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

Application No. 17-10-___

Exhibit No.: (SCG-15-CWP)

CAPITAL WORKPAPERS TO

PREPARED DIRECT TESTIMONY

OF RICHARD D. PHILLIPS

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

OCTOBER 2017

SoCalGas

A Sempra Energy utility

2019 General Rate Case - APP

INDEX OF WORKPAPERS

Exhibit SCG-15-CWP - PIPELINE SAFETY ENHANCEMENT PLAN

Overall Summary For Exhibit No. SCG-15-CWP

Area:	**PIPELINE SAFETY ENHANCEMENT PLAN**
Witness:	**Richard D. Phillips**

	In 2016 $ (000)		
	Adjusted-Forecast		
	2017	2018	2019
A. PSEP Pipeline Replacement Project	0	0	11,179
B. Valve Enhancement Projects	4,920	8,200	68,880
C. PMO Capital Costs	667	667	9,868
Total	**5,587**	**8,867**	**89,927**

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Category: A. PSEP Pipeline Replacement Project
Workpaper: 00569A

Summary for Category: A. PSEP Pipeline Replacement Project

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	0	0	0	822
Non-Labor	0	0	0	10,357
NSE	0	0	0	0
Total	**0**	**0**	**0**	**11,179**
FTE	0.0	0.0	0.0	8.2

00569A PSEP Pipeline Projects

Labor	0	0	0	822
Non-Labor	0	0	0	10,357
NSE	0	0	0	0
Total	**0**	**0**	**0**	**11,179**
FTE	0.0	0.0	0.0	8.2

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00569A - PSEP Pipeline Projects

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: A. PSEP Pipeline Replacement Project
Category-Sub: 1. PSEP Pipeline Replacement Project
Workpaper Group: 00569A - PSEP Pipeline Projects

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

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	822
Non-Labor	Zero-Based	0	0	0	0	0	0	0	10,357
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11,179**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2

Business Purpose:

These costs are for PSEP Capital Projects that go into service in 2019. The Commission ordered this work in directing California pipeline operators to “address retrofitting pipeline to allow for in-line inspection tools” in D.11-06-017. The Supply Line 36-9-09 North (SL-36-9-09N) Section 12 Replacement Project will install 0.875 miles of pipe. The forecast also includes an allowance for pipeline test failure. Over the course of hydrotesting pipelines, a rupture can occur. To address this potential for pipeline failure during hydrotest, an allowance was added for each year in the GRC. Detailed information at a project level is contained in the supplemental workpapers included as Appendix A of SCG-15.

Physical Description:

These costs are for PSEP Capital Projects that go into service in 2019. The Supply Line 36-9-09 North (SL-36-9-09N) Section 12 Replacement Project will install 0.875 miles of pipe to replace non-piggable pipelines installed prior to 1946 with new pipe constructed using state-of-the-art methods and to modern standards, including current pressure test standards. The project is located in San Luis Obispo County southwest of the City of Santa Margarita and will be completed in 2019. The forecast also includes an allowance for pipeline test failure. Over the course of hydrotesting pipelines, a rupture can occur. To address this potential for pipeline failure during hydrotest, an allowance was added for each year in the GRC.

Project Justification:

The Commission ordered this work in directing California pipeline operators to “address retrofitting pipeline to allow for in-line inspection tools” in D.11-06-017.

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	A. PSEP Pipeline Replacement Project
Category-Sub:	1. PSEP Pipeline Replacement Project
Workpaper Group:	00569A - PSEP Pipeline Projects

Forecast Methodology:

Labor - Zero-Based

These costs are for PSEP Capital Projects that go into service in 2019. The project costs for The Supply Line 36-9-09 North (SL-36-9-09N) Section 12 Replacement Project is based on a Stage 3 estimate developed by PSEP. The forecast for the allowance for pipeline test failures was also based on an estimate developed by PSEP. The basis for the failure estimate includes the cost to replace approximately 120 feet of 30-inch pipeline and the associated costs for cleanup.

Non-Labor - Zero-Based

These costs are for PSEP Capital Projects that go into service in 2019. The project costs for The Supply Line 36-9-09 North (SL-36-9-09N) Section 12 Replacement Project is based on a Stage 3 estimate developed by PSEP. The forecast for the allowance for pipeline test failures was also based on an estimate developed by PSEP. The basis for the failure estimate includes the cost to replace approximately 120 feet of 30-inch pipeline and the associated costs for cleanup.

NSE - Zero-Based

NSE does not apply to this forecast.

Beginning of Workpaper Sub Details for
Workpaper Group 00569A

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: A. PSEP Pipeline Replacement Project
Category-Sub: 1. PSEP Pipeline Replacement Project
Workpaper Group: 00569A - PSEP Pipeline Projects
Workpaper Detail: 00569A.003 - RAMP - Base - Line 36-9-09N (sec 12) Replacement

In-Service Date: 10/31/2019

Description:

This is the forecast for PSEP replacement project SL 36-9-09N (sec 12).

Forecast In 2016 $(000)

Years	2017	2018	2019
Labor	0	0	594
Non-Labor	0	0	8,528
NSE	0	0	0
Total	**0**	**0**	**9,122**
FTE	0.0	0.0	5.9

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	A. PSEP Pipeline Replacement Project
Category-Sub:	1. PSEP Pipeline Replacement Project
Workpaper Group:	00569A - PSEP Pipeline Projects
Workpaper Detail:	00569A.003 - RAMP - Base - Line 36-9-09N (sec 12) Replacement

RAMP Item # 1

RAMP Chapter: SCG-4

Program Name: High Pressure Pipeline Replacement

Program Description: Replacement of HCA pipelines

Risk/Mitigation:

Risk: Catastrophic Damage involving High Pressure Pipeline Failure

Mitigation: Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	40,500	12,750	148,500
High	67,500	21,250	247,500

Funding Source: Other

Forecast Method: Zero-Based

Construction Start Date:

In Service Date:10/31/2019

Work Type: Mandated

Work Type Citation: DOT

Historical Embedded Cost Estimates ($000)

Embedded Costs: 6500

Explanation: 2016 Capital Costs for pre-engineering and design work to get to a class 3 estimate. This includes the cost for projects: 36-9-09, Sections 12, 14, 15, & 1636-1032 Sections 11, 12, 13, & 142001W E2000 E

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	A. PSEP Pipeline Replacement Project
Category-Sub:	1. PSEP Pipeline Replacement Project
Workpaper Group:	00569A - PSEP Pipeline Projects
Workpaper Detail:	00569A.006 - RAMP - Base - Allowance for Pipeline Test Failure
In-Service Date:	06/30/2019

Description:

Allowance for Pipeline Test Failure during Hydrotesting.

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	228
Non-Labor	0	0	1,829
NSE	0	0	0
Total	**0**	**0**	**2,057**
FTE	0.0	0.0	2.3

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	A. PSEP Pipeline Replacement Project
Category-Sub:	1. PSEP Pipeline Replacement Project
Workpaper Group:	00569A - PSEP Pipeline Projects
Workpaper Detail:	00569A.006 - RAMP - Base - Allowance for Pipeline Test Failure

RAMP Item # 1

RAMP Chapter: SCG-4

Program Name: High Pressure Pipeline Replacement

Program Description: Replacement of HCA pipelines

Risk/Mitigation:

Risk: Catastrophic Damage involving High Pressure Pipeli

Mitigation: Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	40,500	12,750	148,500
High	67,500	21,250	247,500

Funding Source: Other

Forecast Method: Zero-Based

Construction Start Date:

In Service Date:06/30/2019

Work Type: Mandated

Work Type Citation: DOT

Historical Embedded Cost Estimates ($000)

Embedded Costs: 0

Explanation: There are no costs incurred for pipeline hydrotest failures in 2016.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Category: B. Valve Enhancement Projects
Workpaper: 00569B

Summary for Category: B. Valve Enhancement Projects

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	0	540	900	7,578
Non-Labor	0	4,380	7,300	61,302
NSE	0	0	0	0
Total	**0**	**4,920**	**8,200**	**68,880**
FTE	0.0	5.4	9.0	75.8

00569B PSEP VALVE PROJECTS

Labor	0	540	900	7,578
Non-Labor	0	4,380	7,300	61,302
NSE	0	0	0	0
Total	**0**	**4,920**	**8,200**	**68,880**
FTE	0.0	5.4	9.0	75.8

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00569B - PSEP VALVE PROJECTS

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: B. Valve Enhancement Projects
Category-Sub: 1. Valve Enhancement Projects
Workpaper Group: 00569B - PSEP VALVE PROJECTS

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

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	540	900	7,578
Non-Labor	Zero-Based	0	0	0	0	0	4,380	7,300	61,302
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**4,920**	**8,200**	**68,880**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	5.4	9.0	75.8

Business Purpose:

Continued implementation of the Valve Enhancement Plan included in the overall PSEP approved by the Commission in D.14-06-007. We expect to complete PSEP Valve projects in each of the GRC Years at an annual cost of $82 million. Detailed information at a project level is contained in the supplemental workpapers included as Appendix A of SCG-15.

Physical Description:

Execution of 284 Valve Enhancement Plan projects encompassing the following different types of enhancements: 1) Installation of new Automatic Shut-off Valves (ASV)/Remote Control Valves (RCV) on transmission pipelines, 2) Installation of new backflow prevention devices, either with check valve installations or through modifications to existing regulator stations, 3) Installation of new communications technology to enhance existing valve sites already equipped with ASC/RCV technology, and 4) Installation of new flow meters on major transmission pipelines and at major interconnection points.

Project Justification:

Enhances system safety by supporting the automatic and remote isolation of transmission pipelines operated in more populated areas within 30 minutes or less in the event of a pipeline rupture.

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	B. Valve Enhancement Projects
Category-Sub:	1. Valve Enhancement Projects
Workpaper Group:	00569B - PSEP VALVE PROJECTS

Forecast Methodology:

Labor - Zero-Based

The cost estimates for PSEP valve installations were derived by averaging installed costs for recent valve enhancement projects of similar scope from years 2015 through 2017.

Non-Labor - Zero-Based

The cost estimates for PSEP valve installations were derived by averaging installed costs for recent valve enhancement projects of similar scope from years 2015 through 2017.

NSE - Zero-Based

NSE does not apply to this forecast.

Beginning of Workpaper Sub Details for
Workpaper Group 00569B

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	B. Valve Enhancement Projects
Category-Sub:	1. Valve Enhancement Projects
Workpaper Group:	00569B - PSEP VALVE PROJECTS
Workpaper Detail:	00569B.001 - RAMP - Base - PSEP VALVE PROJECT BUNDLE 2019
In-Service Date:	06/30/2019

Description:

Forecast for Bundle of 2019 PSEP Valve Projects. Used Mid-Year convention for "in service" dates.

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	540	900	7,578
Non-Labor	4,380	7,300	61,302
NSE	0	0	0
Total	**4,920**	**8,200**	**68,880**
FTE	5.4	9.0	75.8

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: B. Valve Enhancement Projects
Category-Sub: 1. Valve Enhancement Projects
Workpaper Group: 00569B - PSEP VALVE PROJECTS
Workpaper Detail: 00569B.001 - RAMP - Base - PSEP VALVE PROJECT BUNDLE 2019

RAMP Item # 1

RAMP Chapter: SCG-4

Program Name: Transmission Valve Automation and Replacement

Program Description: High pressure pipeline valve automation to help improve response of valve shut-ins

Risk/Mitigation:

Risk: Catastrophic Damage involving High Pressure Pipeli

Mitigation: Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	55,500	55,500	52,500
High	92,500	92,500	87,500

Funding Source: Other
Forecast Method: Zero-Based
Construction Start Date:
In Service Date:06/30/2019
Work Type: Mandated
Work Type Citation: DOT

Historical Embedded Cost Estimates ($000)

Embedded Costs: 51512

Explanation: This is the actual costs for 2016 Valve Enhancement Projects

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Category: C. PMO Capital Costs
Workpaper: 00569C

Summary for Category: C. PMO Capital Costs

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	0	0	0	3,840
Non-Labor	0	667	667	6,028
NSE	0	0	0	0
Total	**0**	**667**	**667**	**9,868**
FTE	0.0	0.0	0.0	38.4

00569C PSEP PMO Project

Labor	0	0	0	3,840
Non-Labor	0	667	667	6,028
NSE	0	0	0	0
Total	**0**	**667**	**667**	**9,868**
FTE	0.0	0.0	0.0	38.4

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00569C - PSEP PMO Project

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: C. PMO Capital Costs
Category-Sub: 1. PMO Capital Costs
Workpaper Group: 00569C - PSEP PMO Project

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

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	3,840
Non-Labor	Zero-Based	0	0	0	0	0	667	667	6,028
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**667**	**667**	**9,868**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.4

Business Purpose:

The PSEP Project Management Office (PMO) provides governance and management that enable the PSEP program to effectively achieve their objectives. The PMO ensures compliance with regulatory requirements, facilitate and implement continuous work improvement, and establishes controls across all PSEP functional teams. The PSEP PMO costs included in this forecast represents those PSEP organizational costs that are not charged to individual projects.

Physical Description:

Labor and non-labor associated with the PSEP Senior Director, Budget and Administration Group, and PMO Group. In addition, PSEP Construction and PSEP Project Execution personnel's time that is not charged directly to PSEP projects.

Project Justification:

Provide governance and management of PSEP to comply with applicable regulatory requirements, continuously improve, and establish proper controls and management to verify that project design, material procurement, construction, and project closeout is performed correctly and consistently.

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	Richard D. Phillips
Budget Code:	00569.0
Category:	C. PMO Capital Costs
Category-Sub:	1. PMO Capital Costs
Workpaper Group:	00569C - PSEP PMO Project

Forecast Methodology:

Labor - Zero-Based

SoCalGas developed a forecast of the Annual PSEP PMO costs. The size of the PSEP PMO Staff was determined based on the prior PMO experience and the forecasted PSEP project scope and activity.

Non-Labor - Zero-Based

The PMO forecast is made up of PSEP PMO PSEP PMO Contractors, Material Storage and Warehousing, and Software Licensing. The size of the PSEP PMO contract labor staff was determined based on the prior PMO experience and the forecasted PSEP project scope and activity. The forecast for material storage and warehouse and software licensing are based on prior experience with vendors and contractors.

NSE - Zero-Based

NSE does not apply to this forecast.

Beginning of Workpaper Sub Details for
Workpaper Group 00569C

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: C. PMO Capital Costs
Category-Sub: 1. PMO Capital Costs
Workpaper Group: 00569C - PSEP PMO Project
Workpaper Detail: 00569C.001 - RAMP - Base - VMS Project

In-Service Date: 06/30/2019

Description:

VMS Software will enhance the company s ability to manage vendors and provide accurate and timely reporting.

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	667	667	666
NSE	0	0	0
Total	**667**	**667**	**666**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: C. PMO Capital Costs
Category-Sub: 1. PMO Capital Costs
Workpaper Group: 00569C - PSEP PMO Project
Workpaper Detail: 00569C.001 - RAMP - Base - VMS Project

RAMP Item # 1

RAMP Chapter: SCG-4

Program Name: High Pressure Pipeline Replacement

Program Description: Replacement of HCA Pipelines.

Risk/Mitigation:

Risk: Catastrophic Damage involving High Pressure Pipeline Failure

Mitigation: Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	40,500	12,750	148,500
High	67,500	21,250	247,500

Funding Source: Other
Forecast Method: Zero-Based
Construction Start Date:
In Service Date:06/30/2019
Work Type: Mandated
Work Type Citation: DOT

Historical Embedded Cost Estimates ($000)

Embedded Costs: 574

Explanation: These are the VMS Implementation no costs incurred for the Vendor Management System to 2016,

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: C. PMO Capital Costs
Category-Sub: 1. PMO Capital Costs
Workpaper Group: 00569C - PSEP PMO Project
Workpaper Detail: 00569C.002 - RAMP - Base - PSEP PMO Costs

In-Service Date: Not Applicable

Description:

This is for the Capital portion of the PSEP PMO Costs.

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	3,840
Non-Labor	0	0	5,362
NSE	0	0	0
Total	**0**	**0**	**9,202**
FTE	0.0	0.0	38.4

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: Richard D. Phillips
Budget Code: 00569.0
Category: C. PMO Capital Costs
Category-Sub: 1. PMO Capital Costs
Workpaper Group: 00569C - PSEP PMO Project
Workpaper Detail: 00569C.002 - RAMP - Base - PSEP PMO Costs

RAMP Item # 1

RAMP Chapter: SCG-4

Program Name: High Pressure Pipeline Replacement

Program Description: Replacement of HCA Pipelines

Risk/Mitigation:

Risk: Catastrophic Damage involving High Pressure Pipeline Failure

Mitigation: Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not meet current records criteria. Program has continuous monitoring and priortizing of lines with timely

Forecast CPUC Cost Estimates ($000)

	2017	2018	2019
Low	40,500	12,750	148,500
High	67,500	21,250	247,500

Funding Source: Other

Forecast Method: Zero-Based

Work Type: Mandated

Work Type Citation: DOT

Historical Embedded Cost Estimates ($000)

Embedded Costs: 10352

Explanation: These are the PSEP PMO costs embeded in 2016.