (Table 11)	87,026	52,942	73,434	79,587	111,607	81,906	108,358		
12	Capital Additions (2016\$)	107,370	59,671	76,690	83,383	115,344	83,379	108,358		
13	Capital Additions 7-Year Average		,	,	,	,	,	90,599	92,500	93,924
14	Capital Retirements (Table 12)					13,541	9,983	12,896		
15	Capital Retirements (2016\$)					13,994	10,163	12,896		
16	Capital Retirements 3-Year Average					15,774	10,103	12,351	12,610	12,804

79,890

81,119

Table 11 SAN DIEGO GAS & ELECTRIC RECORDED & FORECASTED CAPITAL ADDITIONS BY FUNCTION (Thousands of Dollars)

Source: Witness: Jes	sse S. Aragon / Exhibit SDG&E-27-R-CWP		RECOI	RDED		FO	ORECASTS	
Asset ID	Description/Function	2010	2011	2012	2013	2014	2015	2016
10	Steam Production Land	0	0	0	0			
20	Steam Production Easements	0	0	0	0	-	-	-
30	Steam Production Other	6,499	141,042	8,356	23,306	6,953	672	747
		6,499	141,042	8,356	23,306	6,953	672	747
40	Other Production Land	0	0	0	0	-	_	-
50	Other Production Easements	0	0	0	0	-	-	-
60	Other Production Other	1,301	150,712	17,609	1,279	16,804	9,106	9,238
		1,301	150,712	17,609	1,279	16,804	9,106	9,238
70	Electric Transmission Assigned to Generation	0	5,130	794	0	-	-	-
80	Electric Distribution Assigned to Generation	0	0	0	0	-	-	-
90	Nuclear Generation	0	0	0	0	-	8,135	2,349
100	Electric Distribution Software & Franchises	219	5,305	69,550	15,264	39,257	7,930	5,074
100	Electric Distribution Software & Franchises - Fully Recovered	0	0	0	0	-		-
110	Electric Distribution Land	0	3,003	180	2,471	_	_	-
120	Electric Distribution Easements	1,996	1,979	1,825	1,451	5,289	5,334	5,809
130	Electric Distribution Other	369,183	261,734	243,041	241,254	484,483	429,066	454,475
		371,397	272,021	314,596	260,440	529,028	442,330	465,358
140	Electric Generation Assigned to Electric Distribution	9,707	21,710	7,829	8,992	4,189	254	1
150	Electric Transmission Land Assigned to Electric Distribution	0	0	879	0	-	-	-
151	Electric Transmission Easement Assigned to Electric Distribution	0	0	161	0	-	-	-
152	Electric Transmission Other Assigned to Electric Distribution	518	5,660	1,970	2,759	-	4,921	18,562
		10,225	27,371	10,839	11,751	4,189	5,175	18,562
160	Electric General Land & Non Depreciables	0	13	0	0	-	-	-
170	Electric General Other	16,629 16,629	17,261 17,273	29,481 29,481	34,896 34,896	15,018 15,018	6,083	25,614 25,614
		10,029	17,273	29,461	34,890	13,018	0,083	23,014
180	Gas Storage Land	0	0	0	0	-	-	-
190	Gas Storage Other	118 118	210 210	0	0	-		-
		110	210	Ü	o o			
200	Gas Transmission Land	0	0	0	0	-	-	-
210	Gas Transmission Easements	0	0	1	0	507		
220	Gas Tranmission Other	3,682	6,282	17,174	32,449	44,316	11,961	10,739
		3,682	6,282	17,175	32,449	44,823	11,961	10,739
230	Gas Distribution Software & Franchises	0	0	0	0	-	-	-
230	Gas Distribution Software & Franchises - Fully Recovered	0	0	0	0	-	-	-
240	Gas Distribution & General Land	0	0	0	0	-	-	-
250	Gas Distribution & General Easements	15	55	22	27	16	29	32
260	Gas Distribution & General Other	71,726 71,740	41,053 41,109	42,521 42,543	31,794 31,821	43,586 43,602	56,840 56,869	78,501 78,533
270	Common Software 5 Year	41,473	29,803	30,684	27,026	85,137	49,100	37,727
270	Common Software 5 Year-Fully Recovered	0	0	0	0	-	-	-
280	Common Software 15 Year	0	0	0	0	-	-	-
280 290	Common Software 15 Year-Fully Recovered Common Land & Non-Depreciable Easements	0	0 26,028	0 1,556	0	-	-	-
300	Common IT Hardware	0	20,028	0	0	11,321	13,854	37,674
310	Common Other	31,756	18,352	69,139	67,334	76,678	39,692	55,264
		73,229	74,184	101,379	94,360	173,136	102,646	130,664
	Total	554,819	735,333	542,772	490,303	833,554	642,977	741,804
	Allocation of Common IT:	55 1,017	,,,,,,,,,	,112	.,,,,,,,	000,004	0.2,777	7.1,004
	Electric Generation	1,186	33,312	6,146	5,859	6,228	3,403	2,637
	Electric Distribution	60,557	35,531	81,517	73,184	143,726	86,168	108,941
	Gas	11,486	5,341	13,716	15,317	23,182	13,076	19,087
		73,229	74,184	101,379	94,360	173,136	102,646	130,664
Description/Function	Asset ID	2010	2011	2012	2013	2014	2015	2016
Electric Distribution	100+110+120+130+140+150+151+152+160+170+Common IT	458,807	352,196	436,433	380,272	691,961	539,756	618,475
Electric Generation	$10+20+30+40+50+60+70+80+Common\ IT$	8,986	330,195	32,906	30,444	29,986	13,181	12,622
Gas Distribution	$180 + 190 + 200 + 210 + 220 + 230 + 240 + 250 + 260 + Common \ IT$	87,026	52,942	73,434	79,587	111,607	81,906	108,358
		554,819	735,333	542,772	490,303	833,554	634,843	739,455
				-				

Table 12 SAN DIEGO GAS & ELECTRIC FORECASTED CAPITAL RETIREMENTS BY FUNCTION (Thousands of Dollars)

	sands of Dollars) e: Witness: Jesse S. Aragon / Exhibit SDG&E-27-R-CWP		FORECASTS	
Asset	William Control of Charles of Cha	Total 2014	Total 2015	Total 2016
ID	Description/Function	Retirements	Retirements	Retirements
10	Steam Production Land	-	-	-
20	Steam Production Easements	-	-	-
30	Steam Production Other	575	583	583
		575	583	583
40	Other Production Land			
50	Other Production Easterness	-	-	-
60	Other Production Other	116	120	122
		116	120	122
70	Electric Transmission Assigned to Generation	_	_	_
80	Electric Distribution Assigned to Generation	-	-	-
90	Nuclear Generation	-	-	-
100	Electric Distribution Software & Franchises	_	_	_
	Electric Distribution Software & Franchises - Fully Recovered	_	_	-
	Electric Distribution Land	-	-	-
120	Electric Distribution Easements	446	474	503
130	Electric Distribution Other	29,173	31,812	34,115
		29,620	32,287	34,617
140	Electric Generation Assigned to Electric Distribution	-	-	-
150	Electric Transmission Land Assigned to Electric Distribution	-	-	-
	Electric Transmission Easement Assigned to Electric Distribution	-	-	-
152	Electric Transmission Other Assigned to Electric Distribution			
		-	-	-
160	Electric General Land & Non Depreciables	_	_	_
	Electric General Other	818	691	1,101
		818	691	1,101
180	Gas Storage Land	_	_	_
190	Gas Storage Other	_	-	-
		-	-	-
200	Gas Transmission Land	_	_	_
210	Gas Transmission Easements	1	1	1
220	Gas Tranmission Other	114	132	137
		115	133	138
230	Gas Distribution Software & Franchises	_	_	_
230	Gas Distribution Software & Franchises - Fully Recovered	_	_	_
240	Gas Distribution & General Land	-	-	-
250	Gas Distribution & General Easements	43	43	43
260	Gas Distribution & General Other	6,367	6,341	7,201
		6,410	6,384	7,244
270	Common Software 5 Year	-	-	-
	Common Software 5 Year-Fully Recovered	-	-	-
	Common Software 15 Year	-	-	-
	Common Software 15 Year-Fully Recovered	-	-	-
290 300	Common Land & Non-Depreciable Easements Common IT Hardware	34,831	9,073	8,176
	Common Other	5,652	12,304	24,545
		40,483	21,377	32,721
	Total	78,136	61,575	76,527
		70,130	01,575	70,527
	Allocation of Common IT: Electric Generation	743	374	527
	Electric Generation Electric Distribution	32,725	17,537	26,680
	Gas	7,016	3,466	5,514
		40,483	21,377	32,721
	Description/Function Asset ID	2014	2015	2016
	Electric Distribution	63,162	50,515	62,399
	Electric Generation 100+110+120+130+140+130+131+132+100+170+Common IT	1,434	1,077	1,232
	Gas Distribution 180+190+200+210+220+230+240+250+260+Common IT	13,541	9,983	12,896
	Total Retirements by Major Function	78,136	61,575	76,527

Table 13

San Diego Gas and Electric Company ACCUMULATED DEFERRED TAX AVERAGE PERCENT CHANGE ELECTRIC DISTRIBUTION, ELECTRIC GENERATION, GAS DISTRIBUTION (Thousands of Dollars)

			Application 201	16 RO Model		
		Source: Wit	ness: Jesse S. Ar	agon / Exhibit	SDG&E-27	
		Recorded			Test	Average %
Line		Year	Estimate	d Year	Year	Change
No.	Account Description	2013	2014	2015	2016	2014-2016
1	Electric Distribution Accumulated Deferred Taxes	399,947	373,466	358,216	336,210	-5.1%
2	Electric Generation Accumulated Deferred Taxes	45,718	48,874	54,980	60,540	11.3%
3	Gas Distribution Accumulated Deferred Taxes	80,394	58,059	57,252	55,575	-2.2%

- 3. Capital-Related Revenue Requirement: The capital-related revenue requirement components for each attrition-year are calculated using the methodology described below:
 - a) Depreciation Expense (Tables 15, 18, 21: Lines 1-7): Depreciation expense is calculated by multiplying the current PTY plant-in-service weighted average increase by the TY's system average depreciation rate (ED 4.63%, EG 4.21%, GD 3.16 %).
 - b) Ad Valorem Tax (Tables 15, 18, 21: Lines 8-14): Ad Valorem Tax is calculated by multiplying the current attrition-year additions by the TY's system ad valorem tax rate (ED 0.73%, EG 1.17%, GD 0.51%).
 - c) State Tax Depreciation (Tables 15, 18, 21: Lines 15-23): State Tax Depreciation income tax expense is calculated by multiplying the current attrition-year additions by the TY's system average state tax depreciation rate (ED 2.96%, EG 3.62%, GD 2.78%) and by the state income tax rate (8.84%).
 - d) Payroll Tax (Tables 15, 18, 21: Lines 24-28): Payroll Tax is calculated by multiplying the prior year payroll taxes by the current attrition-year labor escalation rate forecasted by Global Insight (2.71% in 2017 and 2.62% in 2018).
 - e) Federal Tax Depreciation (Tables 16, 19, 22: Lines 1-9): Federal Tax Depreciation income tax expense is calculated by multiplying current attrition-year additions by the TY's system average federal tax depreciation rate (ED 3.61%, EG 3.17%, GD 2.55%) and by the federal income tax rate (35%).
 - f) California Corporation Franchise Tax (Prior Year) (Tables 16, 19, 22: Lines 10-28)): Prior Year's state income tax is a deduction for federal income tax purposes.
 - g) Long-Term Debt Cost (Tables 17, 20, 23: Lines 4-10): Long-Term Debt Cost is calculated by multiplying the attrition-year change in WAVG rate base by the authorized weighted cost of Long Term Debt.
 - h) Preferred Stock Cost (Tables 17, 20, 23: Lines 11-17): Preferred Stock Cost is calculated by multiplying the attrition-year change in WAVG rate base by the authorized weighted return on Preferred Stock.
 - i) Common Equity Cost (Tables 17, 20, 23: Lines 18-24): Common Equity Cost is calculated by multiplying the attrition-year change in WAVG rate base by the authorized weighted return on Common Equity.
 - j) Gross Ups: All revenue requirement components which are not directly deductible for income taxes are grossed up for income taxes by factors shown in Table 14. These components are Book Depreciation, State Tax Depreciation, Federal Tax Depreciation, Preferred Stock Cost, Common Equity Cost, and California

Corporation Franchise Tax (Prior Year). All revenue requirement components are grossed up for FF&U as described in Section D.

- 4. Tax Law Changes: The revenue requirement estimates were calculated using current federal and state tax laws enacted through the filing date of this testimony. SDG&E's revenue requirement will reflect all tax law changes (depreciation policy) and tax rate changes, including but not limited to changes in income taxes, payroll taxes, and ad valorem taxes.
- D. Franchise Fees and Uncollectible Gross Up (Table 14): All revenue requirement components are grossed up for FF&U using the franchise fee factors of 3.40% (electric) and 2.07% (gas), and the uncollectible factor of 0.174% (electric and gas) as adopted in SDG&E's GRC¹. The calculations of the gross up factors (Table 14) are from the 2016 GRC Results of Operations (RO) Model.

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¹ D.13-05-010.

Table 14

SAN DIEGO GAS & ELECTRIC COMPANY TEST YEAR 2016 NET-TO-GROSS MULTIPLIER

		Uncollectible and Fran	chise Fee Factor	State & Federal Tax Factor	N-T-G M	ultiplier
Line No.	Description	Electric	Gas	Electric and Gas	Electric	Gas
1	Revenues	1.000000	1.000000	1.000000	1.000000	1.000000
2	Uncollectible Tax Rate	0.001740	0.001740	0.000000	0.001740	0.001740
3	Uncollectible Amount Applied	1.000000	1.000000	1.000000	1.000000	1.000000
4	Less: Uncollectible (Line 2 * Line 3)	0.001740	0.001740	0.000000	0.001740	0.001740
5	Subtotal (Line 3 - Line 4)	0.998260	0.998260	1.000000	0.998260	0.998260
6	Franchise Fees Tax Rate	0.034011	0.020727	0.000000	0.034011	0.020727
7	Franchise Fees Amount Applied (Line 5)	0.998260	0.998260	1.000000	0.998260	0.998260
8	Less: Franchise Fees (Line 6 * Line 7)	0.033952	0.020691	0.000000	0.033952	0.020691
9	Subtotal (Line 7 - Line 8)	0.964308	0.977569	1.000000	0.964308	0.977569
10	S.I.T. Rate			0.088400	0.088400	0.088400
11	S.I.T. Amount Applied (Line 9)			1.000000	0.964308	0.977569
12	Less: S.I.T. (Line 10 * Line 11)			0.088400	0.085245	0.086417
13	Subtotal (Line 11 - Line 12)			0.911600	0.879063	0.891152
14	F.I.T. Rate			0.350000	0.350000	0.350000
15	F.I.T. Amount Applied (Line 13)			0.911600	0.879063	0.891152
16	Less: F.I.T. (Line 14 * Line 15)			0.319060	0.307672	0.311903
17	Net Operating Revenues (Line 15 - Line 16)			0.592540	0.571391	0.579249
18	Uncollectible and Franchise Fee Factor (1 / Line 9)	1.037013	1.022946			
19	State & Federal Tax Factor (1 / Line 17)			1.687650		
20	N-T-G Multiplier (1 / Line 17)				1.750115	1.726374

SDG&E/POST-TEST YEAR/Exh No: SDG&E-37-R-WP/Witness: S. Hrna Page 17 of 26

SAN DIEGO GAS & ELECTRIC

2016 CPUC General Rate Case (Application)

Electric Distribution

Calculation of Revenue Requirement Increase

Depreciation Expense, State Tax Depreciation, Ad Valorem Taxes, & Payroll Taxes (Thousands of Dollars)

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Depreciation Expense			
1	Test Year (TY) Accrual	338,240		
2	/ TY Weighted Average (WAVG) Plant-in-Service	7,309,255		
3	= System Average Depreciation Rate	4.63%	4.63%	4.63%
4	x Plant in Service Weighted Average Increase	<u> </u>	506,687	486,837
5	= Increase in Depreciation Expense		23,447	22,529
6	x Net-to-Gross Multiplier	1.750115	1.750115	1.750115
7	= Increase in Revenue Requirement	_	41,035	39,428
	Ad Val orem Taxes			
8	TY Ad Valorem Taxes	55,506		
9	/ TY Plant In Service	7,588,087		
10	= System Average Ad Valorem Tax Rate	0.73%	0.73%	0.73%
11	x Current Attrition Year Additions	_	479,823	494,594
12	= Increase to Ad Valorem Taxes		3,510	3,618
13	x FF&U Factor	1.037013	1.037013	1.037013
14	= Increase in Revenue Requirement		3,640	3,752
	State Tax Depreciation			
15	TY State Tax Depreciation	224,839		
16	/ TY Plant In Service	7,588,087		
17	= System Average State Tax Depreciation Rate	2.96%	2.96%	2.96%
18	x Current Attrition Year Additions	_	479,823	494,594
19	= Increase in State Tax Depreciation Expense		14,217	14,655
20	x -State Income Tax Rate	(0.0884)	(0.0884)	(0.0884)
21	= State Income Taxes		(1,257)	(1,296)
22	x Net-to-Gross Multiplier	1.750115	1.750115	1.750115
23	= Decrease in Revenue Requirement	_	(2,200)	(2,267)
	Payroll Taxes			
24	Prior Year Payroll Taxes		11,588	11,903
25	x Current Year Labor Escalation Rate		2.71%	2.62%
26	= Increase in Full Year Additions		314	311
27	x FF&U Factor		1.037013	1.037013
28	= Increase in Revenue Requirement	_	326	323

Table 16

SAN DIEGO GAS & ELECTRIC

2016 CPUC General Rate Case (Application)

Electric Distribution

Calculation of Revenue Requirement Increase

Federal Tax Depreciation Expense & Prior Year CCFT

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Federal Tax Depreciation (ACRS/MACRS Basis)			
1	TY Federal Tax Depreciation	273,655		
2	/ TY Plant-In-Service	7,588,087		
3	= System Average Federal Tax Depreciation Rate	3.61%	3.61%	3.61%
4	x Current Attrition Year Additions	_	479,823	494,594
5	= Increase in Federal Tax Depreciation Expense		17,304	17,837
6	x -Federal Income Tax Rate	(0.3500)_	(0.3500)	(0.3500)
7	= Federal Income Taxes		(6,056)	(6,243)
8	x Net-to-Gross Multiplier	1.750115	1.750115	1.750115
9	= Decrease in Revenue Requirement	_	(10,600)	(10,926)
	California Corporation Franchise Tax (Prior Year)			
	Carrothia Corporation Franchise Tax (11101 Tear)			
10	+ RevReq from Book Depreciation			41,035
11	+ RevReq from State Tax Depreciation			(2,200)
12	+ RevReq from Federal Tax Depreciation (ACRS.MACRS)			(10,600)
13	+ Rate Base: Preferred Stock			899
14	+ Rate Base: Common Stock Equity			28,359
15	+ CCFT			(4,296)
16	= Revenue Requirement Increase			53,198
17	x Prior Year State Income Tax Cumulative Component			0.088400
	-			
18	= Prior Year State Income Tax Increase			4,703
19	+ Prior Year State Income Tax (State Tax Depreciation Exper	ise)		(1,257)
20	+ Prior Year State Income Tax (State Rate Change)			
21	= Prior Year Total State Income Tax Increase			3,446
22	Prior Year Current California Corp Franchise Tax		26,859	30,305
23	- Prior Year CCFT Deductible for Federal Income Taxes		19,845	26,859
24	= Increase CCFT Deduction on Federal Income Taxes		7,014	3,446
25	x -Federal Income Tax Rate		(0.3500)	(0.3500)
26	= Federal Income Taxes	_	(2,455)	(1,206)
27	x Net-To-Gross Multiplier		1.750115	1.750115
28	= Decrease in Revenue Requirement	_	(4,296)	(2,111)
		_		

SAN DIEGO GAS & ELECTRIC

2016 CPUC General Rate Case (Application)

Electric Distribution

Calculation of Revenue Requirement Increase

Return on Rate Base

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Change in Weighted Average Rate Base			
1	TY WAVG Rate Base	3,918,782	3,918,782	
2	CY WAVG Rate Base		4,221,095	4,487,961
3	Change in WAVG Rate Base	_	302,314	266,865
	Long Term Debt			
4	Prior Year Return on Debt	5.00%	5.00%	5.00%
5	x Prior Year Debt Capitalization	45.25%	45.25%	45.25%
6	= Prior Year Weighted Cost of Debt	2.26%	2.26%	2.26%
7	x Change in WAVG Rate Base		302,314	266,865
8	= Change in Weighted Cost of Debt		6,832	6,031
9	x FF&U Factor	1.037013	1.037013	1.037013
10	= Increase in Revenue Requirement	_	7,085	6,254
	Preferred Stock			
11	Prior Year Return on Preferred Stock	6.22%	6.22%	6.22%
12	x Prior Year Preferred Stock Capitalization	2.75%	2.75%	2.75%
13	= Prior Year Weighted Cost of Preferred Stock	0.17%	0.17%	0.17%
14	x Change in WAVG Rate Base		302,314	266,865
15	= Change in Weighted Cost of Preferred Stock	_	514	454
16	x Net-To-Gross Multiplier	1.750115	1.750115	1.750115
17	= Increase in Revenue Requirement	_	899	794
	Common Equity			
18	Prior Year Return on Common Equity	10.30%	10.30%	10.30%
19	x Prior Year Common Equity Capitalization	52.00%	52.00%	52.00%
20	= Prior Year Weighted Cost of Common Equity	5.36%	5.36%	5.36%
21	x Change in WAVG Rate Base		302,314	266,865
22	= Change in Weighted Cost of Common Equity		16,204	14,304
23	x Net-To-Gross Multiplier	1.750115	1.750115	1.750115
24	= Increase in Revenue Requirement		28,359	25,034
	· - 1	_		,
25	Total Increase in ED Revenue Requirement	_	64,249	60,281

SAN DIEGO GAS & ELECTRIC

2016 CPUC General Rate Case (Application)

Electric Generation

Calculation of Revenue Requirement Increase

Depreciation Expense, State Tax Depreciation, Ad Valorem Taxes, & Payroll Taxes (Thousands of Dollars)

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Depreciation Expense			
1	Test Year (TY) Accrual	42,337		
2	/ TY Weighted Average (WAVG) Plant-in-Service	1,005,258		
3	= System Average Depreciation Rate	4.21%	4.21%	4.21%
4	x Plant in Service Weighted Average Increase		37,472	74,837
5	= Increase in Depreciation Expense		1,578	3,152
6	x Net-to-Gross Multiplier	1.750115	1.750115	1.750115
7	= Increase in Revenue Requirement	_	2,762	5,516
	Ad Val orem Taxes			
8	TY Ad Valorem Taxes	11,789		
9	/ TY Plant In Service	1,010,491		
10	= System Average Ad Valorem Tax Rate	1.17%	1.17%	1.17%
11	x Current Attrition Year Additions	_	73,922	76,019
12	= Increase to Ad Valorem Taxes		862	887
13	x FF&U Factor	1.037013	1.037013	1.037013
14	= Increase in Revenue Requirement		894	920
	State Tax Depreciation			
15	TY State Tax Depreciation	36,539		
16	/ TY Plant In Service	1,010,491		
17	= System Average State Tax Depreciation Rate	3.62%	3.62%	3.62%
18	x Current Attrition Year Additions	_	73,922	76,019
19	= Increase in State Tax Depreciation Expense		2,673	2,749
20	x -State Income Tax Rate	(0.0884)	(0.0884)	(0.0884)
21	= State Income Taxes		(236)	(243)
22	x Net-to-Gross Multiplier	1.750115	1.750115	1.750115
23	= Decrease in Revenue Requirement	_	(414)	(425)
	Payroll Taxes			
24	Prior Year Payroll Taxes		789	810
25	x Current Year Labor Escalation Rate		2.71%	2.62%
26	= Increase in Full Year Additions		21	21
27	x FF&U Factor		1.037013	1.037013
28	= Increase in Revenue Requirement	_	22	22

Table 19

SAN DIEGO GAS & ELECTRIC

2016 CPUC General Rate Case (Application)

Electric Generation

Calculation of Revenue Requirement Increase Federal Tax Depreciation Expense & Prior Year CCFT

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Federal Tax Depreciation (ACRS/MACRS Basis)			
1	TY Federal Tax Depreciation	32,009		
2	/ TY Plant-In-Service	1,010,491		
3	= System Average Federal Tax Depreciation Rate	3.17%	3.17%	3.17%
4	x Current Attrition Year Additions	_	73,922	76,019
5	= Increase in Federal Tax Depreciation Expense		2,342	2,408
6	x -Federal Income Tax Rate	(0.3500)_	(0.3500)	(0.3500)
7	= Federal Income Taxes		(820)	(843)
8	x Net-to-Gross Multiplier	1.750115 _	1.750115	1.750115
9	= Decrease in Revenue Requirement	_	(1,434)	(1,475)
	California Corporation Franchise Tax (Prior Year)			
10	+ RevReq from Book Depreciation			2,762
11	+ RevReq from State Tax Depreciation			(414)
12	+ RevReq from Federal Tax Depreciation (ACRS.MACRS)			(1,434)
13	+ Rate Base: Preferred Stock			(19)
14	+ Rate Base: Common Stock Equity			(615)
15	+ CCFT			35
16	= Revenue Requirement Increase			315
17	x Prior Year State Income Tax Cumulative Component			0.088400
18	= Prior Year State Income Tax Increase			28
19	+ Prior Year State Income Tax (State Tax Depreciation Exper	nse)		(236)
20	+ Prior Year State Income Tax (State Rate Change)			
21	= Prior Year Total State Income Tax Increase			(208)
22	Prior Year Current California Corp Franchise Tax		6,519	6,310
23	- Prior Year CCFT Deductible for Federal Income Taxes	_	6,576	6,519
24	= Increase CCFT Deduction on Federal Income Taxes		(57)	(208)
25	x -Federal Income Tax Rate	_	(0.3500)	(0.3500)
26	= Federal Income Taxes	_	20	73
27	x Net-To-Gross Multiplier	_	1.750115	1.750115
28	= Increase in Revenue Requirement	_	35	128

Table 20

SAN DIEGO GAS & ELECTRIC 2016 CPUC General Rate Case (Application) Electric Generation Calculation of Revenue Requirement Increase Return on Rate Base

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Change in Weighted Average Rate Base			
1	TY WAVG Rate Base	666,952	666,952	
2	CY WAVG Rate Base		660,399	688,202
3	Change in WAVG Rate Base		(6,552)	27,803
	Long Term Debt			
4	Prior Year Return on Debt	5.00%	5.00%	5.00%
5	x Prior Year Debt Capitalization	45.25%	45.25%	45.25%
6	= Prior Year Weighted Cost of Debt	2.26%	2.26%	2.26%
7	x Change in WAVG Rate Base	_	(6,552)	27,803
8	= Change in Weighted Cost of Debt		(148)	628
9	x FF&U Factor	1.037013	1.037013	1.037013
10	= Increase (Decrease) in Revenue Requirement	_	(154)	652
	Preferred Stock			
11	Prior Year Return on Preferred Stock	6.22%	6.22%	6.22%
12	x Prior Year Preferred Stock Capitalization	2.75%	2.75%	2.75%
13	= Prior Year Weighted Cost of Preferred Stock	0.17%	0.17%	0.17%
14	x Change in WAVG Rate Base	_	(6,552)	27,803
15	= Change in Weighted Cost of Preferred Stock		(11)	47
16	x Net-To-Gross Multiplier	1.750115	1.750115	1.750115
17	= Increase (Decrease) in Revenue Requirement	_	(19)	83
	<u>Common Equity</u>			
18	Prior Year Return on Common Equity	10.30%	10.30%	10.30%
19	x Prior Year Common Equity Capitalization	52.00%	52.00%	52.00%
20	= Prior Year Weighted Cost of Common Equity	5.36%	5.36%	5.36%
21	x Change in WAVG Rate Base		(6,552)	27,803
22	= Change in Weighted Cost of Common Equity	_	(351)	1,490
23	x Net-To-Gross Multiplier	1.750115	1.750115	1.750115
24	= Increase (Decrease) in Revenue Requirement	_	(615)	2,608
25	Total Increase in EG Revenue Requirement	_	1,078	8,027
		_	-,-·-	-,

SAN DIEGO GAS & ELECTRIC

2016 CPUC General Rate Case (Application)

Gas Distribution

Calculation of Revenue Requirement Increase

Depreciation Expense, State Tax Depreciation, Ad Valorem Taxes, & Payroll Taxes (Thousands of Dollars)

No. Description 2016 2017 2018 Depreciation Expense 1 Test Year (TY) Accrual 57,571 2 7 Y Weighted Average (WAVG) Plant-in-Service 1,823,904 3.16%	Line		TY	PTY	PTY
Test Year (TY) Accrual 57,571 2	No.	Description	2016	2017	2018
2		Depreciation Expense			
System Average Depreciation Rate 3.16% 3.16% 3.16% X Plant in Service Weighted Average Increase 95,506 80,399 S	1	Test Year (TY) Accrual	57,571		
A x Plant in Service Weighted Average Increase 3,015 2,538	2	/ TY Weighted Average (WAVG) Plant-in-Service	1,823,904		
5 = Increase in Depreciation Expense 3,015 2,538 6 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 7 = Increase in Revenue Requirement 5,204 4,381 Ad Valorem Taxes 8 TY Ad Valorem Taxes 9,639 9 / TY Plant In Service 1,886,309 10 = System Average Ad Valorem Tax Rate 0.51% 0.51% 11 x Current Attrition Year Additions 79,890 81,119 12 = Increase to Ad Valorem Taxes 408 415 13 x FF&U Factor 1.022946 1.022946 1.022946 14 = Increase in Revenue Requirement 52,429 418 424 Extate Tax Depreciation 15 TY State Tax Depreciation 52,429 2.78% 2.78% 16 / TY Plant In Service 1,886,309 2.78% 2.78% 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884)	3	= System Average Depreciation Rate	3.16%	3.16%	3.16%
1.726374 1.726374	4	x Plant in Service Weighted Average Increase		95,506	80,399
May May	5				
Ad Valorem Taxes 8 TY Ad Valorem Taxes 9,639 9 / TY Plant In Service 1,886,309 10 = System Average Ad Valorem Tax Rate 0.51% 0.51% 11 x Current Attrition Year Additions 79,890 81,119 12 = Increase to Ad Valorem Taxes 408 415 13 x FF&U Factor 1.022946 1.022946 1.022946 14 = Increase in Revenue Requirement 418 424 State Tax Depreciation 15 TY State Tax Depreciation 52,429 16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374<		•	1.726374		
8 TY Ad Valorem Taxes 9,639 9 / TY Plant In Service 1,886,309 10 = System Average Ad Valorem Tax Rate 0.51% 0.51% 11 x Current Attrition Year Additions 79,890 81,119 12 = Increase to Ad Valorem Taxes 408 415 13 x FF &U Factor 1.022946 1.022946 1.022946 14 = Increase in Revenue Requirement 418 424 State Tax Depreciation 15 TY State Tax Depreciation 52,429 16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) 21 = State Income Tax Rate (0.0884) (0.0884) 22 x Net-to-Gross Multiplier 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.	7	= Increase in Revenue Requirement	_	5,204	4,381
Ty Plant In Service		·			
10	8	TY Ad Valorem Taxes	9,639		
11 x Current Attrition Year Additions 79,890 81,119 12 = Increase to Ad Valorem Taxes 408 415 13 x FF&U Factor 1.022946 1.022946 1.022946 14 = Increase in Revenue Requirement 418 424 State Tax Depreciation 15 TY State Tax Depreciation 52,429 16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324	9	/ TY Plant In Service	1,886,309		
12	10	= System Average Ad Valorem Tax Rate	0.51%	0.51%	0.51%
13 x FF&U Factor 1.022946 1.022946 1.022946 14 = Increase in Revenue Requirement 418 424 State Tax Depreciation 52,429 418 424 15 TY State Tax Depreciation 52,429 52,429 52,429 52,78% 2.78% <t< td=""><td>11</td><td>x Current Attrition Year Additions</td><td></td><td>79,890</td><td>81,119</td></t<>	11	x Current Attrition Year Additions		79,890	81,119
State Tax Depreciation 52,429 16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 5,324 5,469 25 x Current Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	12	= Increase to Ad Valorem Taxes		408	415
State Tax Depreciation 15 TY State Tax Depreciation 52,429 16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	13	x FF&U Factor	1.022946	1.022946	1.022946
15 TY State Tax Depreciation 52,429 16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	14	= Increase in Revenue Requirement		418	424
16 / TY Plant In Service 1,886,309 17 = System Average State Tax Depreciation Rate 2.78% 2.78% 18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x -State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946		State Tax Depreciation			
17	15	TY State Tax Depreciation	52,429		
18 x Current Attrition Year Additions 79,890 81,119 19 = Increase in State Tax Depreciation Expense 2,220 2,255 20 x - State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	16	/ TY Plant In Service	1,886,309		
19	17	= System Average State Tax Depreciation Rate	2.78%	2.78%	2.78%
20 x - State Income Tax Rate (0.0884) (0.0884) (0.0884) 21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	18	x Current Attrition Year Additions	_	79,890	81,119
21 = State Income Taxes (196) (199) 22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	19	= Increase in State Tax Depreciation Expense		2,220	2,255
22 x Net-to-Gross Multiplier 1.726374 1.726374 1.726374 23 = Decrease in Revenue Requirement (339) (344) Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	20	x -State Income Tax Rate	(0.0884)	(0.0884)	(0.0884)
Payroll Taxes (339) (344) 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	21	= State Income Taxes		(196)	(199)
Payroll Taxes 24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	22	x Net-to-Gross Multiplier	1.726374	1.726374	1.726374
24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	23	= Decrease in Revenue Requirement	_	(339)	(344)
24 Prior Year Payroll Taxes 5,324 5,469 25 x Current Year Labor Escalation Rate 2.71% 2.62% 26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946		Payroll Taxes			
26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	24			5,324	5,469
26 = Increase in Full Year Additions 144 143 27 x FF&U Factor 1.022946 1.022946	25	x Current Year Labor Escalation Rate		2.71%	2.62%
	26	= Increase in Full Year Additions		144	
28 = Increase in Revenue Requirement 148 146	27	x FF&U Factor		1.022946	1.022946
	28	= Increase in Revenue Requirement	_	148	146

SAN DIEGO GAS & ELECTRIC 2016 CPUC General Rate Case (Application)

Gas Distribution

Calculation of Revenue Requirement Increase Federal Tax Depreciation Expense & Prior Year CCFT (Thousands of Dollars)

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Federal Tax Depreciation (ACRS/MACRS Basis)			
1	TY Federal Tax Depreciation	48,124		
2	/ TY Plant-In-Service	1,886,309		
3	= System Average Federal Tax Depreciation Rate	2.55%	2.55%	2.55%
4	x Current Attrition Year Additions	_	79,890	81,119
5	= Increase in Federal Tax Depreciation Expense		2,038	2,070
6	x -Federal Income Tax Rate	(0.3500)_	(0.3500)	(0.3500)
7	= Federal Income Taxes		(713)	(724)
8	x Net-to-Gross Multiplier	1.726374	1.726374	1.726374
9	= Decrease in Revenue Requirement	_	(1,232)	(1,250)
	California Corporation Franchise Tax (Prior Year)			
10	+ RevReq from Book Depreciation			5,204
11	+ RevReq from State Tax Depreciation			(339)
12	+ RevReq from Federal Tax Depreciation (ACRS.MACRS)			(1,232)
13	+ Rate Base: Preferred Stock			168
14	+ Rate Base: Common Stock Equity			5,292
15	+ CCFT			
			_	(187)
16	= Revenue Requirement Increase			8,907
17	x Prior Year State Income Tax Cumulative Component			0.088400
18	= Prior Year State Income Tax Increase			787
19	+ Prior Year State Income Tax (State Tax Depreciation Exper	nse)		(196)
20	+ Prior Year State Income Tax (State Rate Change)			
21	= Prior Year Total State Income Tax Increase			591
22	Prior Year Current California Corp Franchise Tax		3,864	4,456
23	- Prior Year CCFT Deductible for Federal Income Taxes	_	3,555	3,864
24	= Increase CCFT Deduction on Federal Income Taxes		309	591
25	x -Federal Income Tax Rate		(0.3500)	(0.3500)
26	= Federal Income Taxes	_	(108)	(207)
27	x Net-To-Gross Multiplier		1.726374	1.726374
28	= Decrease in Revenue Requirement		(187)	(357)

SAN DIEGO GAS & ELECTRIC 2016 CPUC General Rate Case (Application) Gas Distribution Calculation of Revenue Requirement Increase Return on Rate Base

Line		TY	PTY	PTY
No.	Description	2016	2017	2018
	Change in Weighted Average Rate Base			
1	TY WAVG Rate Base	713,240	713,240	
2	CY WAVG Rate Base	_	770,428	810,629
3	Change in WAVG Rate Base		57,188	40,202
	Long Term Debt			
4	Prior Year Return on Debt	5.00%	5.00%	5.00%
5	x Prior Year Debt Capitalization	45.25%	45.25%	45.25%
6	= Prior Year Weighted Cost of Debt	2.26%	2.26%	2.26%
7	x Change in WAVG Rate Base	_	57,188	40,202
8	= Change in Weighted Cost of Debt		1,292	909
9	x FF&U Factor	1.022946	1.022946	1.022946
10	= Increase in Revenue Requirement	_	1,322	929
	Preferred Stock			
11	Prior Year Return on Preferred Stock	6.22%	6.22%	6.22%
12	x Prior Year Preferred Stock Capitalization	2.75%	2.75%	2.75%
13	= Prior Year Weighted Cost of Preferred Stock	0.17%	0.17%	0.17%
14	x Change in WAVG Rate Base		57,188	40,202
15	= Change in Weighted Cost of Preferred Stock		97	68
16	x Net-To-Gross Multiplier	1.726374	1.726374	1.726374
17	= Increase in Revenue Requirement	_	168	118
	Common Equity			
18	Prior Year Return on Common Equity	10.30%	10.30%	10.30%
19	x Prior Year Common Equity Capitalization	52.00%	52.00%	52.00%
20	= Prior Year Weighted Cost of Common Equity	5.36%	5.36%	5.36%
21	x Change in WAVG Rate Base		57,188	40,202
22	= Change in Weighted Cost of Common Equity	_	3,065	2,155
23	x Net-To-Gross Multiplier	1.726374	1.726374	1.726374
24	= Increase in Revenue Requirement	_	5,292	3,720
		_	40 == :	
25	Total Increase in GD Revenue Requirement	_	10,794	7,767