

SOUTHERN CALIFORNIA GAS COMPANY

Risk Assessment and Mitigation Phase

2025 Report

Chapter: SCG-Risk-3

Number: SCG-R03-CWP

Medium Pressure Gas System Capital Workpapers

SOUTHERN CALIFORNIA GAS COMPANY

May 15, 2025



2025 Risk Assessment & Mitigation Phase

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Risk Chapter 2CR03: SCG-RISK-3 MEDIUM PRESSURE GAS SYSTEM

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Summary of Risk Chapter: 2CR03 - SCG-Risk-3 Medium Pressure Gas System

In 2024 \$ (000s) Incurred Costs												
	Adjusted Recorded					Adjusted Forecast						
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Control/Mitigation	417,106	406,404	331,282	274,545	274,252	211,532	269,273	306,143	291,222	290,344	278,861	272,618
Alternative Mitigation	0	0	0	0	0	229,091	229,091	229,091	229,091	229,091	229,091	229,091
Units	See detailed pages for Units as the unit measure can vary for each mitigation.											

Note: Totals may include rounding differences.

Risk Chapter: **SCG-Risk-3 Medium Pressure Gas System**

Risk ID: **2CR03**

In 2024 \$ (000s) Incurred Costs

Mitigation		Unit Measure	Adjusted Recorded					Adjusted Forecast						
ID	Name		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A009	Comprehensive Replacement	Miles replaced	0	0	0	0	0	78,232	78,232	78,232	78,232	78,232	78,232	78,232
A106	CP10 Service Replacement	Replacement	0	0	0	0	0	150,859	150,859	150,859	150,859	150,859	150,859	150,859
C121	Gas Infrastructure Protection	Mitigations	21,253	14,688	16,509	13,724	13,510	12,377	12,358	12,055	11,809	11,745	1	1
C123	Regulator Station Replacement	Work orders	2,161	5,686	4,673	2,863	4,479	4,479	4,479	4,479	4,479	4,479	4,479	4,479
C124	Regulator Station Installation	SCADA Enh	64	14,337	19,344	19,361	25,630	22,415	27,396	31,132	31,132	31,132	31,132	24,906
C129	Cathodic Protection System	Feet	2,730	4,044	5,069	4,794	7,057	4,947	4,940	4,820	5,210	5,184	5,192	5,192
C135	EPM Installations & Replacement	Installations	550	229	551	430	320	408	408	408	408	408	408	408
C170	CP Install/Replace Impressed	Work orders	9,166	6,377	9,093	11,340	11,041	11,041	11,041	11,041	11,041	11,041	11,041	11,041
C174	Service Replacements- Leaks	Replacement	57,456	51,305	42,585	46,262	32,903	32,903	32,903	32,903	45,732	45,732	45,732	45,732
C175	Residential Meter Protection	Repairs - main	7,205	9,578	11,178	10,322	10,649	3,143	3,143	3,143	3,143	3,143	3,143	3,143
C177	Main Replacements- Leaks	Feet - main	32,990	29,416	19,543	12,758	10,975	10,975	10,975	10,975	24,836	24,836	24,836	24,836
C182	Distribution Risk Evaluation	Miles	283,531	270,744	202,735	152,690	157,688	108,846	161,632	195,189	153,434	152,646	152,899	152,882

Units

Mitigation		Unit Measure	Adjusted Recorded					Adjusted Forecast						
ID	Name		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A009	Comprehensive Replacement	Miles replaced	0	0	0	0	0	48	48	48	48	48	48	48
A106	CP10 Service Replacement	Replacement	0	0	0	0	0	10,057	10,057	10,057	10,057	10,057	10,057	10,057
C121	Gas Infrastructure Protection	Mitigations	4,377	2,386	3,818	3,749	4,278	600	600	600	3,250	3,250	0	0
C123	Regulator Station Replacement	Work orders	17	37	39	30	32	32	32	32	32	32	32	32
C124	Regulator Station Installation	SCADA Enh	0	0	2	10	8	18	22	25	25	25	25	20
C129	Cathodic Protection System	Feet	0	0	188,576	192,795	405,181	528,000	528,000	528,000	528,000	528,000	528,000	528,000
C135	EPM Installations & Replacement	Installations	131	80	153	125	110	119	119	119	119	119	119	119
C170	CP Install/Replace Impressed	Work orders	232	152	509	714	596	596	596	596	596	596	596	596

Note: Totals may include rounding differences.

Risk Chapter: **SCG-Risk-3 Medium Pressure Gas System**
Risk ID: **2CR03**

Units

Mitigation		Unit Measure	Adjusted Recorded					Adjusted Forecast						
ID	Name		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
C174	Service Replacements- Leal	Replacemer	5,353	4,915	4,254	4,333	3,956	3,956	3,956	3,956	4,499	4,499	4,499	4,499
C175	Residential Meter Protection	Repairs - m	7,911	12,005	16,301	17,159	11,341	3,347	3,347	3,347	3,347	3,347	3,347	3,347
C177	Main Replacements- Leakaç	Feet - main	109,442	107,114	92,019	49,775	38,535	38,535	38,535	38,535	41,691	41,691	41,691	41,691
C182	Distribution Risk Evaluation	Miles	115	140	156	155	143	74	101	127	111	111	111	111

Note: Totals may include rounding differences.

Supplemental Workpapers

Southern California Gas Company
2025 RAMP
Capital Workpapers

PRIVILEGED AND CONFIDENTIAL/WORK PRODUCT

2025 RAMP
SCG-Risk-3-Supplemental
Workpaper

Comprehensive
Replacement of Bare
Steel Pipelines

Assumptions:

Whole system bare steel replacements to remove the risk associated with this category of Non-State-of-the-Art pipelines.
Labor and non-labor splits are assumed to be at 10% and 90% respectively
Assumes average direct cost of \$1.5M per mile of replacement plus approximately \$5M per year of general DIMP costs allocated to this activity (e.g., IT)
Forecast projected spend is before 16% V&S factor.

Forecast

	2025	2026	2027	2028	2029	2030	2031
Miles Replaced	48	48	48	48	48	48	48
Capital Projected Spend	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000

Labor/Non-Labor Capital

	2025	2026	2027	2028	2029	2030	2031
Labor at 10%	\$ 7,700	\$ 7,700	\$ 7,700	\$ 7,700	\$ 7,700	\$ 7,700	\$ 7,700
Non-Labor at 90%	\$ 69,300	\$ 69,300	\$ 69,300	\$ 69,300	\$ 69,300	\$ 69,300	\$ 69,300
Total Projected Cost	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000	\$ 77,000

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2025 RAMP
Capital Workpapers

**Supplemental Workpaper for Zero Based Calculations Related to Alternative Mitigation A106 CP10
Service Replacement**

Assumptions: [A]: Total number of unprotected pipeline segments (CP10s) in the system as of the start of 2025

[B]: Duration of the replacement program is assumed to take approximately 30 years to complete

[C]: Average number of replacements per year is based on the assumption of a 30 year program duration

[D]: Average cost of replacement is based on an approximate cost of a service replacement

[E]: Average annual cost of the program uses the assumed average cost of replacement multiplied by the average number of replacements in a year

Total Number of CP10s in the System [A]	Duration of Replacement Program (Years) [B]	Average Replacements per Year [C] ([A]/[B])	Average Cost of a Replacement [D]	Average Annual Cost of Program [E] ([C]*[D])
301,718	30	10,057	\$15,000	\$150,859,000

	Average Annual Cost of Program [F]
2025	\$150,859,000
2026	\$150,859,000
2027	\$150,859,000
2028	\$150,859,000
Total Cost 2025-2028	\$603,436,000

	Average Annual Cost of Program
2029	\$150,859,000
2030	\$150,859,000
2031	\$150,859,000
Total Cost 2029-2031	\$452,577,000

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Capital Workpapers

PRIVILEGED AND CONFIDENTIAL/WORK PRODUCT

2025 RAMP
SCG-Risk-15-Supplemental Workpaper

Comprehensive Mapping of Medium Pressure Services

Assumptions:

Comprehensive Mapping of Medium Pressure Services forecasted costs are based on the resources in the field to capture data, vehicle usage costs per year, and office resources required to process data collected.

Labor and non-labor splits are assumed to be at 20% and 80% respectively.

Capital expenses are for equipment and tools. Year 2025 includes initial upfront investment required, while 2026-2031 forecast the potential funds needed for replacement and repairment of tools.

Forecast projected spend is before 16% V&S factor.

Forecast

	2025	2026	2027	2028	2029	2030	2031
Services Mapped	5000	5000	5000	5000	5000	5000	5000
O&M Projected Spend	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000
Capital Projected Spend	\$ 120,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 10,000	\$ 10,000	\$ 10,000

Forecast Cost Breakdown

	2025	2026	2027	2028	2029	2030	2031
Estimated cost per MP Service	\$ 160	\$ 160	\$ 160	\$ 160	\$ 160	\$ 160	\$ 160
Forecasted Number of Services	5000	5000	5000	5000	5000	5000	5000
Projected Cost	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000

Labor/Non-Labor O&M

	2025	2026	2027	2028	2029	2030	2031
Labor at 20%	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000	\$ 160,000
Non-Labor at 80%	\$ 640,000	\$ 640,000	\$ 640,000	\$ 640,000	\$ 640,000	\$ 640,000	\$ 640,000
Total Projected Cost	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000

Labor/Non-Labor Capital

	2025	2026	2027	2028	2029	2030	2031
Labor at 20%	\$ 24,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 2,000	\$ 2,000	\$ 2,000
Non-Labor at 80%	\$ 96,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 8,000	\$ 8,000	\$ 8,000
Total Projected Cost	\$ 120,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 10,000	\$ 10,000	\$ 10,000

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2025 RAMP
Capital Workpapers

CCM Distribution Regulator Station (DRS) Enhancements (SoCalGas)

Unit Count

	2025	2026	2027	2028	2029	2030	2031
Enhanced DRS Stations	18	22	25	25	25	25	20

Cost Per Unit Breakdown

Cost Per Site: Project Management & Field Engineering

COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST
Capital	Labor	Internal Resources	Project Management, Engineering Design Support & Commissioning	\$ 40,000.00
Capital	Non-Labor	External Resources	Contractor Services	\$ 12,000.00
Capital	Non-Labor	Materials & Expenses	Travel, Parking, Overnights	\$ 700.00
Total Unit Cost				\$ 52,700.00

Cost Per Enhanced DRS Station

COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST
Capital	Labor	Internal Resources	Planning, Permitting, Contracting	\$ 113,000.00
Capital	Labor	Internal Resources	Inspections	\$ 41,400.00
Capital	Labor	Internal Resources	Construction & Engineering oversight	\$ 26,400.00
Capital	Labor	Internal Resources	Documentation & Close-out	\$ 60,000.00
Capital	Non-Labor	External Resources	Engineering Design	\$ 112,000.00
Capital	Non-Labor	External Resources	Mechanical construction	\$ 407,000.00
Capital	Non-Labor	External Resources	Electrical construction	\$ 151,000.00
Capital	Non-Labor	External Resources	Inspections	\$ 45,000.00
Capital	Non-Labor	External Resources	Construction & Engineering oversight	\$ 26,334.00
Capital	Non-Labor	Materials & Expenses	Mechanical, electrical, & telecommunications equipment	\$ 165,528.00
Total Unit Cost				\$ 1,147,662.00

Capital Forecast

		2025	2026	2027	2028	2029	2030	2031
Labor	Internal Labor	\$ 5,054,400.00	\$ 6,177,600.00	\$ 7,020,000.00	\$ 7,020,000.00	\$ 7,020,000.00	\$ 7,020,000.00	\$ 5,616,000.00
	V&S	\$ 808,704.00	\$ 988,416.00	\$ 1,123,200.00	\$ 1,123,200.00	\$ 1,123,200.00	\$ 1,123,200.00	\$ 898,560.00
	Total Labor	\$ 5,863,104.00	\$ 7,166,016.00	\$ 8,143,200.00	\$ 8,143,200.00	\$ 8,143,200.00	\$ 8,143,200.00	\$ 6,514,560.00
	FTE	42.1	51.5	58.5	58.5	58.5	58.5	46.8
Non-Labor	External Labor	\$ 13,560,012.00	\$ 16,573,348.00	\$ 18,833,350.00	\$ 18,833,350.00	\$ 18,833,350.00	\$ 18,833,350.00	\$ 15,066,680.00
	Materials & Expenses	\$ 2,992,104.00	\$ 3,657,016.00	\$ 4,155,700.00	\$ 4,155,700.00	\$ 4,155,700.00	\$ 4,155,700.00	\$ 3,324,560.00
	Total NL	\$ 16,552,116.00	\$ 20,230,364.00	\$ 22,989,050.00	\$ 22,989,050.00	\$ 22,989,050.00	\$ 22,989,050.00	\$ 18,391,240.00
Total		\$ 21,606,516.00	\$ 26,407,964.00	\$ 30,009,050.00	\$ 30,009,050.00	\$ 30,009,050.00	\$ 30,009,050.00	\$ 24,007,240.00

Assumptions

Cost assumptions leveraged refinement of costs from pilot sites to determine per unit cost
 Multiple mechanical and electrical estimates provided by vendors and incorporated into per unit cost
 Deployment schedule consistent with projects requiring specialized planning, permitting, and construction
 FTE Calculation used \$120k
 V&S is 16%
 Site selection based on current risk-based prioritization (consequence of failure and downstream customer impacts)

Southern California Gas Company
2025 RAMP
Capital Workpapers

Supplemental Workpaper for Zero Based Calculations Related to Residential Meter Protection Program

Assumption: Amounts shown include vacation and sick

2024 Labor and Non-Labor Cost for Meter Protection

	Labor [A]	Non-Labor [B]	FTE [C]	Total [D] ([A]+[B])	Total Units [E]	Unit Rate [F] ([D]/[E])
2024	\$1,779,155.00	\$8,870,088.00	15	\$10,649,243.00	11341	\$939.00

2024 Labor and Non-Labor Percentages

Labor % [G] ([A]/[D])	Non-Labor % [H] ([B]/[D])	FTE/Labor [I] ([A]/[C])
17%	83%	\$118,610.33

Forecasted Meter Protection Costs

	Mitigation Sites [J]	Labor [K] ([J]*[F]*[G])	Non-Labor [L] ([J]*[F]*[H])	Total [M] ([K]+[L])	FTE [N] ([M]*[C]/[D])
2025	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4
2026	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4
2027	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4
2028	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4
2029	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4
2030	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4
2031	3,347	\$525,071.14	\$2,617,774.85	\$3,142,845.99	4.4

Risk Chapter: **SCG-Risk-3 Medium Pressure Gas System**

Risk ID: **2CR03**

Appendix A: Forecast Methodology

Mitigation ID	Mitigation Name	Labor	Non-Labor	NSE	Units
A009	Comprehensive Replacement of Bare Steel Pipelines	Zero-Based	Zero-Based	Zero-Based	Zero-Based
A106	CP10 Service Replacement	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C121	Gas Infrastructure Protection Program (GIPP)	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec
C123	Regulator Station Replacement	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec
C124	Regulator Station Installation Replacement & Enhancement	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C129	Cathodic Protection System Improvement	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec
C135	EPM Installations & Replacements	5-YR Average	5-YR Average	5-YR Average	5-YR Average
C170	CP Install/Replace Impressed Current Systems	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec
C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec
C175	Residential Meter Protection	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec
C182	Distribution Risk Evaluation & Monitoring System (DREAMS)	Base YR Rec	Base YR Rec	Base YR Rec	Base YR Rec

Risk Chapter: **SCG-Risk-3 Medium Pressure Gas System**

Risk ID: **2CR03**

Appendix B: Unit Measure

Mitigation ID	Mitigation Name	Unit Measure
A009	Comprehensive Replacement of Bare Steel Pipelines	Miles replaced - Steel
A106	CP10 Service Replacement	Replacements
C121	Gas Infrastructure Protection Program (GIPP)	Mitigations
C123	Regulator Station Replacement	Work orders
C124	Regulator Station Installation Replacement & Enhancement	SCADA Enhanced Sites
C129	Cathodic Protection System Improvement	Feet
C135	EPM Installations & Replacements	Installations or replacements
C170	CP Install/Replace Impressed Current Systems	Work orders
C174	Service Replacements- Leakage Abnormal Op. Conditions CP Related	Replacements
C175	Residential Meter Protection	Repairs - meter protection sites mitigated
C177	Main Replacements- Leakage Abnormal Op. Conditions CP Related	Feet - main replacements
C182	Distribution Risk Evaluation & Monitoring System (DREAMS)	Miles