Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2024 (U 904-G))

Application No. 22-05-___

Exhibit No.: (SCG-08-CWP)

CAPITAL WORKPAPERS TO

PREPARED DIRECT TESTIMONY

OF WILLIAM G. KOSTELNIK

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

May 2022

2024 General Rate Case - APP

INDEX OF WORKPAPERS

Exhibit SCG-08-CWP - PIPELINE SAFETY ENHANCEMENT PLAN

Overall Summary For Exhibit No. SCG-08-CWP

Area:	**PIPELINE SAFETY ENHANCEMENT PLAN**
Witness:	**William G. Kostelnik**

	In 2021 $ (000)		
	Adjusted-Forecast		
	2022	2023	2024
A. PSEP Pipeline Replacements	69,149	68,356	65,146
B. PSEP Valves	72,360	33,564	8,664
Total	**141,509**	**101,920**	**73,810**

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Category: A. PSEP Pipeline Replacements
Workpaper: VARIOUS

Summary for Category: A. PSEP Pipeline Replacements

	In 2021$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	0	3,554	3,704	4,796
Non-Labor	0	65,595	64,652	60,350
NSE	0	0	0	0
Total	**0**	**69,149**	**68,356**	**65,146**
FTE	0.0	26.8	20.0	33.9
00512A PSEP P2A Capital Replacements of Hydrotests				
Labor	0	880	720	1,234
Non-Labor	0	16,197	12,991	20,989
NSE	0	0	0	0
Total	**0**	**17,077**	**13,711**	**22,223**
FTE	0.0	11.5	2.4	8.1
00512B PSEP P1B Replacements				
Labor	0	1,942	2,684	1,055
Non-Labor	0	35,872	49,693	18,888
NSE	0	0	0	0
Total	**0**	**37,814**	**52,377**	**19,943**
FTE	0.0	11.0	15.4	7.7
00512C PSEP P2A Replacements				
Labor	0	732	300	2,507
Non-Labor	0	13,526	1,968	20,473
NSE	0	0	0	0
Total	**0**	**14,258**	**2,268**	**22,980**
FTE	0.0	4.3	2.2	18.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00512A - PSEP P2A Capital Replacements of Hydrotests

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512A - PSEP P2A Capital Replacements of Hydrotests

Summary of Results (Constant 2021 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor	Zero-Based	0	0	0	0	0	880	720	1,234
Non-Labor	Zero-Based	0	0	0	0	0	16,197	12,991	20,989
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**17,077**	**13,711**	**22,223**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	11.5	2.4	8.1

Business Purpose:

These costs represent the capital components of Phase 2A hydrotests that are scheduled to be placed in service from 2022-2024. The Commission ordered this work in directing California pipeline operators to “to replace or pressure test all natural gas transmission pipeline in California that has not been tested or for which reliable records are not available.” in D.11-06-017.

Physical Description:

These costs represent the capital components of Phase 2A hydrotests that are scheduled to be placed in service from 2022-2024. Such costs include removal and replacement of non-piggable features, integrity anomalies, and small sections of pipe where test heads will be installed to facilitate the test. O&M costs associated with these hydrotests are addressed in workpaper 2PS000.000. A total of 11 hydrotest projects are scheduled to be placed in service during the forecast period of 2022-2024. Detailed information at a project level is contained in the supplemental workpapers included as Exhibit No. SCG-08-WPS, Volume I. Over the course of hydrotesting pipelines, a test failure can occur, necessitating a pipeline repair. To address this potential for test failure during hydrotest, an allowance was added for each year in the GRC. The methodology for calculating the allowance for test failures is included in the Construction Miscellaneous costs supplemental workpaper included as Exhibit No. SCG-08-WPS, Volume VI.

Project Justification:

The Commission ordered this work in directing California pipeline operators to “to replace or pressure test all natural gas transmission pipeline in California that has not been tested or for which reliable records are not available.” in D. 11-06-017.

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests

Forecast Methodology:

Labor - Zero-Based

Labor costs are taken from project-specific Class 3 and 4 estimates developed by PSEP following the Association for the Advancement of Cost Engineering (AACE) estimating standards per industry practices. This method is most appropriate because each PSEP project is unique in scope, size, and complexity.

Non-Labor - Zero-Based

Non-labor costs are taken from project-specific Class 3 and 4 estimates developed by PSEP following the Association for the Advancement of Cost Engineering (AACE) estimating standards per industry practices. The forecast for the allowance for pipeline test failures was also based on an estimate developed by PSEP. The basis for the failure estimate reflects historical incidences of failure events and the capital costs incurred to remediate the causes of the failures. This method is most appropriate because each PSEP project is unique in scope, size, and complexity.

NSE - Zero-Based

Not applicable.

Beginning of Workpaper Sub Details for
Workpaper Group 00512A

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.001 - RAMP PSEP-L2001W-E-P2 (P2A Capital Portion of Hydrotest)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	157	0	0
Non-Labor	2,907	0	0
NSE	0	0	0
Total	**3,064**	**0**	**0**
FTE	2.1	0.0	0.0

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail: 00512A.001 - RAMP PSEP-L2001W-E-P2 (P2A Capital Portion of Hydrotest)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C22-T3.4

RAMP Line Item Name: P2A Capital Replacements for Hydrotests Non-HCA (GRC Base)

Tranche(s): Tranche1: N/A; Tranche2: N/A; Tranche3: N/A; Tranche4: T3.4 Non-HCA

GRC Forecast Cost Estimates ($000)

	2021 Historical Embedded Costs (2021 $)	2022 Forecast (2021 $)	2023 Forecast (2021 $)	2024 Forecast (2021 $)	2022 to 2024 Forecast (2021 $)	2022 to 2024 RAMP Range (2020 Incurred $) Low	High
Tranche 1 Cost Estimate	0	0	0	0	0	0	0
Tranche 2 Cost Estimate	0	0	0	0	0	0	0
Tranche 3 Cost Estimate	0	0	0	0	0	0	0
Tranche 4 Cost Estimate	24,013	17,077	13,711	20,111	50,899	74,845	90,601

Cost Estimate Changes from RAMP:
Any variances between forecasted costs for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 3 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 4 Miles of Pipe	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Work Unit Changes from RAMP:
Units for hydrotest projects are represented in the Hydrotesting (Phase 2A GRC Base, O&M) tranche.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.001 - RAMP PSEP-L2001W-E-P2 (P2A Capital Portion of Hydrotest)

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	0.000	0.000
Tranche 3	0.000	0.000
Tranche 4	0.000	0.000

RSE Changes from RAMP:
RSEs for hydrotest projects are represented in the Hydrotesting (Phase 2A GRC Base, O&M) tranche.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.002 - RAMP PSEP-L235W-P2-SEC 3 (P2A Capital Portion of Hydrotest) (Same RAMP Item as 0512A.001)
In-Service Date:	11/30/2023

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	180	0
Non-Labor	96	3,676	0
NSE	0	0	0
Total	**96**	**3,856**	**0**
FTE	0.0	0.1	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.003 - Allowance for Test Failures (P2A Capital Portion of Hydrotests)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	0	156
Non-Labor	0	0	1,956
NSE	0	0	0
Total	**0**	**0**	**2,112**
FTE	0.0	0.0	0.6

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail: 00512A.004 - RAMP PSEP-L3000E-P2-01 (P2A Capital Portion of Hydrotests) (Same RAMP Item as 512A.001)
In-Service Date: 11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	12	12	779
Non-Labor	204	204	16,837
NSE	0	0	0
Total	**216**	**216**	**17,616**
FTE	0.1	0.1	4.9

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.005 - RAMP PSEP-L2001E-P2-Blyt-1030 Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 00512A.001)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	361	0	0
Non-Labor	6,666	0	0
NSE	0	0	0
Total	**7,027**	**0**	**0**
FTE	4.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.006 - RAMP PSEP-L2001W-D-P2 Test (P2A Capitap Portion of Hydrotest) (Same RAMP Item as 512A.001)
In-Service Date:	11/30/2023

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	3	85	0
Non-Labor	48	1,664	0
NSE	0	0	0
Total	**51**	**1,749**	**0**
FTE	0.1	0.1	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.007 - RAMP PSEP-L1030-P2-Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 512A.001)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	145	0	0
Non-Labor	2,700	0	0
NSE	0	0	0
Total	**2,845**	**0**	**0**
FTE	2.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.008 - RAMP PSEP-L2000-P2-Chino Hills Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 512A.001)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	179	0	0
Non-Labor	3,276	0	0
NSE	0	0	0
Total	**3,455**	**0**	**0**
FTE	1.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.009 - RAMP PSEP-L1005-P2-01 Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 00512A.001)
In-Service Date:	11/30/2023

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	5	311	0
Non-Labor	84	5,041	0
NSE	0	0	0
Total	**89**	**5,352**	**0**
FTE	0.1	1.7	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.010 - RAMP PSEP-L406-GRC-Sec 15 Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 00512A.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	6	6	156
Non-Labor	48	48	1,175
NSE	0	0	0
Total	**54**	**54**	**1,331**
FTE	0.1	0.1	1.3

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.011 - RAMP PSEP-L406-GRC-Sec 16 Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 00512A.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	5	5	143
Non-Labor	36	36	1,021
NSE	0	0	0
Total	**41**	**41**	**1,164**
FTE	0.1	0.1	1.3

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512A - PSEP P2A Capital Replacements of Hydrotests
Workpaper Detail:	00512A.012 - RAMP PSEP-L2001W-D-BADL-P2 Test (P2A Capital Portion of Hydrotest) (Same RAMP Item as 00512A.001)
In-Service Date:	11/30/2023

Description:

Forecasted costs and units for this project are included in the RAMP table for workpapers 512A and 2PS000.000, respectively.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	7	121	0
Non-Labor	132	2,322	0
NSE	0	0	0
Total	**139**	**2,443**	**0**
FTE	0.1	0.2	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00512B - PSEP P1B Replacements

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512B - PSEP P1B Replacements

Summary of Results (Constant 2021 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor	Zero-Based	0	0	0	0	0	1,942	2,684	1,055
Non-Labor	Zero-Based	0	0	0	0	0	35,872	49,693	18,888
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**37,814**	**52,377**	**19,943**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	11.0	15.4	7.7

Business Purpose:

These costs represent Phase 1B replacement projects that are scheduled to be placed in service from 2022-2024. 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.

Physical Description:

These costs represent Phase 1B replacement projects that are scheduled to be placed in service from 2022-2024. A total of 6 replacement projects are scheduled to be placed in service during the forecast period of 2022-2024. Detailed information at a project level is contained in the supplemental workpapers included as Exhibit No. SCG-08-WPS, Volume I.

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:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512B - PSEP P1B Replacements

Forecast Methodology:

Labor - Zero-Based

Labor costs are taken from project-specific Class 3 and 4 estimates developed by PSEP following the Association for the Advancement of Cost Engineering (AACE) estimating standards per industry practices. This method is most appropriate because each PSEP project is unique in scope, size, and complexity.

Non-Labor - Zero-Based

Non-labor costs are taken from project-specific Class 3 and 4 estimates developed by PSEP following the Association for the Advancement of Cost Engineering (AACE) estimating standards per industry practices. This method is most appropriate because each PSEP project is unique in scope, size, and complexity.

NSE - Zero-Based

Not applicable.

Beginning of Workpaper Sub Details for
Workpaper Group 00512B

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512B - PSEP P1B Replacements
Workpaper Detail: 00512B.001 - RAMP L-85 PH-Section 1:EHR to Lake Station (P1B Replacement)

In-Service Date: 11/30/2023

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	948	2,612	0
Non-Labor	17,568	48,337	0
NSE	0	0	0
Total	**18,516**	**50,949**	**0**
FTE	5.4	14.9	0.0

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512B - PSEP P1B Replacements
Workpaper Detail: 00512B.001 - RAMP L-85 PH-Section 1:EHR to Lake Station (P1B Replacement)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C22-T2.4

RAMP Line Item Name: PSEP Phase 1B Pipeline Replacement Non-HCA (GRC Base)

Tranche(s): Tranche1: N/A; Tranche2: N/A; Tranche3: N/A; Tranche4: T2.4 Non-HCA

GRC Forecast Cost Estimates ($000)

	2021 Historical Embedded Costs (2021 $)	2022 Forecast (2021 $)	2023 Forecast (2021 $)	2024 Forecast (2021 $)	2022 to 2024 Forecast (2021 $)	2022 to 2024 RAMP Range (2020 Incurred $) Low	High
Tranche 1 Cost Estimate	0	0	0	0	0	0	0
Tranche 2 Cost Estimate	0	0	0	0	0	0	0
Tranche 3 Cost Estimate	0	0	0	0	0	0	0
Tranche 4 Cost Estimate	82,152	37,814	52,377	19,943	110,134	65,785	79,634

Cost Estimate Changes from RAMP:
Any variances between forecasted costs for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 3 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 4 Miles of Pipe	23.66	5.76	13.03	6.73	25.52	19.00	23.00

Work Unit Changes from RAMP:
Any variances between forecasted units for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512B - PSEP P1B Replacements
Workpaper Detail:	00512B.001 - RAMP L-85 PH-Section 1:EHR to Lake Station (P1B Replacement)

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	0.000	0.000
Tranche 3	0.000	0.000
Tranche 4	4.500	5.700

RSE Changes from RAMP:
Changes to risks scores or Risk Spend Efficiency (RSE) values are primarily due to changes in the Multi-Attribute Value Framework (MAVF) and RSE methodology, as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512B - PSEP P1B Replacements
Workpaper Detail:	00512B.002 - RAMP PSEP-SL44-1008-P1B-01 (P1B Replacement) (Same RAMP Item as 00512B.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	24	48
Non-Labor	0	468	887
NSE	0	0	0
Total	**0**	**492**	**935**
FTE	0.0	0.1	0.3

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512B - PSEP P1B Replacements
Workpaper Detail: 00512B.003 - RAMP PSEP-SL38-143-P1B (P1B Replacement) (Same RAMP Item as 00512B.001)

In-Service Date: 11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	24	360
Non-Labor	0	240	3,649
NSE	0	0	0
Total	**0**	**264**	**4,009**
FTE	0.0	0.1	1.1

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512B - PSEP P1B Replacements
Workpaper Detail:	00512B.004 - RAMP PSEP-L1004-P1B-Sec 2 Repl (P1B Replacement) (Same RAMP Item as 00512B.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	24	647
Non-Labor	0	648	14,352
NSE	0	0	0
Total	**0**	**672**	**14,999**
FTE	0.0	0.3	6.3

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512B - PSEP P1B Replacements
Workpaper Detail:	00512B.005 - RAMP PSEP-SL36-1032-P1B-13 (P1B Replacement) (Same RAMP Item as 00512B.001)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	264	0	0
Non-Labor	4,895	0	0
NSE	0	0	0
Total	**5,159**	**0**	**0**
FTE	1.5	0.0	0.0

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512B - PSEP P1B Replacements
Workpaper Detail: 00512B.006 - RAMP PSEP-SL36-1032-P1B-14 (P1B Replacement) (Same RAMP Item as 00512B.001)
In-Service Date: 11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	443	0	0
Non-Labor	8,148	0	0
NSE	0	0	0
Total	**8,591**	**0**	**0**
FTE	2.5	0.0	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512B - PSEP P1B Replacements
Workpaper Detail:	00512B.007 - RAMP PSEP-SL36-9-09N-P1B-15 (P1B Replacement) (Same RAMP Item as 00512B.001)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512B.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	287	0	0
Non-Labor	5,261	0	0
NSE	0	0	0
Total	**5,548**	**0**	**0**
FTE	1.6	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00512C - PSEP P2A Replacements

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512C - PSEP P2A Replacements

Summary of Results (Constant 2021 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor	Zero-Based	0	0	0	0	0	732	300	2,507
Non-Labor	Zero-Based	0	0	0	0	0	13,526	1,968	20,473
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**14,258**	**2,268**	**22,980**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	4.3	2.2	18.1

Business Purpose:

These costs represent Phase 2A replacement projects that are scheduled to be placed in service from 2022-2024. The Commission ordered this work in directing California pipeline operators to “to replace or pressure test all natural gas transmission pipeline in California that has not been tested or for which reliable records are not available.” in D. 11-06-017.

Physical Description:

These costs represent Phase 2A replacement projects that are scheduled to be placed in service from 2022-2024. A total of 10 replacement projects are scheduled to be placed in service during the forecast period of 2022-2024. Detailed information at a project level is contained in the supplemental workpapers included as Exhibit No. SCG-08-WPS, Volume I.

Project Justification:

The Commission ordered this work in directing California pipeline operators to “to replace or pressure test all natural gas transmission pipeline in California that has not been tested or for which reliable records are not available.” in D. 11-06-017

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements

Forecast Methodology:

Labor - Zero-Based

Labor costs are taken from project-specific Class 3 and 4 estimates developed by PSEP following the Association for the Advancement of Cost Engineering (AACE) estimating standards per industry practices. This method is most appropriate because each PSEP project is unique in scope, size, and complexity.

Non-Labor - Zero-Based

Non-labor costs are taken from project-specific Class 3 and 4 estimates developed by PSEP following the Association for the Advancement of Cost Engineering (AACE) estimating standards per industry practices. This method is most appropriate because each PSEP project is unique in scope, size, and complexity.

NSE - Zero-Based

Not applicable.

Beginning of Workpaper Sub Details for
Workpaper Group 00512C

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.001 - RAMP PSEP-L133-P2-01 (P2A Replacement)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	48	443
Non-Labor	0	408	3,828
NSE	0	0	0
Total	**0**	**456**	**4,271**
FTE	0.0	0.3	2.8

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512C - PSEP P2A Replacements
Workpaper Detail: 00512C.001 - RAMP PSEP-L133-P2-01 (P2A Replacement)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C22-T3.2

RAMP Line Item Name: P2A Replacements Non-HCA (GRC Base)

Tranche(s): Tranche1: N/A; Tranche2: T3.2 Non-HCA

GRC Forecast Cost Estimates ($000)

	2021 Historical Embedded Costs (2021 $)	2022 Forecast (2021 $)	2023 Forecast (2021 $)	2024 Forecast (2021 $)	2022 to 2024 Forecast (2021 $)	2022 to 2024 RAMP Range (2020 Incurred $) Low	High
Tranche 1 Cost Estimate	0	0	0	0	0	0	0
Tranche 2 Cost Estimate	15,238	14,258	2,268	22,980	39,506	88,982	107,715

Cost Estimate Changes from RAMP:
Any variances between forecasted costs for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 Miles of Pipe	0.57	0.34	0.00	19.81	20.15	28.00	33.00

Work Unit Changes from RAMP:
Any variances between forecasted units for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	61.600	220.300

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.001 - RAMP PSEP-L133-P2-01 (P2A Replacement)

RSE Changes from RAMP:
Changes to risks scores or Risk Spend Efficiency (RSE) values are primarily due to changes in the Multi-Attribute Value Framework (MAVF) and RSE methodology, as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512C - PSEP P2A Replacements
Workpaper Detail: 00512C.002 - RAMP PSEP-L235E-P2-Kelso REPL (P2A Replacement) (Same RAMP Item as 00512C.001)
In-Service Date: 11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	12	396
Non-Labor	0	108	2,760
NSE	0	0	0
Total	**0**	**120**	**3,156**
FTE	0.0	0.1	2.8

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.003 - RAMP PSEP-SL44-707-P2-01 (P2A Replacement) (Same RAMP Item as 00512C.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	132	203
Non-Labor	0	588	936
NSE	0	0	0
Total	**0**	**720**	**1,139**
FTE	0.0	0.7	1.0

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512C - PSEP P2A Replacements
Workpaper Detail: 00512C.004 - RAMP PSEP-SL38-2101-P2A (P2A Replacement) (Same RAMP Item as 00512C.001)

In-Service Date: 11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	0	349
Non-Labor	0	0	1,933
NSE	0	0	0
Total	**0**	**0**	**2,282**
FTE	0.0	0.0	0.7

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.005 - RAMP PSEP-SL44-729-P2-01 (P2A Replacement) (Same RAMP Item as 00512C.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	0	144
Non-Labor	0	0	852
NSE	0	0	0
Total	**0**	**0**	**996**
FTE	0.0	0.0	2.1

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.006 - RAMP PSEP-SL38-100-P2-01 (P2A Replacement) (Same RAMP Item as 00512C.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	48	133
Non-Labor	0	144	456
NSE	0	0	0
Total	**0**	**192**	**589**
FTE	0.0	0.5	1.6

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.007 - RAMP PSEP-L41-6000-1-P2A (P2A Replacement) (Same RAMP Item as 00512C.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	0	36	407
Non-Labor	0	396	4,091
NSE	0	0	0
Total	**0**	**432**	**4,498**
FTE	0.0	0.4	4.0

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00512.0
Category: A. PSEP Pipeline Replacements
Category-Sub: 1. P2A Replacement of Hydrotest
Workpaper Group: 00512C - PSEP P2A Replacements
Workpaper Detail: 00512C.008 - RAMP PSEP-L2000-P2-Cactus City Station (P2A Replacements) (Same RAMP Item as 00512C.001)
In-Service Date: 11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	659	0	0
Non-Labor	12,169	0	0
NSE	0	0	0
Total	**12,828**	**0**	**0**
FTE	3.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.009 - RAMP PSEP-L5000-P2-Blythe Repl (P2A Replacement) (Same RAMP Item as 00512C.001)
In-Service Date:	11/30/2022

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	61	0	0
Non-Labor	1,201	0	0
NSE	0	0	0
Total	**1,262**	**0**	**0**
FTE	0.4	0.0	0.0

Note: Totals may include rounding differences.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00512.0
Category:	A. PSEP Pipeline Replacements
Category-Sub:	1. P2A Replacement of Hydrotest
Workpaper Group:	00512C - PSEP P2A Replacements
Workpaper Detail:	00512C.010 - RAMP PSEP-L225-P2-02-North Coles Levee (P2A Replacements) (Same RAMP Item as 512C.001)
In-Service Date:	11/30/2024

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 512C.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	12	24	432
Non-Labor	156	324	5,617
NSE	0	0	0
Total	**168**	**348**	**6,049**
FTE	0.1	0.2	3.1

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Category: B. PSEP Valves
Workpaper: 00571A

Summary for Category: B. PSEP Valves

	In 2021$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	0	5,412	2,508	648
Non-Labor	0	66,948	31,056	8,016
NSE	0	0	0	0
Total	**0**	**72,360**	**33,564**	**8,664**
FTE	0.0	21.1	9.8	2.5

00571A PSEP Valves

Labor	0	5,412	2,508	648
Non-Labor	0	66,948	31,056	8,016
NSE	0	0	0	0
Total	**0**	**72,360**	**33,564**	**8,664**
FTE	0.0	21.1	9.8	2.5

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00571A - PSEP Valves

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00571.0
Category: B. PSEP Valves
Category-Sub: 1. HCA Valves
Workpaper Group: 00571A - PSEP Valves

Summary of Results (Constant 2021 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor	Zero-Based	0	0	0	0	0	5,412	2,508	648
Non-Labor	Zero-Based	0	0	0	0	0	66,948	31,056	8,016
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**72,360**	**33,564**	**8,664**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	21.1	9.8	2.5

Business Purpose:

These costs represent the continued implementation of the Valve Enhancement Plan included in the overall PSEP approved by the Commission in D.14-06-007.

Physical Description:

Execution of 75 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. Detailed information at a project level is contained in the supplemental workpapers included as Exhibit No. SCG-08-WPS, Volume I.

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:	William G. Kostelnik
Budget Code:	00571.0
Category:	B. PSEP Valves
Category-Sub:	1. HCA Valves
Workpaper Group:	00571A - PSEP Valves

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 2021.

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 2021.

NSE - Zero-Based

Not applicable.

Beginning of Workpaper Sub Details for
Workpaper Group 00571A

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00571.0
Category: B. PSEP Valves
Category-Sub: 1. HCA Valves
Workpaper Group: 00571A - PSEP Valves
Workpaper Detail: 00571A.001 - RAMP Remaining GRC Valves - HCA

In-Service Date: Not Applicable

Description:

Forecasted costs and units for this project are included in the RAMP table for workpaper 571A.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	4,620	2,196	288
Non-Labor	57,192	27,192	3,492
NSE	0	0	0
Total	**61,812**	**29,388**	**3,780**
FTE	18.0	8.6	1.1

Note: Totals may include rounding differences.

Area: PIPELINE SAFETY ENHANCEMENT PLAN
Witness: William G. Kostelnik
Budget Code: 00571.0
Category: B. PSEP Valves
Category-Sub: 1. HCA Valves
Workpaper Group: 00571A - PSEP Valves
Workpaper Detail: 00571A.001 - RAMP Remaining GRC Valves - HCA

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C22-T4.3 & T4.4

RAMP Line Item Name: Valve Enhancement (GRC base)

Tranche(s): Tranche1: N/A; Tranche2: N/A; Tranche3: C22-T4.3 Valve Enhancement HCA; Tranche4: C22-T4.4 Valve Enhancement Non-HCA

GRC Forecast Cost Estimates ($000)

	2021 Historical Embedded Costs (2021 $)	2022 Forecast (2021 $)	2023 Forecast (2021 $)	2024 Forecast (2021 $)	2022 to 2024 Forecast (2021 $)	2022 to 2024 RAMP Range (2020 Incurred $) Low	High
Tranche 1 Cost Estimate	0	0	0	0	0	0	0
Tranche 2 Cost Estimate	0	0	0	0	0	0	0
Tranche 3 Cost Estimate	40,329	61,812	29,388	3,780	94,980	27,253	32,990
Tranche 4 Cost Estimate	4,305	10,548	4,176	4,884	19,608	5,166	6,253

Cost Estimate Changes from RAMP:
Any variances between forecasted costs for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities Low	High
Tranche 1 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 2 N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tranche 3 Each Bundle	12.00	33.00	17.00	6.00	56.00	13.00	16.00
Tranche 4 Each Bundle	1.00	15.00	3.00	1.00	19.00	2.00	2.00

Work Unit Changes from RAMP:
Any variances between forecasted units for specific RAMP activities presented in testimony with those presented in the 2021 RAMP filing are attributed to the refinement of PSEP project costs and schedules that have occurred subsequent to the filing of the RAMP report in 2021.

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00571.0
Category:	B. PSEP Valves
Category-Sub:	1. HCA Valves
Workpaper Group:	00571A - PSEP Valves
Workpaper Detail:	00571A.001 - RAMP Remaining GRC Valves - HCA

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000
Tranche 2	0.000	0.000
Tranche 3	94.500	276.400
Tranche 4	17.300	743.200

RSE Changes from RAMP:
Changes to risks scores or Risk Spend Efficiency (RSE) values are primarily due to changes in the Multi-Attribute Value Framework (MAVF) and RSE methodology, as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory Flores (Ex. SCG-03/SDG&E-03, Chapter 2).

Area:	PIPELINE SAFETY ENHANCEMENT PLAN
Witness:	William G. Kostelnik
Budget Code:	00571.0
Category:	B. PSEP Valves
Category-Sub:	1. HCA Valves
Workpaper Group:	00571A - PSEP Valves
Workpaper Detail:	00571A.002 - RAMP Remaining GRC Valves - Non-HCA (Same RAMP Item as 00571A.001)
In-Service Date:	Not Applicable

Description:

Forecasteed costs and units for this project are included in the RAMP table for workpaper 571A.

Forecast In 2021 $(000)			
Years	**2022**	**2023**	**2024**
Labor	792	312	360
Non-Labor	9,756	3,864	4,524
NSE	0	0	0
Total	**10,548**	**4,176**	**4,884**
FTE	3.1	1.2	1.4

Note: Totals may include rounding differences.