Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2016 (U 904-G))

Application No. 14-11-004
Exhibit No.: (SCG-35-R-WP)

REVISED WORKPAPERS TO

PREPARED DIRECT TESTIMONY

OF RONALD M. VAN DER LEEDEN

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

March 2015

PROPOSED POST-TEST YEAR RATEMAKING MECHANISM – SCG

A. REVENUE REQUIREMENT

This post-test year ("PTY") ratemaking mechanism proposes to adjust test-year ("TY") authorized revenue requirement in 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 SCG's 2016 TY are from the testimony of SCG witness Khai Nguyen (Exhibit SCG-34-R) and utilized throughout these workpapers. The table below summarizes the total revenue requirement with SCG'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)	$1,198.7	$1,227.8
2	Medical Expense	77.2	83.2
3	Capital Related Costs (Depreciation, Taxes, Return)	1,050.7	1,108.8
4	Total (L1 + L2 + L3)	2,326.6	2,419.9
5	FF&U (FF = 1.4336%, U = .312%)	39.5	40.1
6	Total Base Margin (L4 + L5)	2,366.1	2,460.0
7	Miscellaneous Revenues	100.5	100.5
8	Total Revenue Requirement (L6 + L7)	$2,466.6	$2,560.5
9	Revenue Requirement Increase $	$125.0	$93.9
10	Revenue Requirement Increase %	*5.3%*	*3.8%*

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, franchise fees, and uncollectibles ("O&M Margin"). Medical costs are escalated separately, as described below in section B2. After the PTY O&M and medical expenses are escalated, these costs will be grossed up for FF&U using the factors authorized in the 2016 Test Year.

1. Escalation of O&M (excluding medical): For simplicity in calculating PTY escalation, a single weighted gave average O&M utility input price index ("GOMPI") is used to adjust

O&M expenses to reflect the expected cost inflation of goods and services that SCG will incur to serve its customers. The calculation of GOMPI is described in Mr. Scott Wilder's testimony (Ex. SCG-31). The PTY O&M revenue requirement is calculated below in Table-2:

Table 2

Line No.	O&M Expense Adjustment ($ in millions)	TY-2016	2017	2018
1	Prior Year O&M Margin		$1,169.3	$1,198.7
2	O&M Escalation Rate[1]		2.52%	2.42%
3	Attrition Year O&M Escalation (L1* L2)		$29.4	$29.1
4	O&M Expense (L1+ L3)	$1,169.3	$1,198.7	$1,227.8

2. Escalation of Medical Costs: Medical costs adopted in SCG's 2016 test year will be escalated annually using the Tower Watson's medical escalation projections as described in the direct testimony of SCG witness Ms. Debbie Robinson (Exhibit SCG-21). The associated revenue requirement prior to FF&U gross up is calculated below (differences due to rounding) in Table-3:

Table 3

Line No.	Medical Cost Adjustment ($ in millions)	TY-2016	2017	2018
1	Prior Year Medical Expense (net)		$71.6	$77.2
2	Medical Escalation Rate		7.8%	7.8%
3	Attrition Year Medical Escalation (L1* L2)		$5.6	$6.0
4	Medical Expense (L1+ L3)	$71.6	$77.2	$83.2

C. CAPITAL-RELATED

This section describes the development of PTY plant additions and other PTY rate base changes to determine the capital-related revenue requirement (authorized return, depreciation expense, tax, and franchise fee and uncollectible gross ups). 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 of SCG witness Mr. Garry Yee (Exhibit SCG-26-R_GYee_Ratebase_WP). Once each attrition year net plant additions are computed, incremental depreciation reserve, and deferred taxes are calculated in order to determine the rate base for each attrition year. The change in year over year rate base is then utilized to calculate the capital costs components of the revenue requirement.

[1] The SCG forecast incorporates escalators from IHS Global Insight's 4th Quarter 2013 Power Planner forecast released in February 2014. IHS Global Insight is an internationally recognized econometric forecasting firm and their forecasts have been used in many regulatory proceedings.

Table 4

Line No.	Capital-Related Attrition ($ in millions)	TY-2016	2017	2018
1	Prior Year Capital-Related Costs		$961.2	$1,050.7
2	Capital-Related Attrition		$89.4	$58.2
3	Capital-Related Costs (L1+ L2)	$961.2	$1,050.7	$1,108.8

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

1. Rate Base: The starting point in developing rate base for each attrition year is the prior year plant in service. Weighted average ("WAVG") net plant additions for the attrition year are added, and current year changes to the net depreciation and accumulated deferred tax reserve are made.

    a) Weighted Net Plant Additions

    1) The starting point used for the plant additions for the PTY is a seven-year average of plant additions. The seven-year average is comprised of four years of recorded (2010-2013, refer to Table-12) and three years of forecasted (2014-2016 from the test year RO model, see Table-13, Line 13) capital additions. Each year is escalated to test year dollars and then averaged (Table-6, Line 7-9). The seven-year average is then escalated to 2017 and 2018 (Table-6, Line 10).
    2) Plant retirements for the PTY are calculated using a three-year period of forecasted (2014-2016) capital retirements from the Test Year RO model (Table-13, Line 14). Each year is escalated to test year dollars (Table-6, Lines 11-13) and then averaged. The resulting three-year average is then escalated to 2017 and 2018 (Table-6, Line 14).
    3) WAVG Net Plant Additions: 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. (Table-6, Line 2)
        a. e.g. ($282,439 / $875,445) * $618,806 = $199,642

    b) Change in Accumulated Depreciation Reserve: Each PTY's WAVG net depreciation reserve is calculated using the ratio of the attrition year WAVG plant in service balance to the prior year WAVG plant in service balance multiplied by the prior year's net depreciation reserve. Net depreciation reserve includes annual retirements, cost of removal and salvage. (Table-6, Line 5)

    1) e.g. ($12,777,540 / $11,984,893) * $269,723 = $140,364

c) Change in Accumulated Deferred Tax Reserve: Each PTY's WAVG accumulated deferred tax is calculated using the ratio of the test year level of deferred taxes to the test year WAVG plant in service. (Table-5, Line 12-14)

1) e.g. ($1,097,785 / $11,984,893) * $12,777,540 = $1,170,390

d) Working Capital and Other: SCG is not proposing to change the rate base elements of Materials and Supplies, Working Cash, Customer Advances for Construction, and deferred revenue from the Test Tear 2016 amounts. (Table 5, Line 4,5,7,8)

The resulting Weighted Average Depreciated Rate Base and supporting calculations are shown in the tables below:

Table 5

SOUTHERN CALIFORNIA GAS COMPANY
Weighted Average Depreciated Rate Base
(Thousands of Dollars)

		2016 RO Model				2017-2018 Attrition Year	
Line No.	Account Description	Recorded Year 2013	Estimated Year 2014	Estimated Year 2015	Test Year 2016	AY 2017	AY 2018
	Fixed Capital						
1	Plant In Service	10,199,383	10,703,389	11,301,172	11,984,893	12,777,540	13,399,417
2	Work-In-Progress (non-interest bearing)	4,728	10,301	11,354	13,186	13,186	13,186
3	Total Fixed Capital	10,204,111	10,713,690	11,312,526	11,998,079	12,790,726	13,412,604
	Working Capital						
4	Materials & Supplies	25,585	25,717	24,731	25,141	25,141	25,141
5	Working Cash	0	0	0	79,879	79,879	79,879
6	Total Working Capital	25,585	25,717	24,731	105,020	105,020	105,020
	Other						
7	Customer Advances For Construction	(101,316)	(101,593)	(101,911)	(102,345)	(102,345)	(102,345)
8	Deferred Revenue - ITCC	(33,179)	(33,449)	(34,427)	(35,600)	(35,600)	(35,600)
9	Aliso Gas Rights					0	0
10	Gain On Sale of El Monte and Pasadena Bases					0	0
11	Total Other	(134,496)	(135,043)	(136,338)	(137,945)	(137,945)	(137,945)
	Deductions For Reserves						
12	Accumulated Depreciation Reserve	5,889,706	6,161,594	6,448,522	6,731,432	7,009,863	7,304,256
13	Accumulated Deferred Taxes - Plant	974,483	1,024,799	1,090,888	1,097,785	1,170,390	1,227,352
14	Accumulated Deferred Taxes - CIAC	(112,055)	(118,997)	(124,975)	(129,900)	(138,491)	(145,231)
15	Accumulated Deferred Investment Tax Credits	0	0	0	0	0	0
16	Total Deductions For Reserves	6,752,133	7,067,395	7,414,434	7,699,317	8,041,761	8,386,377
17	Weighted Average Depreciated Rate Base	3,343,068	3,536,968	3,786,485	4,265,837	4,716,040	4,993,302

Table 6

Line No.		2016 RO Model		2017-2018 Attrition Year Calc					
		2016		2017			2018		
	Plant Inservice	End of Year	WAVG	End of Year	WAVG	WAVG Increase	End of Year	WAVG	WAVG Increase
1	Beginning of the Year	11,702,454	11,702,454	12,577,898	12,577,898	875,445	13,196,704	13,196,704	618,806
2	Net Additions	875,445	282,439	618,806	199,642	(82,798)	628,326	202,713	3,071
3	Total Fixed capital	12,577,898	11,984,893	13,196,704	12,777,540	792,647	13,825,030	13,399,417	621,877

Line No.		2016		2017			2018		
	Accum Depreciation	End of Year	WAVG	End of Year	WAVG	WAVG Increase	End of Year	WAVG	WAVG Increase
4	Beginning of the Year	6,599,775	6,599,775	6,869,499	6,869,499	269,723	7,157,061	7,157,061	287,562
5	Depreciation Reserve	269,723	131,657	287,562	140,364	8,707	301,558	147,195	6,831
6	Total	6,869,499	6,731,432	7,157,061	7,009,863	278,431	7,458,618	7,304,256	294,394

Line No.		Recorded				Forecast			PTY	
		2010 (2010$)	2011 (2011$)	2012 (2012$)	2013 (2013$)	2014 (2014$)	2015 (2015$)	2016 (2016$)	2017	2018
7	Capital Additions	475,093	609,293	624,158	582,784	664,014	749,876	981,697	Escalation Rate	
									2.10%	1.54%
8	Capital Additions (2013$)	559,466	655,475	622,159	582,784	655,003	728,612	937,003		
9	Capital Additions (2016$)	586,152	686,740	651,835	610,582	686,246	763,366	981,697		
10	Capital Additions 7-Year Average							709,517	724,405	735,550
11	Retirements					97,092	101,860	106,252		
12	Retirements (2013$)					95,774	98,972	101,415		
13	Retirements (2016$)					100,342	103,693	106,252		
14	Retirements 3-Year Average							103,429	105,599	107,224
15	Plant Addtions for Ratebase								618,806	628,326

2. Revenue Requirement: The capital-related revenue requirement components for each attrition year are calculated using the methodologies described below:

   a) Depreciation Expense: Depreciation expense is calculated by multiplying the current PTY plant-in-service weighted average increase by the test year's system average depreciation rate. (Table-8, Lines 1-7)

   b) Ad Valorem Tax: Ad Valorem Tax is calculated by multiplying the current attrition year additions by the test year's system ad valorem tax rate. (Table-8, Lines 8-14)

   c) State Tax Depreciation: State Tax Depreciation income tax expense is calculated by multiplying the current attrition year additions by the test year's system average state tax depreciation rate and by the state income tax rate. (Table-10, Lines 10-18)

   d) Payroll Tax: Payroll Tax is calculated by multiplying the prior year payroll taxes by the current attrition year labor escalation rate forecasted by Global Insight. (Table-8, Lines 15-19)

   e) Federal Tax Depreciation: Federal Tax Depreciation income tax expense is calculated by multiplying current attrition year additions by the test year's system average federal tax depreciation rate and by the federal income tax rate. (Table-10, Lines 1-9)

   f) California Corporation Franchise Tax (Prior Year): Prior Year's state income tax is a deduction for federal income tax purposes. (Table-11, Lines 1-22)

   g) Long-Term Debt Cost: Long-Term Debt Cost is calculated by multiplying the attrition year change in weighted average rate base by the authorized weighted cost of Long Term Debt. (Table-9, Lines 4-10)

   h) Preferred Stock Cost: Preferred Stock Cost is calculated by multiplying the attrition year change in weighted average rate base by the authorized weighted return on Preferred Stock. (Table-9, Lines 11-17)

   i) Common Equity Cost: Common Equity Cost is calculated by multiplying the attrition year change in weighted average rate base by the authorized weighted return on Common Equity. (Table-9, Lines 18-25)

   j) Gross Ups: All revenue requirement components which are not directly deductible for income taxes are grossed up for income taxes. These 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 using the factors referenced in Section D.

3. Tax Law Changes: SCG'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: The total resulting O&M will be grossed up for FF&U using the franchise fee factors of 1.4336% and the uncollectible factor of 0.312%. The calculation of the gross up factor is shown below:

Table 7

Line No.	Description	
1	Revenues	1.000000
2	Uncollectible Tax Rate	0.003120
3	Uncollectible Amount Applied	1.000000
4	Less: Uncollectible (L2 * L3)	0.003120
5	Subtotal (L3 - L4)	0.996880
6	Franchise Fees Tax Rate	0.014136
7	Franchise Fees Amount Applied (L5)	0.996880
8	Less: Franchise Fees (L6 * L7)	0.014092
9	Subtotal (L7 - L8)	0.982788
10	Franchise Fee and Uncollectible Factor (1 / L9)	1.017513

Table 8

Southern California Gas Company
2016 GRC
Calculation of Revenue Requirement Increase
(Thousands of Dollars)

Line	Section-1	2016	2017	2018
	Depreciation Expense			
1	2016 Accrual	409,501		
2	/ 2016 Wtd Avg Plant in Service	11,984,893		
3	= System Average Depreciation Rate	3.42%	3.42%	3.42%
4	x Plant in Service Weighted Average Increase		792,647	621,877
5	= Increase in Depreciation Expense		27,083	21,248
6	x NTG Multiplier	1.7172063	1.7172063	1.7172063
7	= Increase in RR		46,508	36,488
	Ad Valorem Taxes			
8	2016 Ad Valorem Taxes	51,427		
9	/ 2016 Plant in Service	12,577,898		
10	= System Average Ad Valorem Tax Rate	0.41%	0.41%	0.41%
11	x Current Attrition Year Additions		618,806	628,326
12	= Increase Full Year Additions		2,530	2,569
13	x Franchise Requirements NTG	1.0145342	1.0145342	1.0145342
14	= Increase in RR		2,567	2,606
	Payroll Taxes			
15	Prior Year Payroll Taxes		48,244	49,535
16	x Current Year Labor Escalation Rate		2.68%	2.59%
17	= Increase in Full Year Additions		1,291	1,282
18	x Franchise Requirements Net-To-Gross Multiplier		1.0145342	1.0145342
19	= Increase in Revenue Requirements		1,310	1,300

Table 9

Southern California Gas Company
2016 GRC
Calculation of Revenue Requirement Increase
(Thousands of Dollars)

Section-2				
Line	Change in Weighed Average Ratebase	2016	2017	2018
1	2016 Test Year Weighted Average Ratease	4,265,837	4,265,837	
2	Weighed Average Ratebase		4,716,040	4,993,302
3	Change in Weighted Average Ratebase		450,203	277,262
	Long Term Debt			
4	Prior Year Return on Debt	5.77%	5.77%	5.77%
5	x Prior Year Debt Capitalization	45.60%	45.60%	45.60%
6	= Prior Year Weighted Cost of Debt	2.63%	2.63%	2.63%
7	x Change in Weighted Average Ratebase		450,203	277,262
8	= Change in Weighted Average Cost of Debt		11,845	7,295
9	x Franchise Requirements NTG		1.0145342	1.0145342
10	= Increase in RR		12,018	7,401
	Preferred Stock			
11	Prior Year Return on Preferred Stock	6.00%	6.00%	6.00%
12	x Prior Year Preferred Stock Capitalization	2.40%	2.40%	2.40%
13	= Prior Year Weighted Cost of Preferred Stock	0.14%	0.14%	0.14%
14	x Change in Weighted Average Ratebase		450,203	277,262
15	= Change in Weighted Cost of Preferred Stock		648	399
16	x NTG	1.7175373	1.7175373	1.7175373
17	= Increase in RR		1,113	686
	Common Equity			
18	Prior Return on Common Equity	10.10%	10.10%	10.10%
19	x Prior Year Common Equity Capitalization	52.00%	52.00%	52.00%
20	= Prior Year Weighted Cost of Common Equity	5.25%	5.25%	5.25%
21	x Change in Weighted Average Ratebase		450,203	277,262
22	= Change in Weighted Cost of Common Equity		23,645	14,562
23	x NTG	1.7175373	1.7175373	1.7175373
24	= Increase in RR		40,611	25,010
25	Total Increase in RR		53,742	33,097

Table 10

Southern California Gas Company
2016 GRC
Calculation of Revenue Requirement Increase
(Thousands of Dollars)

Section-3

Line	Federal Tax Depreciation (ACRS/MACRS Basis)	2016	2017	2018
1	2016 Federal Tax Depreciation	307,371		
2	/ 2016 Plant in Service	12,577,898		
3	= System Average Federal Tax Depreciation Rate	2.44%	2.44%	2.44%
4	x Current Attrition Year Additions		618,806	628,326
5	= Increase in Federal Tax Depreciation Expense		15,122	15,355
6	x -Federal Income Tax Rate	(0.350)	(0.350)	(0.350)
7	= Federal Income Taxes		(5,293)	(5,374)
8	x NTG	1.7175	1.7175	1.7175
9	= Increase in RR		(9,090)	(9,230)
	State Tax Depreciation			
10	2016 State Tax Depreciation	434,565		
11	/ 2016 Plant in Service	12,577,898		
12	= System Average State Tax Depreciation Rate	3.45%	3.45%	3.45%
13	x Current Attrition Year Additions		618,806	628,326
14	= Increase in State Tax Depreciation Expense		21,380	21,709
15	x -State Income Tax Rate		(0.0884)	(0.0884)
16	= State Income Taxes		(1,890)	(1,919)
17	x NTG Multiplier	1.7172063	1.7172063	1.7172063
18	= Increase in RR		(3,245)	(3,295)

Table 11

Southern California Gas Company
2016 GRC
Calculation of Revenue Requirement Increase
(Thousands of Dollars)

Section-4

Line	California Corporation Franchise Tax (Prior Year)	2017	2018
1	+ Depreciation		46,508
2	+ State Tax Depreciation		(3,245)
3	+ Federal Tax Depreciation (ACRS/MACRS)		(9,090)
4	+ Ratebase: Preferred Stock		1,113
5	+ Ratebase: Common Stock Equity		40,611
6	+ Financial Component: Preferred Stock		-
7	:Common Equity		-
8	+ CCFT		(2,374)
9	+ State & Federal Rate Changes		-
10	= RR Increase		73,521
11	x Priror Year State Income Tax Cumulative Component		0.088400
12	= Prior Year State Income Tax Increase		6,499
13	+ Prior Year State Income Tax (State Tax Depreciation Expense)		(1,890)
14	+ Prior Year State Income Tax (State Rate Change)		-
15	= Prior Year Total State Income Taxes		4,609
16	Prior Year Current California Corp Franchise Tax	13,670	18,279
17	- Prior Year CCFT Deductible for Federal Income Taxes	9,720	13,670
18	= Increase CCFT Deduction on Federal Income Taxes	3,950	4,609
19	x -Federal Income Tax Rate	(0.3500)	(0.3500)
20	= Federal Income Taxes	(1,382)	(1,613)
21	x NTG	1.7175373	1.7175373
22	Increase in RR	(2,374)	(2,771)

Table 12

(DATA INPUT: ASSET	HISTORY BY ASSET CLASS)	Additions	Additions	Additions	Additions	Additions
Asset Class	Asset Class Description	2009	2010	2011	2012	2013
(FORMULA: NARROW	DOWN TO CATEGORY)	Additions	Additions	Additions	Additions	Additions
	Intangible	5,240.00	0.00	11,000.00	1,887.99	5,717.89
	UGS	33,897,057.89	46,828,735.32	69,441,060.77	59,504,931.96	32,461,877.53
	Transmission	91,403,096.57	55,360,173.88	110,067,840.38	113,688,934.91	101,493,194.74
	Distribution	208,649,096.32	205,187,105.45	268,623,378.70	275,098,069.66	246,791,078.45
	General Plant-Non Depreciable	0.00	99,818.16	0.00	0.00	0.00
	General Plant-Buildings	7,897,914.40	5,802,499.53	36,722,947.98	26,014,731.88	3,017,044.30
	General Plant Capital Tools	1,625,072.11	1,844,754.30	3,094,761.49	2,061,055.17	2,515,375.47
	General Plant Communications	4,890,582.43	30,079,716.16	31,038,091.66	7,057,654.65	13,829,503.34
	General Plant Miscellaneous	489,908.16	1,001,465.74	265,885.13	321,178.11	675,919.90
	General Plant Computer HW & SW	54,628,382.03	128,888,719.86	88,964,232.34	139,183,600.53	181,255,916.37
	Cushion Gas	0.00	0.00	1,063,906.00	1,226,295.00	738,371.91
Total By Category		403,486,349.91	475,092,988.40	609,293,104.45	624,158,339.86	582,783,999.90

Table 13

Southern California Gas Company
Calculation of Monthly CWIP, Plant and Accumulated Depreciation Balances
(Thousands of Dollars)

Asset Type: Total Utility Plant

Line No.		2014	2015	2016
1	Beg Month CWIP Balance	230,027	264,742	301,658
2	Expenditures	672,952	757,240	918,368
3	Expenditures - AFUDC	25,777	29,552	37,434
4	Total Expenditures	698,729	786,792	955,802
5	Additions	641,625	723,690	941,478
6	Additions - AFUDC	22,389	26,186	40,218
7	Total Additions	664,014	749,876	981,697
8	End Month CWIP	264,742	301,658	275,763
9	Interest Bearing CWIP	255,357	292,567	265,396
10	Non-interest Bearing CWIP	9,386	9,091	10,367
11	End Month CWIP	264,742	301,658	275,763
12	Beg Month Plant Balance	10,487,515	11,054,437	11,702,454
13	Additions	664,014	749,876	981,697
14	Retirements	97,092	101,860	106,252
15	Transfers	0	0	0
16	End Month Plant Balance	11,054,437	11,702,454	12,577,898
17	Depreciation Accrual Accrual Monthly Rate	397,765	424,818	409,501
18	Beg Month Reserve Balance	6,025,658	6,302,821	6,599,775
19	Provision	397,765	424,818	409,501
20	Retirements	97,092	101,860	106,252
21	Salvage	1,553	1,632	1,718
22	Removal Costs	25,063	27,636	35,244
23	Transfers	0	0	0
24	End Month Reserve Balance	6,302,821	6,599,775	6,869,499