

**SAN DIEGO GAS & ELECTRIC COMPANY**

Risk Assessment and Mitigation Phase

2025 Report

Chapter: SDG&E-Risk-5

Number: SDG&E-R05-CWP

# **Electric Infrastructure Integrity Capital Workpapers**

**SAN DIEGO GAS & ELECTRIC COMPANY**

May 15, 2025



## 2025 Risk Assessment & Mitigation Phase

# INDEX OF RISK CHAPTER

## Risk Chapter 1CR05: SDG&E-RISK-5 ELECTRIC INFRASTRUCTURE INTEGRITY

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Summary of Risk Chapter: 1CR05 - SDG&E-Risk-5 Electric Infrastructure Integrity

In 2024 \$ (000s) Incurred Costs												
	Adjusted Recorded					Adjusted Forecast						
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Control/Mitigation	124,315	176,261	138,015	110,452	107,487	86,039	86,499	87,219	125,684	126,014	126,294	129,862
Alternative Mitigation	0	0	0	0	0	0	0	0	3,070	3,070	3,070	3,035
Units	See detailed pages for Units as the unit measure can vary for each mitigation.											

**Note:** Totals may include rounding differences.

Risk Chapter: **SDG&E-Risk-5 Electric Infrastructure Integrity**

Risk ID: **1CR05**

**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
A210	Distribution OH Switch Repl	Switches Re	0	0	0	0	0	0	0	0	35	35	35	0
A234	4kV Full Cutover	Miles	0	0	0	0	0	0	0	0	3,035	3,035	3,035	3,035
C201	Proactive Overhead Conduc	Miles	87	20,004	10,768	4,176	291	0	0	0	8,061	8,061	8,061	8,061
C202	Underground Cable Replace	Miles	6,015	6,345	6,886	2,138	3,308	0	0	0	5,219	5,219	5,219	5,219
C206	Tee Modernization Program	Terminators	2,826	6,984	5,052	2,217	4,922	0	0	0	2,419	2,419	2,419	2,419
C208	Replacement of Live Front E	Terminators	1,542	2,243	2,037	792	64	0	0	0	1,878	1,878	1,878	1,878
C210	DOE Switch Replacement	Switches Re	8,563	15,146	6,341	4,342	2,325	0	0	0	4,726	4,726	4,726	4,726
C212	GO165 Corrective Maintena	Jobs comple	28,297	21,464	22,896	17,824	25,917	22,212	22,212	22,212	22,212	22,212	22,212	22,212
C226	Distribution Substation Proa	No feasible	6,600	3,174	1,487	2,386	1,731	0	0	0	2,500	2,756	3,039	3,351
C227	Streamview Substation Rebi	No feasible	0	938	1,149	7,880	3,025	0	0	0	0	0	0	0
C228	Field SCADA RTU Replacem	RTUs replac	2,791	1,590	1,717	449	771	0	0	0	0	0	0	0
C234	4kV Reliability Program	Miles	4,747	7,158	318	1,731	223	0	0	0	456	456	456	456
C236	Distribution Overhead Switcl	Switches Re	1,308	2,874	851	406	352	0	0	0	679	679	679	679
C240	Avian Protection Program	Poles	336	2,354	244	-4	14	0	0	0	21	21	21	21
C247	North Valley (Morro Hill) Sub	No feasible	7	815	3,064	1,019	226	649	1,984	60	0	0	0	0
C248	Strategic Pole Replacement	Poles replac	0	0	0	6	13	0	0	0	1,200	1,200	1,200	1,200
C250	Substation Reliability for Dis	No feasible	4,626	1,469	2,431	1,164	3,282	4,436	4,327	4,588	11,070	12,155	9,987	14,894
C251	GO165 Corrective Maintena	Poles	13,825	20,397	24,524	19,683	20,003	21,403	21,403	21,403	21,403	21,403	21,403	21,403
C252	Management of Overhead D	Jobs comple	9,319	18,398	12,768	9,769	10,966	11,168	11,168	11,168	11,168	11,168	11,168	11,168
C253	Restoration of Service	Jobs comple	7,146	13,172	9,339	10,395	10,353	10,029	10,029	10,029	10,029	10,029	10,029	10,029
C254	Underground Cable Replace	Jobs comple	9,363	9,064	7,974	6,159	7,217	7,117	7,117	7,117	7,117	7,117	7,117	7,117
C256	Management of Undergroun	Jobs comple	4,418	5,130	4,282	3,638	6,220	4,713	4,713	4,713	4,713	4,713	4,713	4,713
C257	Distribution Substation Resp	No feasible	662	1,344	287	822	1,573	1,147	1,951	2,270	2,641	3,073	3,576	4,161
C258	Emergency Equipment Purc	No feasible	1,194	2,632	3,142	1,417	961	2,372	814	2,872	2,372	814	2,372	814

**Note:** Totals may include rounding differences.



Risk Chapter: **SDG&E-Risk-5 Electric Infrastructure Integrity**  
Risk ID: **1CR05**

**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
C260	Urban Substation Rebuild	No feasible	1,479	812	3,298	6,837	464	0	0	0	0	0	0	0
C261	Power Quality Monitor Deplo	Nodes	1,503	2,318	884	401	285	241	197	195	1,463	1,471	1,468	683
C262	Distribution Substation SCADA	Other	372	1,180	1,348	822	413	552	584	592	1,044	1,044	1,044	1,044
C263	Wireless Fault Indicator	Wireless fau	0	112	136	0	0	0	0	0	160	267	374	481
C265	Kettner Substation 69/12kV	No feasible	153	1,081	505	887	614	0	0	0	0	0	0	0
C269	Distribution Circuit Reliability	Switches	7,065	6,765	2,673	1,868	1,729	0	0	0	1,959	1,959	1,959	1,959
C270	SCADA Capacitors	Capacitors r	72	1,297	1,614	1,229	225	0	0	0	1,174	1,174	1,174	1,174

**Units**

Mitigation		Unit Measure	Adjusted Recorded					Adjusted Forecast						
ID	Name		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A210	Distribution OH Switch Repl	Switches Re	0	0	0	0	0	0	0	0	1	1	1	1
A234	4kV Full Cutover	Miles	0	0	0	0	0	0	0	0	1	1	1	1
C201	Proactive Overhead Conduc	Miles	0	8	7	4	0	0	0	0	7	7	7	7
C202	Underground Cable Replace	Miles	32	39	28	12	19	0	0	0	28	28	28	28
C206	Tee Modernization Program	Terminators	63	146	119	91	253	0	0	0	119	119	119	119
C208	Replacement of Live Front E	Terminators	14	25	29	31	0	0	0	0	34	34	34	34
C210	DOE Switch Replacement	Switches Re	21	39	22	37	16	0	0	0	20	20	20	20
C212	GO165 Corrective Maintena	Jobs comple	2,277	1,663	1,498	1,343	1,867	1,569	1,569	1,569	1,569	1,569	1,569	1,569
C226	Distribution Substation Proa	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C227	Streamview Substation Rebu	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C228	Field SCADA RTU Replacem	RTUs replac	0	20	27	15	10	0	0	0	0	0	0	0
C234	4kV Reliability Program	Miles	2	7	0	1	0	0	0	0	1	1	1	1
C236	Distribution Overhead Switcl	Switches Re	15	34	22	12	4	0	0	0	19	19	19	19

**Note:** Totals may include rounding differences.

Risk Chapter: **SDG&E-Risk-5 Electric Infrastructure Integrity**

Risk ID: **1CR05**

**Units**

Mitigation		Unit Measure	Adjusted Recorded					Adjusted Forecast						
ID	Name		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
C240	Avian Protection Program	Poles	59	983	1	0	0	0	0	0	10	10	10	10
C247	North Valley (Morro Hill) Sub	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C248	Strategic Pole Replacement	Poles replac	0	0	0	0	0	0	0	0	40	40	40	40
C250	Substation Reliability for Dis	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C251	GO165 Corrective Maintena	Poles	1,172	1,176	1,565	1,262	1,391	1,406	1,406	1,406	1,406	1,406	1,406	1,406
C252	Management of Overhead D	Jobs comple	115	110	91	111	101	728	728	728	728	728	728	728
C253	Restoration of Service	Jobs comple	1,377	1,239	1,073	934	776	2,075	2,075	2,075	2,075	2,075	2,075	2,075
C254	Underground Cable Replace	Jobs comple	340	318	323	271	277	605	605	605	605	605	605	605
C256	Management of Underground	Jobs comple	226	162	208	246	265	685	685	685	685	685	685	685
C257	Distribution Substation Resp	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C258	Emergency Equipment Purc	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C260	Urban Substation Rebuild	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C261	Power Quality Monitor Deplc	Nodes	13	8	15	11	7	3	2	3	90	89	90	37
C262	Distribution Substation SCAI	Other	1	1	0	2	0	1	2	2	6	6	6	6
C263	Wireless Fault Indicator	Wireless fal	0	15	0	0	0	0	0	0	75	125	175	225
C265	Kettner Substation 69/12kV	No feasible	0	0	0	0	0	0	0	0	0	0	0	0
C269	Distribution Circuit Reliability	Switches	20	16	15	11	3	0	0	0	14	14	14	14
C270	SCADA Capacitors	Capacitors r	0	14	13	15	0	0	0	0	14	14	14	14

**Note:** Totals may include rounding differences.

## **Supplemental Workpapers**

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	A210 - Distribution Overhead Switch Replacement Program (DVC) (Alternative)
Budget Code(s):	1726.1.0
Estimated In Service Date:	Ongoing

1726.1.0 - SDG&E Risk-5 Electric Infrastructure Integrity Distribution Overhead Switch Replacement Program (DVC) (Alternative)																									
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (ea./ft./mile)	2025			2026			2027			2028			2029			2030			2031		
					# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost
1	Switch	Labor	RAMP	ea	0		\$ -	0		\$ -	0		\$ -	1	\$ 3,582	\$ 3,582	1	\$ 3,582	\$ 3,582	1	\$ 3,582	\$ 3,582			\$ -
																									\$ 10,747
2	Switch	Non-Labor	RAMP	ea	0		\$ -	0		\$ -	0		\$ -	1	\$ 32,137	\$ 32,137	1	\$ 32,137	\$ 32,137	1	\$ 32,137	\$ 32,137			\$ -
																									\$ 96,412
Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes V&S.																									
Switch costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.																									

Summary																									
Labor		RAMP				\$ -			\$ -			\$ -			\$ 3,582			\$ 3,582			\$ 3,582			\$ -	\$ 10,747
Non-Labor		RAMP				\$ -			\$ -			\$ -			\$ 32,137			\$ 32,137			\$ 32,137			\$ -	\$ 96,412
Subtotal RAMP						\$ -			\$ -			\$ -			\$ 35,719			\$ 35,719			\$ 35,719			\$ -	\$ 107,158
Labor		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
Non-Labor		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
Subtotal Non-RAMP						\$ -			\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
Total Project Forecast						\$ -			\$ -			\$ -			\$ 35,719			\$ 35,719			\$ 35,719			\$ -	\$ -

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	A234 - 4kV Modernization Alternative
Budget Code(s):	17269.0
Estimated In Service Date:	Ongoing

17269.0 - SDG&E Risk \$ Electric Infrastructure Integrity 4kV Modernization Program – Distribution																										
				2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (ea./ft./mils)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Comments		
1	Equipment Replacements	Non-Labor	RAMP	Miles		\$ -			\$ -			\$ -	1	\$ 455,435	\$ 455,435	1	\$ 455,435	\$ 455,435	1	\$ 455,435	\$ 455,435	1	\$ 455,435	\$ 1,822,740	Material costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program. Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors.	
2	Labor (Engineering and Construction)	Labor	RAMP	Hours		\$ -			\$ -			\$ -	23,462	\$ 110	\$ 2,580,820	23,462	\$ 110	\$ 2,580,820	23,462	\$ 110	\$ 2,580,820	23,462	\$ 110	\$ 10,373,280	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes V&S.	

Summary																										
Labor		RAMP				\$ -			\$ -			\$ -			\$ 2,580,820			\$ 2,580,820			\$ 2,580,820			\$ 2,580,820	\$ -	
Non-Labor		RAMP				\$ -			\$ -			\$ -			\$ 455,435			\$ 455,435			\$ 455,435			\$ 455,435	\$ -	
Subtotal RAMP						\$ -			\$ -			\$ -			\$ 3,036,255			\$ 3,036,255			\$ 3,036,255			\$ 3,036,255	\$ -	
Labor		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
Non-Labor		Non-RAMP				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
Subtotal Non-RAMP						\$ -			\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
Total Project Forecast						\$ -			\$ -			\$ -			\$ 3,036,255			\$ 3,036,255			\$ 3,036,255			\$ 3,036,255	\$ -	

<b>Workpaper/Mitigation:</b>	C201 - OH Public Safety (OPS) Program
<b>Budget Code(s):</b>	20241.0
<b>Estimated In Service Date:</b>	Ongoing

Summary													
Labor		RAMP		\$ -		\$ -		\$ -	\$ 215,047	\$ 215,047	\$ 215,047	\$ 215,047	\$ 860,188
		Non-Labor	RAMP		\$ -		\$ -		\$ 7,846,217	\$ 7,846,217	\$ 7,846,217	\$ 7,846,217	\$ 31,384,868
	Subtotal RAMP			\$ -		\$ -		\$ 8,061,264	\$ 8,061,264	\$ 8,061,264	\$ 8,061,264	\$ 32,245,056	
		Labor	Non-RAMP		\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
		Non-Labor	Non-RAMP		\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Non-RAMP				\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Project Forecast				\$ -		\$ -		\$ 8,061,264	\$ 8,061,264	\$ 8,061,264	\$ 8,061,264	\$ 32,245,056	

<b>Workpaper/Mitigation:</b>	C202 - Underground Cable Replacement Program (Proactive)
<b>Budget Code(s):</b>	00238.0
<b>Estimated In Service Date:</b>	Ongoing

00238.0 - SDG&E-Risk-S Electric Infrastructure Integrity Underground Cable Replacement Program (Proactive)					2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor / Non-Labor/NSE	RAMP / Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Comments	
1	Cable	Labor	RAMP	Miles	0	\$ 26,658	\$ -	0	\$ 26,658	\$ -	0	\$ 26,658	\$ -	28	\$ 7,872	\$ 220,414	28	\$ 7,872	\$ 220,414	28	\$ 7,872	\$ 220,414	28	\$ 7,872	\$ 220,414	\$ 1,388,156	Labor is unit estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes V&S.
2	Cable	Non-Labor	RAMP	Miles	0	\$ 73,810	\$ -	0	\$ 73,810	\$ -	0	\$ 73,810	\$ -	28	\$ 178,521	\$ 4,998,589	28	\$ 178,521	\$ 4,998,589	28	\$ 178,521	\$ 4,998,589	28	\$ 178,521	\$ 4,998,589	\$ 21,896,742	Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors. Material quantities and costs are cost based upon standard purchase amounts from manufacturers. Quantities are calculated based upon the standard for the application.

Summary													
Labor	RAMP		\$ -		\$ -		\$ -		\$ 220,414		\$ 220,414		\$ 220,414
	Non-Labor	RAMP	\$ -		\$ -		\$ -		\$ 4,998,589		\$ 4,998,589		\$ 4,998,589
			\$ -		\$ -		\$ -		\$ 5,219,004		\$ 5,219,004		\$ 5,219,004
	Subtotal RAMP		\$ -		\$ -		\$ -		\$ 5,219,004		\$ 5,219,004		\$ 5,219,004
Non-Labor	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
	Subtotal Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
Total Project Forecast			\$ -		\$ -		\$ -		\$ 5,219,004		\$ 5,219,004		\$ 5,219,004

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C206 - Tee Modernization Program
Budget Code(s):	17255.0
Estimated In Service Date:	Ongoing

17255.0 - SDG&E-Risk-5 Electric Infrastructure Tee Modernization Program				2025			2026			2027			2028			2029			2030			2031					
Line Item	Unit Description	Labor / Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (lbs./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Comments
1	Tees	Labor	RAMP	ea	0	\$ 14,189	\$ -	0	\$ 14,189	\$ -	0	\$ 14,189	\$ -	119	\$ 14,189	\$ 1,688,491	119	\$ 14,189	\$ 1,688,491	119	\$ 14,189	\$ 1,688,491	119	\$ 14,189	\$ 1,688,491	\$ 10,343,781	Labor is unit estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rates include VBS.
2	Tees	Non-Labor	RAMP	ea	0	\$ 6,143	\$ -	0	\$ 6,143	\$ -	0	\$ 6,143	\$ -	119	\$ 6,143	\$ 731,017	119	\$ 6,143	\$ 731,017	119	\$ 6,143	\$ 731,017	119	\$ 6,143	\$ 731,017	\$ 4,478,247	Fee costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon the standard for the application.

Summary																										
	Labor	RAMP				\$ -				\$ -						\$ 1,688,491			\$ 1,688,491						\$ 1,688,491	\$ 3,589,817
	Non-Labor	RAMP				\$ -				\$ -						\$ 731,017			\$ 731,017						\$ 731,017	\$ 1,554,379
Subtotal RAMP						\$ -				\$ -						\$ 2,419,508			\$ 2,419,508						\$ 2,419,508	\$ 5,143,996
	Labor	Non-RAMP				\$ -				\$ -						\$ -			\$ -						\$ -	\$ -
	Non-Labor	Non-RAMP				\$ -				\$ -						\$ -			\$ -						\$ -	\$ -
Subtotal Non-RAMP						\$ -				\$ -						\$ -			\$ -						\$ -	\$ -
Total Project Forecast						\$ -				\$ -						\$ 2,419,508			\$ 2,419,508						\$ 2,419,508	\$ 5,143,996



2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C208 - Replacement of Live Front Equipment
Budget Code(s):	06247.0
Estimated In Service Date:	Ongoing

06247.0 - SDG&E Risk-5 Electric Infrastructure Integrity Replacement of Live Front Equipment																											
		Labor/ Non-Labor/NLS	RAMP/ Non-RAMP	Unit Metric (ea./ft./miles)	2025			2026			2027			2028			2029			2030			2031			Comments	
Line Item	Unit Description				# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost		
1	Live front equipment	Labor	RAMP	locations			\$ -			\$ -			\$ -	34	\$ 4,892	\$ 166,323	34	\$ 4,892	\$ 166,323	34	\$ 4,892	\$ 166,323	34	\$ 4,892	\$ 166,323	\$ 665,292	Labor is unit estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rates include V&S.
2	Live front equipment	Non-Labor	RAMP	locations			\$ -			\$ -			\$ -	34	\$ 50,361	\$ 1,712,280	34	\$ 50,361	\$ 1,712,280	34	\$ 50,361	\$ 1,712,280	34	\$ 50,361	\$ 1,712,280	\$ 6,449,120	Terminator costs are based upon standard purchase amounts from manufacturers. Service contract labor assumptions include electrical utilities services, tree trimming, traffic control, etc.

Summary																								
Subtotal RAMP	Labor	RAMP			\$ -		\$ -		\$ -		\$ 166,323		\$ 166,323		\$ 166,323		\$ 166,323		\$ 166,323		\$ -			
	Non-Labor	RAMP			\$ -		\$ 1,712,280		\$ -		\$ 1,712,280		\$ 1,712,280		\$ 1,712,280		\$ 1,712,280		\$ 1,712,280		\$ -			
					\$ -		\$ -		\$ -		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ -			
					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
Subtotal Non-RAMP	Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
Total Project Forecast					\$ -		\$ -		\$ -		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ 1,878,603		\$ -	

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C210 - DOE Switch Replacement
Budget Code(s):	00238.0
Estimated In Service Date:	Ongoing

00290 - SDG&E Risk-S Electric Infrastructure Integrity DOE Switch Replacement					2025			2026			2027			2028			2029			2030			2031			Total Cost	Comments
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost		
1	Switches	Labor	RAMP	ea	0	\$ 7,647	\$ -	0	\$ 7,647	\$ -	0	\$ 7,647	\$ -	20	\$ 22,645	\$ 452,900	20	\$ 22,645	\$ 452,900	20	\$ 22,645	\$ 452,900	20	\$ 22,645	\$ 452,900	\$ 1,933,955	Labor is unit estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
2	Switches	Non-Labor	RAMP	ea	0	\$ 114,137	\$ -	0	\$ 114,137	\$ -	0	\$ 114,137	\$ -	20	\$ 213,646	\$ 4,272,920	20	\$ 213,646	\$ 4,272,920	20	\$ 213,646	\$ 4,272,920	20	\$ 213,646	\$ 4,272,920	\$ 18,917,876	Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors. Switch costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.

Summary																											
	Labor	RAMP			\$ -		\$ -	\$ -		\$ -			\$ 452,900		\$ 452,900		\$ 452,900		\$ 452,900		\$ 452,900		\$ 452,900		\$ 122,355		
	Non-Labor	RAMP			\$ -		\$ -	\$ -		\$ -			\$ 4,272,920		\$ 4,272,920		\$ 4,272,920		\$ 4,272,920		\$ 4,272,920		\$ 4,272,920		\$ 1,926,196		
Subtotal RAMP					\$ -		\$ -	\$ -		\$ -			\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 1,948,550		
	Labor	Non-RAMP			\$ -		\$ -	\$ -		\$ -			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
	Non-Labor	Non-RAMP			\$ -		\$ -	\$ -		\$ -			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
Subtotal Non-RAMP					\$ -		\$ -	\$ -		\$ -			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		
Total Project Forecast					\$ -		\$ -	\$ -		\$ -			\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 4,725,820		\$ 1,948,550		

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C226 - Distribution Substation Proactive Asset Program
Budget Code(s):	99282.0
Estimated In Service Date:	Ongoing

99282 - SDG&E Risk-S Electric Infrastructure Integrity Distribution Substation Proactive Asset Program					2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/ Non-Labor/NLS	RAMP/ Non-RAMP	Unit Metric (ea, ft, /mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Comments
1	BREAKERS	Non-Labor	RAMP	ea	7	\$ 60,000	\$ 420,000	7	\$ 60,000	\$ 420,000	4	\$ 60,000	\$ 240,000	7	\$ 60,000	\$ 420,000	9	\$ 60,000	\$ 540,000	9	\$ 60,000	\$ 540,000	10	\$ 60,000	\$ 600,000	\$ 3,600,000	Breaker costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
2	DISCONNECTS	Non-Labor	RAMP	ea	5	\$ 14,774	\$ 73,872	12	\$ 14,774	\$ 177,292	12	\$ 14,774	\$ 177,292	12	\$ 14,774	\$ 177,292	12	\$ 14,774	\$ 177,292	12	\$ 14,774	\$ 177,292	12	\$ 14,774	\$ 177,292	\$ 1,226,270	Disconnect costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
3	BUSHINGS	Non-Labor	RAMP	ea	8	\$ 7,337	\$ 58,696	10	\$ 7,337	\$ 73,370	10	\$ 7,337	\$ 73,370	10	\$ 7,337	\$ 73,370	11	\$ 7,337	\$ 80,707	11	\$ 7,337	\$ 80,707	11	\$ 7,337	\$ 80,707	\$ 572,286	Bushing costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
4	CABLES	Non-Labor	RAMP	ea	1,303	\$ 21	\$ 27,363	659	\$ 21	\$ 13,628	1,308	\$ 21	\$ 27,049	539	\$ 21	\$ 11,323	3,557	\$ 21	\$ 74,614	7,770	\$ 21	\$ 163,165	2,423	\$ 21	\$ 50,877	\$ 393,206	Cable costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
5	CAP BANKS	Non-Labor	RAMP	ea		\$ 363,772	\$ -	-	\$ 363,772	\$ -	-	\$ 363,772	\$ -	1	\$ 363,772	\$ 363,772	1	\$ 363,772	\$ 363,772	1	\$ 363,772	\$ 363,772	2	\$ 363,772	\$ 727,543	\$ 2,182,630	Capacitor Bank costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
6	PANEL/CONTROL PANEL	Non-Labor	RAMP	ea	3	\$ 42,021	\$ 126,063	2	\$ 42,021	\$ 84,042	10	\$ 42,021	\$ 420,210	10	\$ 42,021	\$ 420,210	11	\$ 42,021	\$ 462,231	14	\$ 42,021	\$ 588,294	14	\$ 42,021	\$ 588,294	\$ 2,363,491	Panel costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
7	ADVAC	Non-Labor	RAMP	ea		\$ 23,654	\$ -		\$ 23,654	\$ -		\$ 23,654	\$ -	11	\$ 23,654	\$ 260,194	12	\$ 23,654	\$ 283,848	12	\$ 23,654	\$ 283,848	12	\$ 23,654	\$ 283,848	\$ 1,153,046	ADVAC costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
8	FTE	Labor	RAMP	hours	4,408	\$ 91	\$ 401,100	1,239	\$ 91	\$ 112,050	4,346	\$ 91	\$ 395,055	4,487	\$ 91	\$ 407,868	4,487	\$ 91	\$ 407,868	5,234	\$ 91	\$ 475,771	5,234	\$ 91	\$ 475,771	\$ 1,042,509	Labor is estimated based upon assessment of the combined job scopes needed to replace forecasted substation obsolete equipment. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
9	Contractors	Non-Labor	RAMP	ea	60,600	\$ 10	\$ 605,998	10	\$ 84,617	\$ 846,170	10	\$ 36,597	\$ 365,972	10	\$ 36,597	\$ 365,972	10	\$ 36,597	\$ 365,972	10	\$ 36,597	\$ 365,972	10	\$ 36,597	\$ 365,972	\$ 4,040,602	Engineering and other services are estimated based upon support needed for workload forecasted.

Summary					\$ 401,100	\$ 112,050	\$ 395,055	\$ 407,868	\$ 407,868	\$ 475,771	\$ 475,771	\$ 2,676,093
	Labor	RAMP			\$ 1,311,992	\$ 1,614,502	\$ 1,303,993	\$ 2,092,132	\$ 2,348,435	\$ 2,363,049	\$ 2,874,533	\$ 14,108,537
	Non-Labor	RAMP			\$ 1,713,092	\$ 1,727,152	\$ 1,698,948	\$ 2,500,000	\$ 2,756,304	\$ 3,038,820	\$ 3,350,304	\$ 16,784,620
Subtotal RAMP					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Labor	Non-RAMP			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Non-Labor	Non-RAMP			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Non-RAMP					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Project Forecast					\$ 1,713,092	\$ 1,727,152	\$ 1,698,948	\$ 2,500,000	\$ 2,756,304	\$ 3,038,820	\$ 3,350,304	\$ 16,784,620

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C234 - 4kV Modernization Program
Budget Code(s):	17269.0
Estimated In Service Date:	Ongoing

17269.0 - SDG&E Risk \$ Electric Infrastructure Integrity 4kV Modernization Program – Distribution																											
					2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (sq. ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Comments
1	Equipment Replacements	Non-Labor	RAMP	Miles		\$ -	\$ -			\$ -			\$ -	1	\$ 68,409	\$ 68,409	1	\$ 68,409	\$ 68,409	1	\$ 68,409	\$ 68,409	1	\$ 68,409	\$ 68,409	\$ 273,636	Material costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.
2	Labor (Engineering and Constr)	Labor	RAMP	Hours		\$ -	\$ -			\$ -			\$ -	3,524	\$ 110	\$ 387,640	3,524	\$ 110	\$ 387,640	3,524	\$ 110	\$ 387,640	3,524	\$ 110	\$ 387,640	\$ 1,550,560	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.

Summary						\$ -		\$ -		\$ -		\$ 387,640		\$ 387,640		\$ 387,640		\$ 387,640		\$ 387,640		\$ -			
	Labor	RAMP				\$ -		\$ -		\$ -		\$ 387,640		\$ 387,640		\$ 387,640		\$ 387,640		\$ 387,640		\$ -			
	Non-Labor	RAMP				\$ -		\$ -		\$ -		\$ 68,409		\$ 68,409		\$ 68,409		\$ 68,409		\$ 68,409		\$ -			
	Subtotal RAMP					\$ -		\$ -		\$ -		\$ 456,049		\$ 456,049		\$ 456,049		\$ 456,049		\$ 456,049		\$ -			
	Labor	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
	Non-Labor	Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
	Subtotal Non-RAMP					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
	Total Project Forecast					\$ -		\$ -		\$ -		\$ 456,049		\$ 456,049		\$ 456,049		\$ 456,049		\$ 456,049		\$ -			

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C236 - Distribution Overhead Switch Replacement Program
Budget Code(s):	1726.1.0
Estimated in Service Date:	Ongoing

1726.1.0 - SDG&E Risk \$ Electric Infrastructure Integrity Distribution Overhead Switch Replacement Program																												
Line Item		Unit Description	Labor/ Non-Labor/NLS	RAMP/ Non-RAMP	Unit Metric (lbs./ft./mile)	2025			2026			2027			2028			2029			2030			2031			Total Cost	Comments
						# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost		
1		Switch	Labor	RAMP	ea	0		\$ -	0		\$ -	0		\$ -	\$ 19	\$ 3,582	\$ 68,064	\$ 19	\$ 3,582	\$ 68,064	\$ 19	\$ 3,582	\$ 68,064	\$ 19	\$ 3,582	\$ 68,064	\$ 286,584	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
2		Switch	Non-Labor	RAMP	ea	0		\$ -	0		\$ -	0		\$ -	\$ 19	\$ 32,137	\$ 610,605	\$ 19	\$ 32,137	\$ 610,605	\$ 19	\$ 32,137	\$ 610,605	\$ 19	\$ 32,137	\$ 610,605	\$ 2,570,968	Switch costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.

Summary		Labor	RAMP		\$ -	\$ -	\$ -	\$ 68,064	\$ 68,064	\$ 68,064	\$ 68,064	\$ 68,064	\$ 68,064	\$ 68,064	\$ 68,064	\$ 286,584	
		Non-Labor	RAMP		\$ -	\$ -	\$ -	\$ 610,605	\$ 610,605	\$ 610,605	\$ 610,605	\$ 610,605	\$ 610,605	\$ 610,605	\$ 610,605	\$ 2,570,968	
Subtotal RAMP					\$ -	\$ -	\$ -	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 2,857,552	
		Labor	Non-RAMP		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		Non-Labor	Non-RAMP		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Subtotal Non-RAMP					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Project Forecast					\$ -	\$ -	\$ -	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 678,669	\$ 142,878	

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C240 - Avian Protection Program
Budget Code(s):	10265.0
Estimated In Service Date:	Ongoing

10265.0 - SDG&E-Risk-S Electric Infrastructure Integrity Avian Protection Program																										
					2025			2026			2027			2028			2029			2030			2031			
Line Item	Unit Description	Labor / Non-Labor/NLS	RAMP/ Non-RAMP	Unit Metric (lbs./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Comments
10265 - no	Pole	Labor	RAMP	ea	-	\$ -	-	\$ -	-		\$ -	-		10	\$1,688	\$ 16,880	10	\$1,688	\$ 16,880	10	\$1,688	\$ 16,880	10	\$1,688	\$ 16,880	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes V&S.
10265 - no	Pole	Non-Labor	RAMP	ea	-	\$ -	-	\$ -	-		\$ -	-		10	\$445	\$ 4,450	10	\$445	\$ 4,450	10	\$445	\$ 4,450	10	\$445	\$ 4,450	Avian guard costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.

Summary																										
		Labor	RAMP			\$ -				\$ -			\$ -			\$ 16,880			\$ 16,880			\$ 16,880			\$ 16,880	\$ -
		Non-Labor	RAMP			\$ -				\$ -			\$ -			\$ 4,450			\$ 4,450			\$ 4,450			\$ 4,450	\$ -
Subtotal RAMP						\$ -				\$ -			\$ -			\$ 21,330			\$ 21,330			\$ 21,330			\$ 21,330	\$ -
		Labor	Non-RAMP			\$ -				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
		Non-Labor	Non-RAMP			\$ -				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
Subtotal Non-RAMP						\$ -				\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -
Total Project Forecast						\$ -				\$ -			\$ -			\$ 21,330			\$ 21,330			\$ 21,330			\$ 21,330	\$ -

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C248 - Strategic Pole Replacement Program
Budget Code(s):	22241.0
Estimated In Service Date:	Ongoing

22241.0 - SDG&E-Risk-S Electric Infrastructure Integrity Strategic Pole Replacement Program (Non-HPTD)																											
					2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Comments	
1	Poles	Labor	RAMP	ea	0		\$ -	0		\$ -	-		\$ -	40	\$ 15,000	\$ 600,000	40	\$ 15,000	\$ 600,000	40	\$ 15,000	\$ 600,000	40	\$ 15,000	\$ 600,000	\$ 2,400,000	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
2	Poles	Non-Labor	RAMP	ea	0		\$ -	0		\$ -	-		\$ -	40	\$ 15,000	\$ 600,000	40	\$ 15,000	\$ 600,000	40	\$ 15,000	\$ 600,000	40	\$ 15,000	\$ 600,000	\$ 2,400,000	Pole costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.

Summary																									
Labor		RAMP				\$ -			\$ -			\$ -		\$ 600,000		\$ 600,000		\$ 600,000		\$ 600,000		\$ 600,000	\$ -		
Non-Labor		RAMP				\$ -			\$ -			\$ -		\$ 600,000		\$ 600,000		\$ 600,000		\$ 600,000		\$ 600,000	\$ -		
Subtotal RAMP						\$ -			\$ -			\$ -		\$ 1,200,000		\$ 1,200,000		\$ 1,200,000		\$ 1,200,000		\$ 1,200,000	\$ -		
Labor		Non-RAMP				\$ -			\$ -			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
Non-Labor		Non-RAMP				\$ -			\$ -			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
Subtotal Non-RAMP						\$ -			\$ -			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -		
Total Project Forecast						\$ -			\$ -			\$ -		\$ 1,200,000		\$ 1,200,000		\$ 1,200,000		\$ 1,200,000		\$ 1,200,000	\$ -		

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C250 - Substation Reliability For Distribution Components
Budget Code(s):	Multiple
Estimated In Service Date:	Ongoing

MULTIPLE - SDG&E-Risk-S Electric Infrastructure Integrity Substation Reliability For Distribution Components		2025			2026			2027			2028			2029			2030			2031			Comments				
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (lbs./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost					
1	Chicanita 12kV Breaker & Capacitor Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -			\$ -			\$ -	1	\$ -	\$ -	1	\$ 480,808	\$ 480,808	1	\$ 460,906	\$ 460,906	1	\$ 115,032	\$ 115,032	\$ 1,056,746	Rough Order Magnitude forecast of Labor based on historicals for this type of work.
2	Chicanita 12kV Breaker & Capacitor Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -			\$ -			\$ -	1	\$ 349,644	\$ 349,644	1	\$ 1,250,812	\$ 1,250,812	1	\$ 1,856,029	\$ 1,856,029	1	\$ 480,722	\$ 480,722	\$ 3,937,207	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.
3	Laguna Niguel 12kV Breaker & Capacitor Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -	1	\$ 52,781	\$ 52,781	1	\$ 76,234	\$ 76,234	1	\$ 76,234	\$ 76,234	1	\$ 76,234	\$ 76,234	1	\$ 76,234	\$ 76,234	1	\$ 76,234	\$ 76,234	\$ 357,717	Rough Order Magnitude forecast of Labor based on historicals for this type of work.
4	Laguna Niguel 12kV Breaker & Capacitor Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -	1	\$ 376,529	\$ 376,529	1	\$ 1,729,789	\$ 1,729,789	1	\$ 1,729,789	\$ 1,729,789	1	\$ 1,729,789	\$ 1,729,789	1	\$ 1,729,789	\$ 1,729,789	1	\$ 1,729,789	\$ 1,729,789	\$ 7,295,684	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.
5	Scrapps 12kV Breaker & Capacitor Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -			\$ -			\$ -	1	\$ 42,108	\$ 42,108	1	\$ 115,800	\$ 115,800	1	\$ -	\$ -	\$ -	\$ -	\$ 157,908	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
6	Scrapps 12kV Breaker & Capacitor Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -			\$ -			\$ -	1	\$ 938,856	\$ 938,856	1	\$ 2,237,400	\$ 2,237,400	1	\$ 5,055,840	\$ 5,055,840	\$ 8,232,096	\$ 8,232,096	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.		
7	Coronado 69/12kV Transformer Replacement	Labor	RAMP	Labor Cost	1	\$ -	\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ -	\$ -	\$ -	Rough Order Magnitude forecast of Labor based on historicals for this type of work.
8	Coronado 69/12kV Transformer Replacement	Non-Labor	RAMP	Engineering Services and Material Costs	1	\$ 567,081	\$ 567,081			\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	\$ 567,081	\$ 567,081	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
9	Batiquitos 12kV Breaker & Capacitor Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -	1	\$ 77,889	\$ 77,889	1	\$ 379,442	\$ 379,442	1	\$ 508,207	\$ 508,207			\$ -			\$ -	\$ -	\$ 965,538	\$ 965,538	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
10	Batiquitos 12kV Breaker & Capacitor Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -	1	\$ 558,141	\$ 558,141	1	\$ 4,223,291	\$ 4,223,291	1	\$ 4,359,858	\$ 4,359,858			\$ -			\$ -	\$ -	\$ 9,141,290	\$ 9,141,290	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
11	Cabrillo 12kV Switchgear Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -			\$ -			\$ -	1	\$ 267,514	\$ 267,514	1	\$ 405,428	\$ 405,428			\$ -	\$ -	\$ 672,942	\$ 672,942	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
12	Cabrillo 12kV Switchgear Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -			\$ -			\$ -	1	\$ 379,101	\$ 379,101	1	\$ 1,819,244	\$ 1,819,244			\$ -	\$ -	\$ 2,198,345	\$ 2,198,345	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
13	Ash 12kV Breaker & Transformer Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -	1	\$ 58,513	\$ 58,513	1	\$ 147,716	\$ 147,716			\$ -			\$ -			\$ -	\$ -	\$ 206,229	\$ 206,229	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
14	Ash 12kV Breaker & Transformer Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -	1	\$ 817,019	\$ 817,019	1	\$ 1,063,089	\$ 1,063,089			\$ -			\$ -			\$ -	\$ -	\$ 1,880,108	\$ 1,880,108	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
15	Genessee 12kV Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -			\$ -			\$ -	1	\$ 47,196	\$ 47,196	1	\$ 787,248	\$ 787,248	1	\$ 821,568	\$ 821,568	1	\$ 1,656,012	\$ 1,656,012	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
16	Genessee 12kV Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -			\$ -			\$ -	1	\$ 496,320	\$ 496,320	1	\$ 1,022,842	\$ 1,022,842	1	\$ 3,404,122	\$ 3,404,122	1	\$ 4,623,263	\$ 4,623,263	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
17	Trabuco12kV Replacements	Labor	RAMP	Labor Cost		\$ -	\$ -			\$ -			\$ -			\$ -	1	\$ 52,632	\$ 52,632	1	\$ 126,324	\$ 126,324	1	\$ 178,956	\$ 178,956	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
18	Trabuco12kV Replacements	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -			\$ -			\$ -			\$ -	1	\$ 1,648,656	\$ 1,648,656	1	\$ 3,099,000	\$ 3,099,000	1	\$ 4,747,656	\$ 4,747,656	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
19	Rincon 12kV Bus Tie and Transformer Replacement	Labor	RAMP	Labor Cost		\$ -	\$ -	1	\$ 41,448	\$ 41,448	1	\$ 126,900	\$ 126,900	1	\$ 62,196	\$ 62,196			\$ -			\$ -	\$ -	\$ 230,544	\$ 230,544	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
20	Rincon 12kV Bus Tie and Transformer Replacement	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -	1	\$ 602,899	\$ 602,899	1	\$ 1,138,129	\$ 1,138,129	1	\$ 548,635	\$ 548,635			\$ -			\$ -	\$ -	\$ 2,289,663	\$ 2,289,663	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
21	Vista Remove From Service	Labor	RAMP	Labor Cost		\$ -	\$ -	1	\$ 22,467	\$ 22,467	1	\$ 12,650	\$ 12,650	1	\$ 217,855	\$ 217,855			\$ -			\$ -	\$ -	\$ 252,972	\$ 252,972	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
22	Vista Remove From Service	Non-Labor	RAMP	Engineering Services and Material Costs		\$ -	\$ -	1	\$ 169,380	\$ 169,380	1	\$ 46,170	\$ 46,170	1	\$ 265,851	\$ 265,851			\$ -			\$ -	\$ -	\$ 482,401	\$ 482,401	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	
23	Granite 12kV Breaker and Switchgear Replacements	Labor	RAMP	Labor Cost	1	\$ 110,100	\$ 110,100	1	\$ 140,300	\$ 140,300	1	\$ 399,450	\$ 399,450	1	\$ 327,250	\$ 327,250			\$ -			\$ -	\$ -	\$ 972,100	\$ 972,100	Rough Order Magnitude forecast of Labor based on historicals for this type of work.	
24	Granite 12kV Breaker and Switchgear Replacements	Non-Labor	RAMP	Engineering Services and Material Costs	1	\$ 1,693,948	\$ 1,693,948	1	\$ 1,186,473	\$ 1,186,473	1	\$ 2,312,189	\$ 2,312,189	1	\$ 1,167,216	\$ 1,167,216			\$ -			\$ -	\$ -	\$ 6,355,826	\$ 6,355,826	Rough Order Magnitude forecast of engineering services and material based on historicals for this type of work.	

Summary																										
	Labor	RAMP		\$ 110,100		\$ 204,215		\$ 728,183		\$ 1,478,207		\$ 1,559,981		\$ 1,492,820		\$ 1,139,158		\$ 6,712,664								
	Non-Labor	RAMP		\$ 2,361,029		\$ 1,958,752		\$ 5,248,177		\$ 9,726,615		\$ 10,594,879		\$ 8,494,716		\$ 13,769,472		\$ 52,053,840								
	NSE	RAMP																								
Subtotal RAMP				\$ 2,371,129		\$ 2,162,967		\$ 5,976,360		\$ 11,204,822		\$ 12,154,860		\$ 9,987,536		\$ 14,908,630		\$ 58,766,304								
	Labor	Non-RAMP																								
	Non-Labor	Non-RAMP																								
	NSE	Non-RAMP																								
Subtotal Non-RAMP																										
Total Project Forecast				\$ 2,371,129		\$ 2,162,967		\$ 5,976,360		\$ 11,204,822		\$ 12,154,860		\$ 9,987,536		\$ 14,908,630		\$ 4,534,095								



2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C257 - Distribution Substation Responsive Asset Replacement
Budget Code(s):	00203.0
Estimated In Service Date:	Ongoing

90203.0 - SDG&E Risk-5 Electric Infrastructure Integrity Distribution Substation Responsive Asset Replacement																											
Line Item	Unit Description	Labor/ Non-Labor/NLS	RAMP/ Non-RAMP	Unit Metric (ea, ft, /mile)	2025			2026			2027			2028			2029			2030			2031			Total Cost	Comments
					# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost		
1	FTE's	Labor	RAMP	ea	-	\$ 91	\$ -	2,165	\$ 91	\$ 196,812	2,519	\$ 91	\$ 228,996	2,931	\$ 91	\$ 266,472	3,411	\$ 91	\$ 310,056	3,969	\$ 91	\$ 360,780	4,618	\$ 91	\$ 419,808	\$ 2,200,650	Capacitor bank costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
2	Capacitor Bank	Non-Labor	RAMP	ea		\$ 363,772	\$ -	2	\$ 363,772	\$ 727,543	2	\$ 363,772	\$ 727,543	2	\$ 363,772	\$ 727,543		\$ 363,772	\$ -	2	\$ 363,772	\$ 727,543	2	\$ 363,772	\$ 727,543	\$ 2,627,736	Breaker costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
3	Breaker	Non-Labor	RAMP	ea		\$ 60,000	\$ -	3	\$ 60,000	\$ 180,000	5	\$ 60,000	\$ 300,000	1	\$ 60,000	\$ 60,000	4	\$ 60,000	\$ 240,000	4	\$ 60,000	\$ 240,000	3	\$ 60,000	\$ 180,000	\$ 1,440,000	Cable and hinge costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
4	Cables/Hinges/etc	Non-Labor	RAMP	ea		\$ 21	\$ -	2,999	\$ 21	\$ 62,021	346	\$ 21	\$ 7,157	801	\$ 21	\$ 16,558	478	\$ 21	\$ 9,890	3,083	\$ 21	\$ 63,766	2,577	\$ 21	\$ 53,293	\$ 214,440	Engineering and other services are estimated based upon support needed for workload forecasted. Contract service rates are based upon 2024 base year rates.
5	Contractors	Non-Labor	RAMP	ea	-	\$ 100,000	\$ -	3	\$ 100,000	\$ 328,320	4	\$ 100,000	\$ 387,032	4	\$ 100,000	\$ 444,528	5	\$ 100,000	\$ 517,348	6	\$ 100,000	\$ 601,872	7	\$ 100,000	\$ 700,344	\$ 3,990,385	Transformer costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
6	Transformers	Non-Labor	RAMP	ea	1	\$ 1,147,446	\$ 1,147,446			\$ -		\$ -	\$ -	1	\$ 1,000,000	\$ 1,000,000	1	\$ 1,000,000	\$ 1,000,000	1	\$ 1,000,000	\$ 1,000,000	1	\$ 1,000,000	\$ 1,000,000	\$ 5,147,446	Switch gear costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
7	Switchgear	Non-Labor	RAMP	ea		\$ 456,000	\$ -	1	\$ 456,000	\$ 456,000	1	\$ 456,000	\$ 456,000		\$ 456,000	\$ -	2	\$ 456,000	\$ 912,000	1	\$ 456,000	\$ 456,000	2	\$ 456,000	\$ 912,000	\$ 2,648,000	Panel costs are based on 2024 base year costs per unit. Quantities are calculated based upon forecasted workload for this program.
8	PANEL/CONTROL PANEL	Non-Labor	RAMP	ea		\$ 42,021	\$ -		\$ 42,021	\$ -	4	\$ 42,021	\$ 168,084	3	\$ 42,021	\$ 126,063	2	\$ 42,021	\$ 84,042	3	\$ 42,021	\$ 126,063	4	\$ 42,021	\$ 168,084	\$ 734,357	

Summary																		
	Labor	RAMP			\$ -		\$ 196,812		\$ 228,996		\$ 266,472		\$ 310,056		\$ 360,780		\$ 419,808	\$ 3,200,650
	Non-Labor	RAMP			\$ 1,147,446		\$ 1,753,884		\$ 2,040,916		\$ 2,374,692		\$ 2,763,180		\$ 3,215,344		\$ 3,741,264	\$ 18,792,344
Subtotal RAMP					\$ 1,147,446		\$ 1,950,696		\$ 2,269,812		\$ 2,641,164		\$ 3,073,236		\$ 3,576,024		\$ 4,161,072	\$ 21,992,994
	Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -
	Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -
Subtotal Non-RAMP					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	\$ -
Total Project Forecast					\$ 1,147,446		\$ 1,950,696		\$ 2,269,812		\$ 2,641,164		\$ 3,073,236		\$ 3,576,024		\$ 4,161,072	\$ 6,271,686

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C258 - Emergency Equipment Purchase
Budget Code(s):	06254.0
Estimated In Service Date:	Ongoing

06254.0 - SDG&E-Risk & Electric Infrastructure Integrity Emergency Equipment Purchase				2025			2026			2027			2028			2029			2030			2031					
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (ea./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Comments	
1	Substation Transformers	Non-Labor	RAMP	EA	0.8	\$ 2,500,000	\$ 2,000,000	0.2	\$ 2,500,000	\$ 500,000	1.0	\$ 2,500,000	\$ 2,500,000	0.8	\$ 2,500,000	\$ 2,000,000	0.2	\$ 2,500,000	\$ 500,000	0.8	\$ 2,500,000	\$ 2,000,000	0.2	\$ 2,500,000	\$ 500,000	\$ 10,750,000	Unit Cost of \$2.5M is average of four different types of transformer from two different MSA manufacturers. Assuming 20% downpayment and 80% in the following year for manufacturing and delivery.
2	Substation Circuit Breakers	Non-Labor	RAMP	EA	2	\$ 42,000	\$ 84,000	2	\$ 42,000	\$ 84,000	2	\$ 42,000	\$ 84,000	2	\$ 42,000	\$ 84,000	2	\$ 42,000	\$ 84,000	2	\$ 42,000	\$ 84,000	2	\$ 42,000	\$ 84,000	\$ 588,000	Unit cost of \$42k is average of three different types of breaker. Assuming purchase of 2 per year.
3	Misc. Substation Equipment	Non-Labor	RAMP	EA	70	\$ 3,000	\$ 210,000	70	\$ 3,000	\$ 210,000	70	\$ 3,000	\$ 210,000	70	\$ 3,000	\$ 210,000	70	\$ 3,000	\$ 210,000	70	\$ 3,000	\$ 210,000	70	\$ 3,000	\$ 210,000	\$ 1,554,000	Units and Unit Costs based on the following annual purchases: 12 bushings at \$58 ea, 24 insulators at \$150 ea, 4 disconnects at \$158 ea, 20 cap cans at \$48 ea, 10 arresters at \$500 ea.
4	FTEs	Labor	RAMP	Hours	1,200	\$ 65	\$ 78,000	300	\$ 65	\$ 19,500	1,200	\$ 65	\$ 78,000	1,200	\$ 65	\$ 78,000	300	\$ 65	\$ 19,500	1,200	\$ 65	\$ 78,000	300	\$ 65	\$ 19,500	\$ 390,000	Assuming blended hourly rate for engineering (non-union) and construction (union) labor. Forecasting additional hours in years with delivery of medium power transformers, for union labor to install transformer on pad.

Summary																										
	Labor	RAMP			\$ 78,000		\$ 19,500		\$ 78,000		\$ 78,000		\$ 19,500		\$ 78,000		\$ 19,500		\$ 78,000		\$ 19,500		\$ 19,500		\$ 137,000	
	Non-Labor	RAMP			\$ 2,294,000		\$ 794,000		\$ 2,294,000		\$ 2,294,000		\$ 794,000		\$ 2,294,000		\$ 794,000		\$ 2,294,000		\$ 794,000		\$ 794,000		\$ 3,922,000	
	Subtotal RAMP				\$ 2,372,000		\$ 813,500		\$ 2,372,000		\$ 2,372,000		\$ 813,500		\$ 2,372,000		\$ 813,500		\$ 2,372,000		\$ 813,500		\$ 813,500		\$ 4,039,000	
	Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Subtotal Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Total Project Forecast				\$ 2,372,000		\$ 813,500		\$ 2,372,000		\$ 2,372,000		\$ 813,500		\$ 2,372,000		\$ 813,500		\$ 2,372,000		\$ 813,500		\$ 813,500		\$ 4,039,000	

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C261 - Power Quality Monitor Deployment and Replacement
Budget Code(s):	94241
Estimated In Service Date:	Ongoing

94241 - SDG&E-Risk-5 Electric Infrastructure Integrity Power Quality Monitor Deployment and Replacement																											
					2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor / Non-Labor/N55	RAMP/ Non-RAMP	Unit Metric (hrs./ft./miles)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Comments
1	Vendor Materials	Non-Labor	RAMP	Substations	2	\$ 60,000	\$ 120,000	2	\$ 61,800	\$ 123,600	1	\$ 62,727	\$ 62,727	1	\$ 64,131	\$ 64,131	2	\$ 65,332	\$ 130,664	1	\$ 66,674	\$ 66,674	1	\$ 67,983	\$ 67,983	\$ 635,779	Material costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.
2	Warehouse Materials	Non-Labor	RAMP	Substations	2	\$ 728	\$ 1,455	2	\$ 749	\$ 1,499	2	\$ 772	\$ 1,544	2	\$ 795	\$ 1,590	2	\$ 819	\$ 1,638	2	\$ 843	\$ 1,687	2	\$ 869	\$ 1,737	\$ 11,149	Material costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.
3	Contract Services	Non-Labor	RAMP	Substations	3	\$ 33,486	\$ 100,457	2	\$ 29,824	\$ 59,647	3	\$ 35,187	\$ 105,560	2	\$ 35,492	\$ 70,984	1	\$ 29,663	\$ 29,663	2	\$ 32,708	\$ 65,416	2	\$ 36,339	\$ 72,678	\$ 778,775	Engineering and other services are unit estimated based upon assessment of job scope and proposals. From experienced approved contractors.
4	Union Labor	Labor	RAMP	hours	253	\$ 75	\$ 18,975	164	\$ 75	\$ 12,300	169	\$ 75	\$ 12,675	348	\$ 75	\$ 26,100	179	\$ 75	\$ 13,425	329	\$ 75	\$ 24,675	190	\$ 75	\$ 14,250	\$ 161,700	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
5	Non-Union Labor	Labor	RAMP	hours	-	\$ 65	\$ -	-	\$ 65	\$ -	193	\$ 65	\$ 12,545	395	\$ 65	\$ 25,675	201	\$ 65	\$ 13,065	410	\$ 65	\$ 26,650	418	\$ 65	\$ 27,170	\$ 105,105	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
6													\$ -			\$ -			\$ -			\$ -			\$ -	\$ -	
7	Mgmt & Non-Union Labor (OH	Labor	RAMP	hours									\$ -	200	\$ 65	\$ 13,000	200	\$ 65	\$ 13,000	200	\$ 65	\$ 13,000	100	\$ 65	\$ 6,500	\$ 41,500	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
8	Union Labor (OH Devices)	Labor	RAMP	hours									\$ -	500	\$ 75	\$ 37,500	500	\$ 75	\$ 37,500	500	\$ 75	\$ 37,500	250	\$ 75	\$ 18,750	\$ 131,250	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
9	Materials, Vendor Procured (C	Non-Labor	RAMP	Nodes									\$ -	20	\$ 2,285	\$ 45,700	20	\$ 2,399	\$ 47,985	20	\$ 2,399	\$ 47,985	10	\$ 2,399	\$ 23,993	\$ 165,663	Material costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.
10	Contract Services (OH Devices)	Non-Labor	RAMP	Nodes									\$ -	20	\$ 5,155	\$ 103,100	20	\$ 5,413	\$ 108,255	20	\$ 5,413	\$ 108,255	10	\$ 5,413	\$ 54,128	\$ 373,738	Engineering and other services are unit estimated based upon assessments of job scope and proposals. From experienced approved contractors.
11																											
12	Mgmt & Non-Union Labor (UG	Labor	RAMP	hours									\$ -	680	\$ 65	\$ 44,200	680	\$ 65	\$ 44,200	680	\$ 65	\$ 44,200	250	\$ 65	\$ 16,250	\$ 148,850	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
13	Union Labor (UG Devices)	Labor	RAMP	hours									\$ -	2,040	\$ 75	\$ 153,000	2,040	\$ 75	\$ 153,000	2,040	\$ 75	\$ 153,000	750	\$ 75	\$ 56,250	\$ 515,250	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
14	Materials, Vendor Procured (L	Non-Labor	RAMP	Nodes			\$ -			\$ -			\$ -	68	\$ 5,030	\$ 342,040	68	\$ 5,030	\$ 342,040	68	\$ 5,030	\$ 342,040	25	\$ 5,030	\$ 125,750	\$ 1,151,870	Material costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.
15	Contract Services (UG Devices)	Non-Labor	RAMP	Nodes			\$ -			\$ -			\$ -	68	\$ 7,895	\$ 536,860	68	\$ 7,895	\$ 536,860	68	\$ 7,895	\$ 536,860	25	\$ 7,895	\$ 197,375	\$ 1,807,955	Engineering and other services are unit estimated based upon assessment of job scope and proposals. From experienced approved contractors.

Summary													
Subtotal RAMP	Labor	RAMP		\$ 18,975		\$ 12,300		\$ 25,220		\$ 299,475		\$ 274,190	
	Non-Labor	RAMP		\$ 221,912		\$ 184,746		\$ 169,831		\$ 1,164,405		\$ 1,197,104	
Subtotal Non-RAMP	Labor	Non-RAMP		\$ 240,887		\$ 197,046		\$ 195,051		\$ 1,463,880		\$ 1,471,794	
	Non-Labor	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -	
Total Project Forecast				\$ 240,887		\$ 197,046		\$ 195,051		\$ 1,463,880		\$ 1,471,794	

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C262 - Distribution Substation SCADA Expansion
Budget Code(s):	15243.0
Estimated In Service Date:	Ongoing

15243.0 - SDG&E Risk-5 Electric Infrastructure Integrity Distribution Substation SCADA Expansion				2025			2026			2027			2028			2029			2030			2031					
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (sq./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Comments	
1	Vendor Materials	Non-Labor	RAMP	Substations	-	\$ -	\$ -	-	\$ -	\$ -	-	\$ -	\$ -	6	\$ 11,763	\$ 70,580	6	\$ 11,763	\$ 70,580	6	\$ 11,763	\$ 70,580	6	\$ 11,763	\$ 70,580	\$ 325,374	Vendor materials include relays and relay panels. Quantities and costs are cost based upon standard purchase amounts from both manufacturers and panel fabrication facilities. Quantities are calculated based upon the SPACE standard for the application of protective relays per project type.
2	Warehouse Materials	Non-Labor	RAMP	Substations	2	\$ 12,375	\$ 24,750	3	\$ 9,874	\$ 29,623	2	\$ 10,171	\$ 20,341	6	\$ 10,171	\$ 61,024	6	\$ 10,171	\$ 61,024	6	\$ 10,171	\$ 61,024	6	\$ 10,171	\$ 61,024	\$ 339,208	Warehouse materials required to complete the relay and relay panel installations per the engineering designs are unit estimated based upon the substation designers and contractors, field supervisors, as well as the engineers involved in the project when referencing the job scope. Costs are calculated based upon stocked items and standard unit quantities of materials commonly used in industry to install and commission such equipment.
3	Contract Services	Non-Labor	RAMP	Substations	1	\$ 110,527	\$ 110,527	2	\$ 68,774	\$ 137,548	2	\$ 70,837	\$ 141,674	6	\$ 70,837	\$ 425,022	6	\$ 70,837	\$ 425,022	6	\$ 70,837	\$ 425,022	6	\$ 70,837	\$ 425,022	\$ 2,227,923	Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors.
4	Union Labor	Labor	RAMP	Substations	5,556	\$ 75	\$ 416,700	5,563	\$ 75	\$ 417,225	5,730	\$ 75	\$ 429,750	5,600	\$ 80	\$ 445,200	5,600	\$ 80	\$ 445,200	5,600	\$ 80	\$ 445,200	5,600	\$ 80	\$ 445,200	\$ 3,217,500	Labor is unit estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope.
5	Non-Union Labor	Labor	RAMP	Substations	-	\$ 65	\$ -	-	\$ 65	\$ -	-	\$ 65	\$ -	600	\$ 69	\$ 41,340	600	\$ 69	\$ 41,340	600	\$ 69	\$ 41,340	600	\$ 69	\$ 41,340	\$ 202,345	Labor is unit estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope.

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2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C263 - Wireless Fault Indicators
Budget Code(s):	20288.0
Estimated in Service Date:	Ongoing

20288.0 - SDG&E-Risk-5 Electric Infrastructure Integrity Wireless Fault Indicators																											
					2025			2026			2027			2028			2029			2030			2031				
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (lbs./ft./miles)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Comments	
1	Services	Non-Labor	RAMP	Service Cost per Widget	0	\$ -		0	\$ -		0	\$ -		75	\$ 857	\$ 64,275	125	\$ 857	\$ 107,125	175	\$ 857	\$ 149,975	225	\$ 857	\$ 192,825	\$ 514,200	Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors.
2	Materials	Non-Labor	RAMP	Material Cost per Widget	0	\$ -		0	\$ -		-	\$ -		75	\$ 1,280	\$ 96,000	125	\$ 1,280	\$ 160,000	175	\$ 1,280	\$ 224,000	225	\$ 1,280	\$ 288,000	\$ 768,000	Wireless fault indicator costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program.

Summary					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Labor	RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Non-Labor	RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Subtotal RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Subtotal Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Total Project Forecast				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	
	Total Units Forecast																									

<b>Workpaper/Mitigation:</b>	C269 - Distribution Circuit Reliability Program
<b>Budget Code(s):</b>	93240.0
<b>Estimated In Service Date:</b>	Ongoing

30240.0 - SOG&E Risk-S Electric Infrastructure Integrity Distribution Circuit Reliability					2025			2026			2027			2028			2029			2030			2031								
Line Item	Unit Description	Labor / Non-Labor/NLS	RAMP / Non-RAMP	Unit Metric (ea./7ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	Total Cost	Comments				
1	Switch	Labor	RAMP	ea	\$	10,965	\$ -	\$	10,965	\$ -	\$	10,965	\$ -	14	\$	8,146	\$	114,037	14	\$	8,146	\$	114,037	14	\$	8,146	\$	114,037	\$	668,552	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes V&S.
2	Switch	Non-Labor	RAMP	ea	\$	171,785	\$ -	\$	171,785	\$ -	\$	171,785	\$ -	14	\$	131,787	\$	1,845,018	14	\$	131,787	\$	1,845,018	14	\$	131,787	\$	1,845,018	\$	9,141,072	Switch costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program. Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors.

Summary																		
	Labor	RAMP		\$ -		\$ -		\$ -		\$ 114,037		\$ 114,037		\$ 114,037		\$ 114,037		\$ 112,404
	Non-Labor	RAMP		\$ -		\$ -		\$ -		\$ 1,845,018		\$ 1,845,018		\$ 1,845,018		\$ 1,761,000		
Subtotal RAMP				\$ -		\$ -		\$ -		\$ 1,959,055		\$ 1,959,055		\$ 1,959,055		\$ 1,873,404		
	Labor	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
	Non-Labor	Non-RAMP		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
Subtotal Non-RAMP				\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -
Total Project Forecast				\$ -		\$ -		\$ -		\$ 1,959,055		\$ 1,959,055		\$ 1,959,055		\$ 1,873,404		

2025 RAMP FORECAST - DETAILS

Workpaper/Mitigation:	C270 - SCADA Capacitors
Budget Code(s):	11249.0
Estimated In Service Date:	Ongoing

11249.0 - SDG&E-Risk-5 Electric Infrastructure Integrity SCADA Capacitors					2025			2026			2027			2028			2029			2030			2031			Total Cost	Comments
Line Item	Unit Description	Labor/ Non-Labor/NSE	RAMP/ Non-RAMP	Unit Metric (lbs./ft./mile)	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost	# of units	Cost per unit	Total cost		
1	Capacitors	Labor	RAMP		-		\$ -	-		\$ -	-		\$ -	14	\$ 7,094	\$ 99,312	14	\$ 7,094	\$ 99,312	14	\$ 7,094	\$ 99,312	14	\$ 7,094	\$ 99,312	\$ 397,248	Labor is estimated based upon assessment of job scope and proposals from experienced construction supervisors. Labor rates are an aggregated average based upon agreed upon labor rates for the skilled labor involved in the work scope. Labor rate includes VBS.
2	Capacitors	Non-Labor	RAMP		-		\$ -	-		\$ -	-		\$ -	14	\$ 76,768	\$ 1,074,751	14	\$ 76,768	\$ 1,074,751	14	\$ 76,768	\$ 1,074,751	14	\$ 76,768	\$ 1,074,751	\$ 4,299,004	Capacitor costs are based upon standard purchase amounts from manufacturers. Quantities are calculated based upon forecasted workload for this program. Engineering and other services are unit estimated based upon assessment of job scope and proposals from experienced approved contractors.

Summary																						
	Labor	RAMP			\$ -		\$ -		\$ -		\$ 99,312		\$ 99,312		\$ 99,312		\$ 99,312		\$ -			
	Non-Labor	RAMP			\$ -		\$ -		\$ -		\$ 1,074,751		\$ 1,074,751		\$ 1,074,751		\$ 1,074,751		\$ -			
Subtotal RAMP					\$ -		\$ -		\$ -		\$ 1,174,063		\$ 1,174,063		\$ 1,174,063		\$ 1,174,063		\$ -			
	Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
	Non-Labor	Non-RAMP			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
Subtotal Non-RAMP					\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -			
Total Project Forecast					\$ -		\$ -		\$ -		\$ 1,174,063		\$ 1,174,063		\$ 1,174,063		\$ 1,174,063		\$ -			
Total Units Forecast																						

Appendix A: Forecast Methodology

Mitigation ID	Mitigation Name	Labor	Non-Labor	NSE	Units
A210	Distribution OH Switch Replacement Program (DVC)	Zero-Based	Zero-Based	Zero-Based	Zero-Based
A234	4kV Full Cutover	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C201	Proactive Overhead Conductor Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C202	Underground Cable Replacement Program (Proactive)	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C206	Tee Modernization Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C208	Replacement of Live Front Equipment	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C210	DOE Switch Replacement	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C212	GO165 Corrective Maintenance Program Underground	3-YR Average	3-YR Average	3-YR Average	3-YR Average
C226	Distribution Substation Proactive Asset Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C227	Streamview Substation Rebuild	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C228	Field SCADA RTU Replacement	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C234	4kV Reliability Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C236	Distribution Overhead Switch Replacement Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C240	Avian Protection Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C247	North Valley (Morro Hill) Substation Rebuild	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C248	Strategic Pole Replacement Program	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C250	Substation Reliability for Distribution Components	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C251	GO165 Corrective Maintenance Program OH	3-YR Average	3-YR Average	3-YR Average	3-YR Average
C252	Management of Overhead Distribution Service (Non-CMP)	3-YR Average	3-YR Average	3-YR Average	3-YR Average
C253	Restoration of Service	3-YR Average	3-YR Average	3-YR Average	3-YR Average
C254	Underground Cable Replacement Program - Reactive	3-YR Average	3-YR Average	3-YR Average	3-YR Average
C256	Management of Underground Distribution Service (Non-CMP)	3-YR Average	3-YR Average	3-YR Average	3-YR Average
C257	Distribution Substation Responsive Asset Replacement	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C258	Emergency Equipment Purchase	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C260	Urban Substation Rebuild	Zero-Based	Zero-Based	Zero-Based	Zero-Based



**Appendix A: Forecast Methodology**

Mitigation ID	Mitigation Name	Labor	Non-Labor	NSE	Units
C261	Power Quality Monitor Deployment and Replacement	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C262	Distribution Substation SCADA Expansion	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C263	Wireless Fault Indicator	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C265	Kettner Substation 69/12kV Rebuild Project	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C269	Distribution Circuit Reliability	Zero-Based	Zero-Based	Zero-Based	Zero-Based
C270	SCADA Capacitors	Zero-Based	Zero-Based	Zero-Based	Zero-Based

Risk Chapter: **SDG&E-Risk-5 Electric Infrastructure Integrity**

Risk ID: **1CR05**

## Appendix B: Unit Measure

Mitigation ID	Mitigation Name	Unit Measure
A210	Distribution OH Switch Replacement Program (DVC)	Switches Replaced
A234	4kV Full Cutover	Miles
C201	Proactive Overhead Conductor Program	Miles
C202	Underground Cable Replacement Program (Proactive)	Miles
C206	Tee Modernization Program	Terminators replaced
C208	Replacement of Live Front Equipment	Terminators replaced
C210	DOE Switch Replacement	Switches Replaced
C212	GO165 Corrective Maintenance Program Underground	Jobs completed
C226	Distribution Substation Proactive Asset Program	No feasible units
C227	Streamview Substation Rebuild	No feasible units
C228	Field SCADA RTU Replacement	RTUs replaced
C234	4kV Reliability Program	Miles
C236	Distribution Overhead Switch Replacement Program	Switches Replaced
C240	Avian Protection Program	Poles
C247	North Valley (Morro Hill) Substation Rebuild	No feasible units
C248	Strategic Pole Replacement Program	Poles replaced
C250	Substation Reliability for Distribution Components	No feasible units
C251	GO165 Corrective Maintenance Program OH	Poles
C252	Management of Overhead Distribution Service (Non-CMP)	Jobs completed
C253	Restoration of Service	Jobs completed
C254	Underground Cable Replacement Program - Reactive	Jobs completed
C256	Management of Underground Distribution Service (Non-CMP)	Jobs completed
C257	Distribution Substation Responsive Asset Replacement	No feasible units
C258	Emergency Equipment Purchase	No feasible units
C260	Urban Substation Rebuild	No feasible units

**Appendix B: Unit Measure**

Mitigation ID	Mitigation Name	Unit Measure
C261	Power Quality Monitor Deployment and Replacement	Nodes
C262	Distribution Substation SCADA Expansion	Other
C263	Wireless Fault Indicator	Wireless fault indicators installed
C265	Kettner Substation 69/12kV Rebuild Project	No feasible units
C269	Distribution Circuit Reliability	Switches
C270	SCADA Capacitors	Capacitors replaced