ATTACHMENT A

Roadmap of Risk Assessment and
Mitigation Phase in its 2025 General Rate Case

Attachment A

RAMP to GRC Financial Reconciliation

Risk	RAMP ID	RAMP Control / Mitigation Name	GRC Exhibit and Volume	GRC Activity	Spend	RAMP Forecast (Nominal $000s)							GRC Forecast (Nominal $000s)							Variance (GRC less RAMP)						
						2022	2023	2024	2025	2026	2027	2028	2022	2023	2024	2025	2026	2027	2028	2022	2023	2024	2025	2026	2027	2028
Contact with Energized Equipment	C1	Overhead Conductor Program	SCE-02 Vol. 01 Part 2	Overhead Conductor Program	Capital	$74,821	$67,717	$69,411	$103,770	$118,251	$121,461	$159,358	$74,101	$61,009	$49,602	$319,204	$321,806	$324,074	$329,125	($719)	($6,708)	($19,809)	$215,434	$203,555	$202,613	$169,766
	C2	Public Outreach Wires Down	SCE-03 Vol. 02	External Communications	O&M	$3,739	$3,739	$3,739	$3,739	$3,739	$3,739	$3,739	$2,515	$2,565	$2,617	$2,669	$2,722	$2,777	$2,832	($1,225)	($1,174)	($1,122)	($1,070)	($1,017)	($962)	($907)
	C3	Public Outreach - Intact	SCE-03 Vol. 02	External Communications	O&M	$2,311	$2,311	$2,311	$2,311	$2,311	$2,311	$2,311	$2,926	$2,985	$3,044	$3,105	$3,167	$3,231	$3,295	$614	$673	$733	$794	$856	$919	$984
Contractor Safety	C1	Pre-Qualification and onboarding	SCE-06 Vol. 06	Employee and Contractor Safety	O&M / Overhead	$518	$694	$782	$870	$880	$880	$880	$518	$694	$782	$870	$880	$880	$880	$0	$0	$0	$0	$0	$0	$0
	C2	Oversight, Perf mgmt. and Culture Dev	SCE-06 Vol. 06	Employee and Contractor Safety	O&M / Overhead	$5,800	$6,580	$6,971	$3,161	$3,161	$3,161	$3,161	$5,800	$6,580	$6,971	$3,161	$3,161	$3,161	$3,161	$0	$0	$0	$0	$0	$0	$0
	C3	Incident Mgmt and Learning	SCE-06 Vol. 06	Employee and Contractor Safety	O&M / Overhead	$330	$418	$463	$507	$512	$512	$512	$330	$418	$463	$507	$512	$512	$512	$0	$0	$0	$0	$0	$0	$0
Cyber Attack	C1	Perimeter Defense	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance and Cyber Software License and Maintenance	O&M	$7,660	$9,684	$10,447	$11,904	$12,087	$12,335	$12,572	$7,500	$8,879	$8,895	$13,947	$14,380	$14,672	$15,100	($160)	($805)	($1,553)	$2,043	$2,293	$2,337	$2,527
	C1	Perimeter Defense	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance	Capital	$38,900	$36,900	$40,010	$41,259	$42,387	$43,537	$44,718	$46,395	$36,917	$40,679	$41,965	$43,097	$44,160	$45,249	$7,495	$18	$669	$706	$710	$622	$531
	C2	Interior Protection	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance and Cyber Software License and Maintenance	O&M	$4,077	$5,223	$5,600	$6,543	$6,642	$7,015	$7,141	$3,579	$4,646	$4,688	$7,772	$8,021	$8,171	$8,419	($499)	($577)	($912)	$1,229	$1,379	$1,156	$1,277
	C2	Interior Protection	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance	Capital	$8,100	$8,100	$8,100	$8,100	$8,321	$8,547	$8,779	$5,172	$8,102	$8,232	$8,230	$8,451	$8,660	$8,874	($2,928)	$2	$132	$130	$130	$113	$95
	C3	Data Protection	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance and Cyber Software License and Maintenance	O&M	$4,087	$5,233	$5,669	$6,391	$6,499	$6,616	$6,731	$3,611	$4,749	$4,759	$7,584	$7,823	$7,984	$8,221	($477)	($484)	($910)	$1,192	$1,325	$1,367	$1,490
	C3	Data Protection	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance	Capital	$8,600	$12,400	$12,400	$12,400	$12,739	$13,085	$13,440	$10,767	$12,406	$12,608	$12,613	$12,954	$13,273	$13,601	$2,167	$6	$208	$213	$215	$188	$161
	C4	SCADA Cybersecurity	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance and Cyber Software License and Maintenance	O&M	$1,445	$1,879	$2,038	$2,290	$2,334	$2,381	$2,424	$1,272	$1,617	$1,668	$2,653	$2,737	$2,799	$2,880	($173)	($262)	($370)	$364	$403	$418	$456
	C4	SCADA Cybersecurity	SCE-04 Vol. 03	Cybersecurity Delivery and IT Compliance	Capital	$2,498	$2,498	$2,498	$2,498	$2,566	$2,636	$2,707	$2,342	$2,499	$2,540	$2,542	$2,610	$2,675	$2,741	($156)	$1	$42	$44	$44	$39	$33
	C5	Grid Modernization Cybersecurity	SCE-04 Vol. 03	Grid Modernization Cybersecurity, Cybersecurity Delivery and IT Compliance and Cyber Software License and Maintenance	O&M	$4,872	$6,277	$6,854	$7,666	$7,797	$7,983	$8,156	$4,491	$5,590	$5,655	$13,023	$13,275	$13,468	$13,717	($381)	($687)	($1,199)	$5,357	$5,478	$5,485	$5,561
	C5	Grid Modernization Cybersecurity	SCE-04 Vol. 03	Grid Modernization Cybersecurity	Capital	$35,234	$36,426	$37,440	$36,348	$35,675	$29,029	$23,475	$29,018	$41,971	$43,694	$69,227	$72,385	$63,969	$55,527	($6,216)	$5,545	$6,254	$32,879	$36,710	$34,940	$32,052
Employee Safety	C1	Safety Culture Transformation	SCE-06 Vol. 04	Employee Training and Development	O&M	$2,324	$2,929	$2,395	$2,395	$2,395	$2,395	$2,395	$1,551	$2,829	$2,295	$2,295	$2,352	$2,411	$2,471	($773)	($100)	($100)	($100)	($43)	$16	$76
	C2	Incident Cause Evaluation	SCE-06 Vol. 04	Employee and Contractor Safety	Overhead	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$1,199	$0	$0	$0	$0	$0	$0	$0
	C3	T&D Field Based Training	SCE-06 Vol. 04	Training Delivery and Development - Transmission and Distribution Training Seat-Time - Transmission and Distribution	O&M	$23,236	$24,138	$24,993	$25,853	$25,853	$25,853	$25,853	$20,516	$25,422	$26,188	$26,914	$27,645	$28,395	$29,166	($2,720)	$1,285	$1,195	$1,061	$1,792	$2,542	$3,312
	C4	Human and Organizational	SCE-06 Vol. 04	Safety Strategy Transformation	O&M	$185	$0	$0	$0	$0	$0	$0	$0	$678	$978	$1,278	$1,310	$1,343	$1,376	($185)	$678	$978	$1,278	$1,310	$1,343	$1,376
	C5	Safety Activities - T&D	SCE-06 Vol. 06	Safety Activities - T&D	O&M	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$10,551	$14,691	$18,532	$19,257	$19,172	$19,916	$20,027	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydro Asset Failure	C1	Seismic Retrofit	SCE-05 Vol. 01	Hydro - Dams and Waterways	Capital	$200	$1,800	-	-	-	-	-	$109	$1,500	-	-	-	-	-	($91)	($300)					
	C2	Dam Surface Protection	SCE-05 Vol. 01	Hydro - Dams and Waterways	Capital	$6,507	-	-	-	-	-	-	$347	$6,406	-	-	-	-	-	($6,160)						
	C3	Spillway Remediation and	SCE-05 Vol. 01	Hydro - Dams and Waterways	Capital	$11,263	$1,400	$6,750	$5,200	$5,000	-	-	$1,758	$7,930	$6,750	$850	$5,000	$4,987	-	($9,505)	$6,530	$0	($4,350)	$0		
	C4	Low Level Outlet Improvements	SCE-05 Vol. 01	Hydro - Dams and Waterways	Capital	$1,123	$1,957	$2,057	$4,039	$6,759	$22	-	$1,342	$20,088	$14,463	$3,472	$943	$4,206	$2,793	$219	$18,131	$12,406	($567)	($5,816)	$4,184	
	C5	Seepage Mitigation	SCE-05 Vol. 01	Hydro - Dams and Waterways	Capital	$250	$150	$150	$3,100	$900	-	-	$0	-	-	$498	$3,100	$900	-	($250)			($2,602)	$2,200		
	C6	Instrumentation / Communication	SCE-05 Vol. 01	Hydro - Dams and Waterways	Capital	$1,000	-	-	$150	-	-	-	$421	$2,351	$60	$330	$1,295	-	-	($579)			$180			

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						2022	2023	2024	2025	2026	2027	2028	2022	2023	2024	2025	2026	2027	2028	2022	2023	2024	2025	2026	2027	2028
Major Physical Security Incident	C1	Protection of Grid Operations	SCE-04 Vol. 04	Protection of Grid Infrastructure Assets	Capital	$38,355	$38,296	$38,540	$29,598	$33,718	$28,700	$22,275	$35,105	$36,975	$46,701	$43,829	$64,452	$69,473	$65,488	($3,250)	($1,321)	$8,161	$14,230	$30,734	$40,772	$43,212
	C2	Protection of Generation Capabilities	SCE-04 Vol. 04	Protection of Generation Assets	Capital	$2,456	$2,080	$1,473	$3,487	$2,203	$2,550	$2,687	$1,613	$1,861	$903	$2,935	$1,676	$2,063	$2,230	($843)	($219)	($569)	($552)	($527)	($487)	($457)
	C3	Protection of Major Business Functions	SCE-04 Vol. 04	Protection of Major Business Functions	Capital	$13,089	$17,713	$16,326	$14,122	$12,699	$11,481	$10,975	$18,334	$16,519	$19,075	$17,244	$16,128	$15,228	$14,968	$5,246	($1,194)	$2,748	$3,123	$3,429	$3,747	$3,993
	C4	Asset Protection	SCE-04 Vol. 04 and SCE-06 Vol. 04	Security Technology Operations, Maintenance and Work Force Protection/Insider Threat and Talent Solutions	O&M	$22,187	$22,665	$23,248	$23,685	$24,154	$24,154	$24,154	$21,708	$23,613	$24,175	$25,199	$25,785	$26,383	$26,892	($479)	$948	$927	$1,514	$1,630	$2,229	$2,738
	C5	Smart Key Program: Phase 1	SCE-04 Vol. 04	Protection of Major Business Functions	Capital	$1,180	$210	$350	$357	$548	$561	$766	$0	$210	$350	$368	$579	$608	$851	($1,180)	$0	$0	$10	$30	$46	$85
	M1	Smart Key Program: Phase 2	SCE-04 Vol. 04	Protection of Grid Infrastructure Assets	Capital	$47	$168	$280	$286	$291	$595	$1,214	$0	$0	$175	$184	$193	$405	$851	($47)	($168)	($105)	($102)	($98)	($190)	($363)
	M2	Smart Key Program: Phase 3	SCE-04 Vol. 04	Protection of Grid Infrastructure Assets	Capital	$1,180	$210	$350	$357	$548	$561	$766	$0	$0	$175	$184	$193	$405	$851	($1,180)	($210)	($175)	($174)	($355)	($156)	$85
	M3	Enhanced Access Control	SCE-04 Vol. 04	Protection of Major Business Functions, Protection of Grid Infrastructure Assets and Protection of Generation Assets	Capital	$0	$500	$1,810	$1,810	$1,810	$1,810	$1,810	$0	$250	$1,582	$1,582	$1,582	$1,582	$1,582	$0	($250)	($229)	($229)	($229)	($229)	($229)
PSPS	C22	Weather Stations	SCE-04 Vol. 05 Part 4	Enhanced Situational Awareness	Capital and O&M	$3,021	$1,445	$1,898	$496	$384	$136	$136	$6,487	$7,643	$6,762	$6,398	$6,044	$5,160	$5,471	$3,466	$6,197	$4,864	$5,902	$5,660	$5,024	$5,335
	C23	CRC/CCV	SCE-04 Vol. 05 Part 4	PSPS Execution	O&M	$1,676	$1,731	$1,465	$1,491	$1,519	$1,551	$1,583	$365	$1,298	$1,286	$1,296	$1,315	$1,306	$1,362	($1,311)	($433)	($178)	($194)	($205)	($244)	($220)
	C24	CCBB	SCE-04 Vol. 05 Part 4	PSPS Customer Support	O&M	$10,414	$8,159	$7,268	$6,345	$6,467	$6,599	$6,735	$9,809	$13,140	$8,507	$8,671	$8,825	$8,981	$9,135	($605)	$4,981	$1,239	$2,326	$2,358	$2,382	$2,399
	C25	Community Resiliency	SCE-04 Vol. 05 Part 4	PSPS Customer Support	O&M	$1,100	$901	$906	$916	$931	$948	$965	$930	$1,328	$1,521	$1,356	$1,364	$1,373	$1,381	($170)	$428	$615	$439	$433	$425	$416
	C26	211 Partnerships	SCE-04 Vol. 05 Part 4	PSPS Customer Support	O&M	$2,487	$927	$927	$927	$927	$927	$927	$973	$1,604	$1,990	$1,968	$2,005	$2,041	$2,079	($1,514)	$677	$1,062	$1,040	$1,077	$1,114	$1,152
	C27	Weather and Fuels Modeling	SCE-04 Vol. 05 Part 4	Enhanced Situational Awareness	Capital and O&M	$2,086	$1,749	$1,843	$1,791	$2,046	$2,108	$2,171	$6,113	$6,625	$5,652	$8,327	$5,746	$8,046	$6,345	$4,027	$4,876	$3,808	$6,536	$3,700	$5,939	$4,175
	C28	Fire Science	SCE-04 Vol. 05 Part 4	Enhanced Situational Awareness	Capital and O&M	$2,682	$2,850	$2,901	$2,953	$3,010	$3,100	$3,193	$2,130	$2,427	$2,360	$3,828	$3,393	$2,812	$2,884	($552)	($423)	($541)	$874	$383	($288)	($309)
	F3	Community Meetings	SCE-04 Vol. 05 Part 4	PSPS Customer Support	O&M	$ 110	$ 112	$ 114	$ 116	$ 118	$ 121	$ 123	$6	$117	$125	$132	$139	$145	$0	$ (104)	$ 5	$ 11	$ 16	$ 21	$ 24	$ (123)
	F4	Marketing	SCE-04 Vol. 05 Part 4	PSPS Customer Support	O&M	$ 11,443	$ 11,489	$ 11,509	$ 11,617	$ 15,074	$ 15,313	$ 15,568	$9,485	$10,786	$10,114	$10,231	$10,500	$10,452	$10,506	$ (1,958)	$ (703)	$ (1,394)	$ (1,386)	$ (4,575)	$ (4,861)	$ (5,062)
	F5	PSPS Research & Education	SCE-04 Vol. 05 Part 4	PSPS Customer Support	O&M	$ 6,038	$ 6,299	$ 6,411	$ 6,527	$ 6,651	$ 6,787	$ 6,928	$1,880	$4,017	$4,357	$4,337	$4,419	$4,501	$4,583	$ (4,158)	$ (2,282)	$ (2,054)	$ (2,189)	$ (2,232)	$ (2,286)	$ (2,345)
Seismic	C1	Seismic Building Safety - Electric	SCE-04 Vol. 01	All Hazards Assessment, Mitigation and Analytics	O&M	$494	$494	$494	$494	$494	$494	$494	$628	$300	$200	$200	$200	$200	$200	$134	($194)	($294)	($294)	($294)	($294)	($294)
	C1	Seismic Building Safety - Electric	SCE-04 Vol. 01	All Hazards Assessment, Mitigation and Analytics	Capital	$24,664	$32,010	$27,821	$44,000	$44,000	$44,000	$44,000	$19,793	$22,825	$21,275	$21,775	$21,775	$17,575	$17,575	($4,870)	($9,185)	($6,546)	($22,225)	($22,225)	($26,425)	($26,425)
	C2	Seismic Building Safety - IT Telecom	SCE-04 Vol. 01	All Hazards Assessment, Mitigation and Analytics	Capital	$2,205	$2,200	$2,500	$4,700	$4,700	$4,700	$4,700	$1,559	$2,187	$2,000	$2,500	$3,300	$2,550	$1,800	($646)	($13)	($500)	($2,200)	($1,400)	($2,150)	($2,900)
	C3	Seismic Building Safety - Generation	SCE-04 Vol. 01	All Hazards Assessment, Mitigation and Analytics	Capital	$1,250	$1,300	$1,200	$1,200	$1,200	$1,200	$1,200	$559	$1,220	$1,200	$1,500	$1,700	$1,700	$1,250	($691)	($80)	$0	$300	$500	$500	$50
	C4	Facility Emergency Management Program	SCE-04 Vol. 02	Training, Drills and Exercises	O&M	$791	$791	$791	$791	$791	$791	$791	$804	$584	$610	$641	$673	$706	$742	$13	($207)	($181)	($150)	($118)	($85)	($49)

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						2022	2023	2024	2025	2026	2027	2028	2022	2023	2024	2025	2026	2027	2028	2022	2023	2024	2025	2026	2027	2028
Underground Equipment Failure	C1	Cable Replacement Programs (CIC)	SCE-01 Vol. 02 Part 2	Cable-In-Conduit (CIC) Replacement Program	Capital	$6,162	$5,987	$38,000	$28,000	$75,977	$78,033	$80,149	$8,069	$5,738	$6,992	$62,467	$62,986	$63,431	$64,399	$1,907	($248)	($31,008)	$34,467	($12,992)	($14,602)	($15,750)
	C2	UG Switch Replacement Program	SCE-01 Vol. 02 Part 2	Underground Switch Replacements	Capital	$2,956	$3,146	$3,224	$3,312	$3,402	$3,495	$3,589	$4,272	$3,175	$3,244	$13,399	$13,507	$13,602	$13,811	$1,317	$29	$20	$10,087	$10,105	$10,107	$10,222
	C3	Cable Replacement Programs (WCR)	SCE-01 Vol. 02 Part 2	Underground Cable Replacement (UCR)	Capital	$7,161	$4,205	$38,854	$60,602	$69,851	$71,747	$73,693	$6,049	$10,433	$5,767	$98,632	$99,516	$100,264	$101,838	($1,112)	$6,228	($33,087)	$38,030	$29,665	$28,518	$28,145
	C4	Cover Pressure Relief and Restraint (CPRR) Program	SCE-01 Vol. 02 Part 2	Underground Structure Replacements	Capital	$7,688	$7,897	$8,108	$8,328	$8,555	$8,788	$9,026	$7,290	$7,858	$8,138	$9,014	$9,088	$9,152	$9,293	($398)	($39)	$31	$686	$532	$364	$267
Wildfire	F2	Arbora	SCE-02 Vol. 10	Wildfire Mitigation and Vegetation Management Technology Solutions	Capital and O&M	$3,500	$3,800	$4,000	$0	$0	$0	$0	$10,421	$6,403	$6,747	$6,637	$9,069	$6,349	$6,846	$6,921	$2,603	$2,747	$6,637	$9,069	$6,349	$6,846
	C1 and C1a	WCCP & FR Poles	SCE-04 Vol. 05 Part 2	Grid Hardening	Capital and O&M	$697,957	$723,601	$752,979	$538,239	$192,810	$32,784	$33,657	$791,274	$844,460	$889,670	$649,559	$234,220	$40,341	$40,442	$93,317	$120,859	$136,691	$111,320	$41,411	$7,557	$6,785
	C10 and C11	Distribution Ground and Aerial Inspections	SCE-04 Vol. 05 Part 2 and Part 3	High Fire Risk Inspections and Remediations	Capital and O&M	$120,130	$115,503	$111,055	$134,544	$134,076	$136,566	$139,331	$165,247	$209,971	$232,920	$235,413	$231,399	$236,004	$242,379	$45,117	$94,469	$121,865	$100,869	$97,323	$99,438	$103,048
	C12 and C13	Transmission Ground and Aerial Inspections	SCE-04 Vol. 05 Part 3	High Fire Risk Inspections and Remediations	Capital and O&M	$44,772	$32,998	$33,608	$33,802	$42,189	$42,974	$43,788	$34,092	$41,416	$40,764	$44,100	$43,663	$45,120	$46,475	($10,680)	$8,418	$7,156	$10,298	$1,473	$2,145	$2,687
	C14	Distribution Infrared Inspections	SCE-04 Vol. 05 Part 3	Infrared Inspection Program	O&M	$427	$430	$438	$451	$457	$464	$471	$467	$589	$501	$513	$525	$536	$548	$40	$158	$63	$62	$68	$73	$76
	C15	Transmission Infrared Inspections	SCE-04 Vol. 05 Part 3	Infrared Inspection Program	O&M	$209	$219	$231	$237	$244	$251	$258	$76	$103	$106	$109	$110	$112	$113	($132)	($116)	($125)	($129)	($134)	($139)	($145)
	C16	Hazard Tree Mitigation Program	SCE-02 Vol. 10	Wildfire Vegetation Management	O&M	$42,636	$45,575	$44,039	$46,056	$47,543	$48,969	$50,439	$24,171	$37,366	$52,112	$48,774	$48,774	$48,774	$48,774	($18,464)	($8,209)	$8,073	$2,718	$1,231	($195)	($1,665)
	C17	Expanded Pole Brushing	SCE-02 Vol. 10	Distribution Routine Vegetation Management	O&M	$7,882	$7,754	$7,702	$7,739	$7,839	$7,957	$8,082	$10,811	$8,699	$9,569	$10,526	$11,578	$12,736	$14,010	$2,928	$945	$1,867	$2,787	$3,739	$4,780	$5,927
	C18	Dead and Dying Tree Removal Program	SCE-02 Vol. 10	Dead and Dying Tree Removal Program	O&M	$31,258	$36,212	$39,419	$44,700	$50,996	$51,759	$52,577	$29,003	$28,946	$32,666	$38,377	$38,377	$38,377	$38,377	($2,255)	($7,266)	($6,753)	($6,323)	($12,619)	($13,382)	($14,200)
	C19	Expanded Line Clearing	SCE-02 Vol. 10	Distribution Routine Vegetation Management	O&M	$40,975	$42,204	$43,470	$44,774	$46,117	$47,501	$48,926	$60,461	$9,783	$10,762	$10,762	$10,762	$10,762	$10,762	$19,486	($32,421)	($32,708)	($34,012)	($35,355)	($36,739)	($38,164)
	C21	Aerial Suppression	SCE-04 Vol. 05 Part 4	Aerial Suppression	O&M	$18,000	$17,707	$17,588	$17,672	$18,202	$18,748	$19,311	$18,200	$35,000	$35,000	$34,999	$34,999	$35,000	$35,000	$200	$17,293	$17,412	$17,327	$16,797	$16,252	$15,689
	C4	RAR/RCS	SCE-04 Vol. 05 Part 2	HFRA Sectionalizing Devices	Capital and O&M	$3,615	$0	$0	$2,003	$2,069	$2,420	$3,080	$2,294	$2,505	$2,629	$7,165	$7,298	$8,457	$1,625	($1,321)	$2,505	$2,629	$5,162	$5,229	$6,037	($1,455)
	C5	Transmission Open Phase Detection (TOPD)	SCE-04 Vol. 05 Part 3	Alternative Technologies	O&M	$2,516	$0	$0	$0	$0	$0	$0	$1,193	$736	$427	$0	$0	$0	$0	($1,323)	$736	$427	$0	$0	$0	$0
	C6	Tree Attachment Remediation	SCE-04 Vol. 05 Part 2	Grid Hardening	Capital	$16,552	$16,265	$16,819	$17,415	$0	$0	$0	$16,835	$16,697	$17,484	$10,570	$0	$0	$0	$283	$431	$665	($6,845)	$0	$0	$0
	C8	Long Span Initiative (LSI)	SCE-04 Vol. 05 Part 2	Grid Hardening	Capital and O&M	$10,747	$18,096	$29,303	$30,052	$0	$0	$0	$11,922	$3,343	$8,505	$8,727	$8,873	$9,058	$9,169	$1,175	($14,753)	($20,798)	($21,325)	$8,873	$9,058	$9,169
	F1	Inspection Work Management Tools	SCE-04 Vol. 05 Part 3	Wildfire Mitigation and Vegetation Management Technology Solutions	Capital and O&M	$ 25,213	$ 14,797	$ 21,047	$ 23,791	$ 18,261	$ 18,582	$ 18,942	$10,517	$7,785	$5,680	$3,131	$2,328	$2,324	$3,030	$ (14,696)	$ (7,011)	$ (15,367)	$ (20,660)	$ (15,933)	$ (16,258)	$ (15,912)
	F6	WiSDM	SCE-04 Vol. 05 Part 3	Wildfire Mitigation and Vegetation Management Technology Solutions	Capital and O&M	$ 8,900	$ 2,025	$ 800	$ 8,031	$ 7,857	$ -	$ -	$6,836	$6,120	$3,686	$3,177	$2,102	$2,100	$2,097	$ (2,064)	$ 4,095	$ 2,886	$ (4,854)	$ (5,755)	$ 2,100	$ 2,097
	F7	Ezy	SCE-04 Vol. 05 Part 3	Wildfire Mitigation and Vegetation Management Technology Solutions	Capital and O&M	$ 1,882	$ 3,410	$ 4,516	$ 4,151	$ 4,155	$ -	$ -	$7,795	$8,329	$6,389	$4,441	$4,999	$4,944	$8,979	$ 5,913	$ 4,919	$ 1,873	$ 290	$ 844	$ 4,944	$ 8,979
	M1	Targeted Undergrounding - Distribution	SCE-04 Vol. 05 Part 2	Grid Hardening	Capital	$51,960	$42,664	$45,990	$283,620	$798,300	$1,086,880	$927,130	$29,704	$25,618	$48,884	$304,671	$851,244	$1,143,122	$966,719	($22,256)	($17,046)	$2,894	$21,051	$52,944	$56,242	$39,589
	M2	Rapid Earth Fault Current Limiters	SCE-04 Vol. 05 Part 2	Grid Hardening	Capital	$10,596	$23,917	$28,836	$49,523	$50,585	$51,676	$52,904	$12,035	$21,176	$35,878	$46,254	$46,279	$46,484	$46,554	$1,439	($2,741)	$7,042	($3,269)	($4,306)	($5,192)	($6,350)
	M3	Vibration Damper Retrofit	SCE-04 Vol. 05 Part 2	Grid Hardening	Capital	$108	$369	$555	$839	$856	$0	$0	$174	$107	$171	$238	$243	$0	$0	$66	($261)	($384)	($601)	($613)	$0	$0
	M4	Distribution Open Phase Detection	SCE-04 Vol. 05 Part 3	Alternative Technologies	Capital and O&M	$260	$0	$0	$1,125	$1,399	$1,072	$1,200	$62	$99	$99	$1,639	$1,667	$1,695	$1,740	($198)	$99	$99	$515	$268	$624	$541
	M5	Early Fault Detection (EFD)	SCE-04 Vol. 05 Part 3	Alternative Technologies	Capital and O&M	$5,525	$0	$0	$13,188	$12,353	$12,620	$12,901	$1,745	$3,732	$3,884	$12,644	$11,947	$12,267	$12,627	($3,780)	$3,732	$3,884	($544)	($406)	($353)	($275)
	M6	High Impedance (Hi-Z) Relays	SCE-04 Vol. 05 Part 3	Alternative Technologies	Capital and O&M	$1,200	$0	$0	$1,019	$910	$952	$1,105	$457	$106	$109	$1,337	$1,380	$1,418	$1,462	($743)	$106	$109	$318	$470	$466	$357

Attachment B

RAMP Recommendation Roadmap

Party(s)	RAMP Risk / Area	Party Recommendation	Citation to Party Recommendation	GRC Testimony Location Response
Cal Advocates	Asset Management	Cal Advocates recommends that SCE's upcoming General Rate Case (GRC) filing should: Assess the risk for overdue, deferred, or incomplete safety work and include explicit GRC programs to mitigate this risk. SCE should graphically present the status of authorized, necessary, deferred or incomplete safety work, and evaluate the increased risk from aging infrastructure when identified, authorized, safety and reliability work is deferred or remains incomplete. The Commission should require SCE to develop an action plan to complete backlogs and deferred safety and reliability work. This action plan would then be part of SCE's upcoming GRC application.	Informal Comments of The Public Advocates Office on Southern California Edison Company 2022 Risk Assessment Mitigation Phase, pp. 3 – 4.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
Cal Advocates	Asset Management	SPD should assess the risk of SCE's overdue and unresolved maintenance in High Fire Threat Districts. The Commission should require SCE to address its backlogs in a timely manner to reduce the threat to public safety from overdue maintenance.	Informal Comments of The Public Advocates Office on Southern California Edison Company 2022 Risk Assessment Mitigation Phase, pp. 1 – 3.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
Cal Advocates	Asset Management	SPD should evaluate backlogs for all safety work, not just electric safety work. An analysis of backlog metrics can also uncover significant risks in other business units. One example would include SCE's hydro and dam assets.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p. 58.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
Cal Advocates	Risk Management Process	Cal Advocates recommends that SCE's upcoming General Rate Case (GRC) filing should: Evaluate SCE's risk management processes for potential improvements to address and prevent safety and reliability incidents. SCE should evaluate its risk management processes to determine potential areas of improvement to prevent incidents. SCE's evaluation should incorporate process improvements found as part of the company's root cause analysis (RCA) of a September 15, 2022 incident at SCE's Big Creek facility ("Big Creek Incident").	Opening Comments of The Public Advocates Office on The Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase Application and The Safety Policy Division Staff Evaluation Report, pp. 3 – 7.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
Cal Advocates	Risk Management Process	Cal Advocates recommends that SCE's upcoming General Rate Case (GRC) filing should: Evaluate SCE's risk management processes for potential improvements to address and prevent safety and reliability incidents. SCE should evaluate its risk management processes to determine potential areas of improvement to prevent incidents. SCE's evaluation should incorporate process improvements found as part of the company's root cause analysis (RCA) of a September 15, 2022 incident at SCE's Big Creek facility ("Big Creek Incident").	Opening Comments of The Public Advocates Office on The Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase Application and The Safety Policy Division Staff Evaluation Report, pp. 2 – 3.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
MGRA	WF / PSPS	SCE should include PSPS as a mitigation in some of its alternatives, with an appropriately constructed set of harms and benefits.	Mussey Grade Road Alliance Informal Comments to The Safety Policy Division Regarding Southern California Edison Company's Ramp Filing, p. 2, 35.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
MGRA	Wildfire	SCE's heavy reliance on Technosylva's consequence modeling has limitations due to premature termination of fire growth.	MGRA Informal Comments to SPD re SCE's RAMP Filing, p.59.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
MGRA	Wildfire	SCE's risk model does not capture correlations between risk drivers that increase outage rates and the "extreme weather" periods it uses for its consequence modeling, thus overweighting some drivers (non-weather related) and underweighting others (wind-driven).	MGRA Informal Comments to SPD re SCE's RAMP Filing, p. 47.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
MGRA	Wildfire	SPD should request that SCE calculate ERM risk values with a RFW filter, in the same manner that PG&E has done for its ERM.	MGRA Informal Comments to SPD re SCE's RAMP Filing, pp. 54 – 55.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
MGRA	Wildfire	SCE should provide any additional results from the continued joint of covered conductor working group as soon as they are available, making a supplemental filing.	MGRA Informal Comments to SPD re SCE's RAMP Filing, p. 5, 50.	SCE-04 Vol. 5 Part 1
MGRA	Wildfire	SCE should provide an alternative that includes advanced technologies such as REFCL in combination with covered conductor, including projected cost and mitigation effectiveness.	MGRA Informal Comments to SPD re SCE's RAMP Filing, p.51.	SCE-04 Vol. 5 Part 1
SBUA	Discount Rate	SBUA respectfully recommends that the Commission require that SCE utilize the weighted average cost of capital (WACC) as the discount rate for both the cost and benefit, when calculating a mitigation's Risk-Spend Efficiency (RSE) score.	Reply Comments of Small Business Utility Advocates On SCE's Risk Assessment And Mitigation Phase Application, p.48.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SBUA	PSPS	The Commission should require SCE to specifically target small businesses for participation in its customer resiliency equipment rebates. SBUA recommends that SCE take specific measures to target small business customers in its "Customer Resilience Equipment Rebates." SBUA recommends that small commercial customers be specifically offered (and educated on) resiliency measures that can help them, and their communities, better manage emergencies.	Opening Comments of Small Business Utility Advocates on SCE's Risk Assessment and Mitigation Phase Application and The Safety Policy Division's Evaluation, pp. 6 -7.	SCE-04 Vol. 5 Part 1
SBUA	PSPS	Southern California Edison should include the number of small commercial customers that it expects to be impacted by PSPS events. The Commission should take this opportunity to order the analysis of PSPS impacts by customer type, including an estimation of the number of small commercial customers (e.g., GS-1 and TOU-GS-1 customers) that are expected to be impacted from PSPS events. In sum, SBUA agrees with the SPD Report that PSPS impacts should be categorized by number and type of customer.	Opening Comments of Small Business Utility Advocates on SCE's Risk Assessment and Mitigation Phase Application and The Safety Policy Division's Evaluation, pp. 4 -5.	SCE-04 Vol. 5 Part 4
SBUA	Risk Management Process	SCE should incorporate an evaluation of its risk management processes in its GRC filing. SBUA agrees with Cal Advocates that SCE should be required to evaluate "organizational and programmatic" causes and develop corrective actions to prevent future incidents; SCE should discuss those RAMP process improvements in its upcoming GRC. In addition to an evaluation of that specific incident, SCE should also discuss risks relating to overdue, deferred, or incomplete safety work in its GRC.	Reply Comments of Small Business Utility Advocates On SCE's Risk Assessment And Mitigation Phase Application, p. 46.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SBUA	VSL	SBUA respectfully recommends that the Commission require SCE to downwardly adjust its "Value of Statistical Life" (VSL) estimate	Reply Comments of Small Business Utility Advocates On SCE's Risk Assessment And Mitigation Phase Application, p.49.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD	Climate Change	SCE should rectify this situation by making concrete mitigation proposals related to climate change adaptations.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p. 58.	SCE-01 Vol. 2
SPD	Climate Change	SCE should show compliance with the Commission's environmental justice and social justice goals in the TY2025 GRC.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p. 58.	SCE-01 Vol. 2
SPD	Contact with Energized Equipment Risk	Although SCE briefly discusses wire-down events and intact contact, SCE omitted discussion of tranche-level impacts in their submission. In the RAMP report, SCE did not identify risk scores for tranches associated with wire-down events and contact with intact equipment. For the purposes of modeling, these missing elements can impact the driver frequency and the likelihood of risk outcomes. According to the S-MAP Settlement agreement utilities are expected to select tranches to achieve "as deep a level of granularity as reasonably possible" when conducting risk analysis. SCE's tranche analysis is not in compliance with the Settlement Agreement requirement.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.42.	SCE-02 Vol. 01 Part 2
SPD	Contact with Energized Equipment Risk	Staff further assessed the SCE input data and replicated the RSE values from the years 2025 through 2028 for the Proposed Plan of a single circuit. For the year 2025, staff has identified that C1 and C2 RSEs differ by 5.20 and 2.80, respectively in comparison to RSEs presented in Chapter 5.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.43.	SCE-02 Vol. 01
SPD	Contact with Energized Equipment Risk	The staff made reasonable calculations for Proposed Plan and Alternative Plan #1 utilizing the RSE methodology and SCE input data. It appears that RSE values are slightly off for C1 and C2 controls. For example, for "Public Outreach – Wire Down" (C2) calculated value appears as 2.20 as opposed to 5.0. This is because SCE calculated only for a single circuit. Staff understanding from the SCE's subject-matter expert is that if they must take all the circuit segments, it will take millions of rows to demonstrate the RSE value to 5.0. This value is provided by SCE's "machine learning tool." Similarly, the "Overhead Conductor Program" (OCP) calculation shows approximately 12.50 off from its actual RSE value of 80.076 for 2025. The same issues are observed for Alternative Plan #2. Staff believes that SCE should present these values in the RAMP report as such that these values are replicable to validate what is being reported.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.45.	SCE-02 Vol. 01

Party(s)	RAMP Risk / Area	Party Recommendation	Citation to Party Recommendation	GRC Testimony Location Response
SPD	Contact with Energized Equipment Risk	As mentioned under Alternative Plan #2, the CEE risk mitigations from M2 through M5 are still being evaluated as pilot studies not yet approved for a full-scale deployment. SCE should present updated information about these alternative mitigations in the GRC filing.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.43.	SCE-02 Vol. 01
SPD	Contact with Energized Equipment Risk	SPD staff also noted that the total cost for either Proposed Plan, Alternative Plan #1, or Alternative Plan #2 is the same. SCE did not offer reduced costs; therefore, ratepayers will pay the same regardless of which plan the Commission approves during the GRC evaluation process. Staff recommends SCE should lay out its rationale for not offering a lower cost to ratepayers during the GRC submission.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.44.	SCE-02 Vol. 01
SPD	Cyber	For the Cyber-security risk chapter, SCE's risk bowtie could be improved to more clearly explain how the potential risk event could be brought to bear; such improvement would bring the cybersecurity risk bowtie closer to meeting expectations and dynamic changes in means and methods. As submitted, the SCE risk bowtie equates subcategories of exposure (i.e., insider threat, supply chain procurement malware) with risk drivers. This has the effect of misidentifying a given trigger event that brings the risk event to be.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p. 48.	SCE-04 Vol. 03
SPD	Cyber	As in the 2018 RAMP filing, SCE's 2022 Analysis Scope of Work and Limitations for the cybersecurity risk RAMP chapter provides a disclaimer noting that Edison's analysis does not speak to resulting significant secondary impacts involving a cyber-attack. As part of the risk and consequence analysis, SCE should attempt to quantify worst-case scenarios and secondary impacts developed via their risk assessments, work with government agencies (e.g., U.S. Department of Homeland Security's Assessment of Electricity Disruption Incident Response Capabilities), and apply the result of simulations and tabletop exercises such as those performed with Gridex.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.48.	SCE-04 Vol. 03
SPD	Cyber	SCE does not adequately explain or justify why the utility proposes a four-year mitigation (risk containment) plan that totals $531.2 million, or about $132.8 million per year to continue five controls addressing three risk tranches. Edison's proposed spending amount represents a sizeable increase over prior spending levels for this risk category, with a total 2018 RAMP budget of just $477.4 million covering a six-year period, amounting to a past annual spend of only $79.6 million. One indicator of SCE's rising costs for its Cyber-security is the overhead cost, or what's referred to in the RAMP as O&M. SCE's 2018 RAMP had O&M costs of $21.5 million in annual spending compared to Edison's 2022 RAMP O&M costs of $34.8 million per year. O&M costs as a share of overall Cyber-security program costs increased slightly from 25 percent in the 2018 RAMP to 26 percent in the 2022 RAMP. It's worth noting that SCE's O&M for this risk is in the high range, with typical IOU O&M program costs tending to account for closer to 10 percent of overall program costs.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.49.	SCE-04 Vol. 03
SPD	Cyber	As with other risks, SCE omitted RSE values for Controls, omitting discussion of 2018 RAMP control descriptions, including one pertaining to Federal compliance obligations. As mentioned in earlier chapters, Decision 21-11-009 requires the calculation of RSEs for risk mitigation, including those previously categorized as controls associated with regulatory compliance obligations.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.49.	SCE-04 Vol. 03
SPD	Cyber	SCE, as in past RAMP submittal iterations, errs on the side of too little disclosure of Cybersecurity program specifics, citing the highly confidential nature of such sensitive information.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.5.	SCE-04 Vol. 03
SPD	Discount Rate	The 10% discount rate applied to incremental mitigation costs when calculating RSEs is excessive. SPD agrees with TURN's observation. Because SCE "finances its operations with a mix of debt and equity issuances," the reasonable incremental cost of capital SCE should use to discount incremental costs should be SCE's Weighted Average Cost of Capital (WACC), which is currently 7.68%. In summary, SPD supports TURN's argument that SCE should use SCE's current WACC to discount costs in the RSE, but SPD does not support TURN's argument that the same WACC is applicable to discount benefits in the RSE. Rather than a rigid direction to stick to a 3% discount rate, SCE should use the best available data combined with subject matter expert judgment, accompanied by a transparent justification to apply a reasonable discount rate for risk reduction benefits in the numerator of SCE's RSE calculations.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 17 – 18.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD	Hydro	Staff notes it is unclear why C2 – Dam Surface Protection and C5 – Seepage Mitigation are separate as they do not appear to have different homogenous risk profiles. Therefore, staff suggests SCE consider consolidating C2 and C5.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.56.	SCE-05 Vol. 1
SPD	Physical Security	Edison's identified Tranche categories for this RAMP risk chapter are generally interchangeable with the utility's identified Controls. SCE's 2022 assignment of risk Tranches aligns with the utility's operational hierarchy (power generation, power delivery, and support services). In this framework, a single risk Tranche contains 85 percent of the overall risk. The analysis could be improved by assigning risk Tranches into more categories that account for discrete portions of the identified risks.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.54.	SCE-04 Vol. 04
SPD	Physical Security	For the Physical Security risk chapter, RSEs could be better presented so as to be more useful. Notably, SCE provides no RSE calculations for its risk chapter and provides little insight into how its limited treatment of RSE was derived. The only hard numbers SCE provides on the subject is a single column within the spending table for each mitigation plan showing the RSE assigned to individual control measures.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 54 – 55.	SCE-04 Vol. 04
SPD	Physical Security	SCE's CM category of controls consists of regulatorily-required controls. As in other chapters, SCE did not provide an analysis or RSE calculations for its CM controls.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.54.	SCE-04 Vol. 04
SPD	PSPS	SCE does not directly quantify exposure to PSPS in terms of the number and type of customers in the RAMP chapter itself. SCE defined tranches at the circuit segment level, but it is not clear how this level of granularity helps explain the risk of a PSPS event to its most vulnerable customers. However, analytically speaking, the benefit of the PSPS controls only make sense if SCE creates tranches associated with different types of customers affected by PSPS events. SPD recommends that SCE should consider analyzing PSPS impacts differently from Wildfire Risk by creating tranches to reflect impacts to different types of customers affected by PSPS Risk Events.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 40 -41.	SCE-04 Vol. 5 Part 4
SPD	PSPS	SCE designates community meetings, marketing, and PSPS Research and Education as Foundational Activities within Controls such as CRC/CCV, CCBB, and Customer Resiliency Equipment Rebates. This designation is problematic. By designating these activities as Foundational, SCE increases the costs of these activities but makes it appear that such foundational activities do not reduce risk. This designation will reduce the RSE of these Controls and potentially send the wrong signal to decision-makers that Controls supported by certain activities, such as community meetings, should not be prioritized. SCE could consider concrete ways to recognize the risk reduction that comes from ensuring vulnerable populations are aware of PSPS events and the consequences to their health that come from a PSPS event rather than designating these activities as Foundational.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.41.	SCE-04 Vol. 5 Part 4
SPD	PSPS	SCE asserts that the RSEs in Alternative Plan #2 would be lower because of increasing costs. However, in Table VIII-27, it appears that, except for C22 Weather Stations, all the RSEs are the same or higher than those found in Table VII-16 of the Proposed Plan. Additionally, there are inconsistencies within the RAMP and the work papers regarding which controls will be included in which plans (see Portfolio Inclusion in the workbook). SCE could take steps to reconcile the way they present their Alternative Plans so that they are logical and consistent.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.41.	SCE-04 Vol. 5 Part 1

Party(s)	RAMP Risk / Area	Party Recommendation	Citation to Party Recommendation	GRC Testimony Location Response
SPD	PSPS	SCE argues that the operating cost savings from using a higher FPI threshold found in Alternative Plan #1 would likely be more than offset by costs and impacts to the customers from the greater wildfire risk. However, SCE's RAMP lacks a comparative analysis to justify this explanation. SCE could utilize a Cost-Benefit Approach to compare the costs and impacts to customers from the increase or decrease of wildfire ignition risk caused by using the different FPI thresholds found in the Proposed Plan and the Alternative Plan #1.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.41.	SCE-04 Vol. 5 Part 1
SPD	RAMP Risk Selection	SCE did not present safety risk scores for the remaining 17 enterprise-level risks and, instead, indicated in the Pre-RAMP presentation that the safety scores for enterprise risks 11 to 19 were to be determined (TBD). However, the safety risks scores for these remaining risks in SCE's enterprise risk register were not included in the 2022 RAMP application or the workpapers. In essence, the top 40% status of the included RAMP risks and full compliance with Step 1B, Row 8 and Step 2A, Row 9 were not conclusively demonstrated based on the submitted documents. SPD recommends that SCE explicitly show how they complied with the RAMP risk selection process spelled out in the S-MAP Settlement Agreement when they file their GRC, even if such a showing may repeat information presented in the Pre-RAMP documents or previous RAMPs. It will also clarify in the GRC process how the top risks were identified and selected to assist the Energy Division and Commissioners in evaluating proposed expenditures.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.15	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD	RSE for Controls	SCE failed to provide RSEs for mitigation activities performed to satisfy regulatory compliance requirements. For the 2022 RAMP, SCE began referring to compliance-related mitigations as "compliance activities." These are the mitigation activities that SCE previously referred to as "compliance controls" in the 2018 RAMP. SCE's failure to provide RSEs for compliance-related mitigation activities and controls in the 2022 RAMP occurred despite Decision (D.)21-11-009 in the Risk-Based Decision-Making Framework Rulemaking proceeding (R.20-07-013) explicitly directing the utilities to provide "RSEs for all mitigations, including controls that are ongoing." At the time when D.21-11-009 was adopted, both the Commission and SPD staff understood Ordering Paragraph 1c to apply to all forms of existing controls, including those controls that SCE referred to as "compliance controls" in SCE's 2018 RAMP. It was never the intent of the Commission to exempt from Ordering Paragraph 1c in D.21-11-009 any compliance-related mitigations or controls (or any such compliance-related mitigation activities) that SCE up to that point in time had been referring to as "compliance controls." To the contrary, compliance controls were explicitly referenced and contemplated in the staff proposal8 and in the December Decision. Renaming "compliance controls" to "compliance activities " does not negate the RSE requirement for compliance-related risk mitigation activities and controls. RSEs for compliance-related mitigations, whether SCE refers to them as "compliance controls" or "compliance activities, are important reference points that SPD staff and other RAMP/GRC stakeholders could use to compare the cost-effectiveness of proposed mitigations and their alternatives. Having RSEs for "compliance controls"/ "compliance activities" would also permit the evaluation of existing mitigation activities not related to regulatory compliance (those that the utilities refer to as controls) to determine whether there is justification for their continuation in the new GRC funding period. Furthermore, suppose legal and regulatory requirements have low RSE values. In that case, the Commission and parties could use this information to propose revisions to these requirements to avoid inefficient expenditures of ratepayer funds. SPD recommends SCE correct this deficiency before filing SCE's TY2025 GRC application.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 16 – 17.	SCE-01 Vol. 2 Testimony
SPD	Seismic	Staff notes it is not clear if there are distinct differences between Tranche 1 and 2 other than different Criticality of Asset indexes; both tranches have critical assets. Therefore, Tranches 1 and 2 do not appear to have different homogenous profiles. Lastly, it is unclear why Tranche 4 is not included in the RAMP analysis but is a part of SCE's Seismic Resiliency Program. Tranche 4 is composed of other critical facilities including but not limited to transmission corridors, lattice towers, and other major facilities.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.5, p. 50.	SCE-04 Vol. 02
SPD	Seismic	SCE has identified two alternatives which both will reduce risk at a slower pace by decreasing the amount of money spent on mitigation activities. Alternative 1 is to reduce the current scope from $44M/yr to $25M/yr and Alternative 2 is to reduce the current scope from $44M/yr to $15M/yr. Staff recommends proposing programmatic alternatives in future RAMP filings such as different mitigation programs.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.51.	SCE-04 Vol. 02
SPD	Transmission and Substation Assets	Safety Policy Division noted that by treating Transmission and Substation Asset Risk as a non-RAMP risk, SCE did not provide MAVF-level risk analyses and RSE information on the risk and the associated mitigations. By placing some of these mitigations outside of the scope of a RAMP risk, SCE has effectively shielded them from Commission oversight in the RAMP process. SPD recommends that analyses of these risk mitigation activities should be incorporated into the appropriate RAMP risk chapters where appropriate.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013 p. 59	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD	Transparency in ML Models	Lack of transparency related to models using machine learning techniques. On the wildfire risk modeling, the machine learning techniques also contributed to this lack of transparency. Despite SCE's efforts to show the inner workings of the machine learning approach, it remains very much an opaque "black box" to SPD staff. This is not a criticism of SCE's initiative to apply machine learning techniques to model wildfire risk. Far from it, SPD supports its continued and broader use. It's simply an acknowledgment that there are challenges that SCE will have to overcome in the GRC and future RAMPs to provide greater transparency within the confines of the machine learning approach.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.20.	SCE-04 Vol. 5 Part 1 and SCE-02 Vol. 01 Part 2
SPD	Underground Equipment Failure	In the risk bowtie, SCE equated subcategories of exposure with tranches, and the resulting tranches are also equated with risk drivers. This effectively obscures the true factors, threats, or mechanisms contributing to the failure of each of these subcategories of exposure. SPD suggests that in the risk bowtie analysis, adding an extra column of "sub-drivers" to characterize the true factors, threats, or mechanisms contributing to equipment failures in that tranche or that subcategory of exposure would make the bowtie analysis more meaningful.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.46.	SCE-02 Vol. 01 Part 2
SPD	Underground Equipment Failure	SCE has about 328 BURD transformer failures per year out of a total of 82,000 BURD transformers. However, M1 is only proposing to replace 50 BURD transformers per year preemptively. Even if the replacement program is targeting the oldest and most failure-prone BURD transformers, the planned replacement rate will likely be insufficient to outpace the expected number of failures due to equipment deterioration. SPD recommends SCE re-examine the pace of the BURD transformer replacement program.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.47.	SCE-02 Vol. 01 Part 2
SPD	Underground Equipment Failure	Input data on RSEs not transparently explained.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.5.	SCE-02 Vol. 01 Part 2
SPD	WF	MGRA has noted that while Fast Curve settings are highly effective at preventing ignitions, they can lead to localized de-energization without advanced warning. This leads to impacts on AFN customers who would benefit from certain PSPS Controls under a PSPS de-energization but would be left unprepared during a Fast Curve de-energization. SPD agrees with MGRA and recommends that SCE should provide details regarding how they address the impact of a Fast Curve deenergization on AFN and MBL customers.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.41.	SCE-04 Vol. 5 Part 1

Party(s)	RAMP Risk / Area	Party Recommendation	Citation to Party Recommendation	GRC Testimony Location Response
SPD	Wildfire	SPD recommends that SCE consider a third alternative to their wildfire plans discussed below. The third alternative would focus on TUG and WCCP proposals for the 67th percentile based on risk reduction. This sub-sample of circuit segments would be less than 40 percent of the proposed spending for both programs but would focus on about 85 percent of the risk reduction. SPD recommends SCE narrow this by selecting circuit segments that have RSEs below the total sample RSE median for each program. Using the RSE median is a generous cutoff due to the wide range and high standard deviation of the RSEs. This would narrow the programs further and focus on the highest-risk segments and the most cost-effective segments based on Risk Spend Efficiencies.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 26 -28.	SCE-04 Vol. 5 Part 1
SPD	Wildfire	SCE should revise its risk modeling to include all risk element factors, such as egress, into the risk reduction and RSE calculations.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p. 22, p.28.	SCE-04 Vol. 05 Part 1
SPD	Wildfire	SCE should revise its risk modeling to improve modeling of catastrophic losses and the impacts of longer-lasting fires.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.22.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD	Wildfire	Risk modeling should be conducted for Routine Vegetation Management even though it is a compliance related risk mitigation activity.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.23, 32.	SCE-04 Vol. 05 Part 1
SPD	Wildfire	SCE should remove the additional 173.4 circuit miles (30 percent) in the most recent proposed TUG, as SCE included these to replace duplicated circuit miles without adequate justification.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.23, p. 36.	SCE-04 Vol. 5 Part 2
SPD	Wildfire	SCE should consider expanding both BLF and RAR due to the high RSEs associated with these technologies.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.23, 37.	SCE-04 Vol. 5 Part 2
SPD	Wildfire	Given the lower RSE, SPD staff question the appropriateness of substantial investment of ratepayer funds for TUG after the large-scale implementation of the CC program has been underway for years. The WCCP was supposed to prioritize and install CC on the highest-risk circuit segments in the program's early years. Hence, there is no widespread need for TUG since the highest-risk circuit segments already have CC installed	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.56.	SCE-04 Vol. 5 Part 1
SPD / MGRA	PSPS	As MGRA points out in their informal comments because SCE does not include PSPS damage events in its ignition risk model, this will bias the likelihood model (which is dependent on historical data), and result in underestimating the ignition risk in areas with frequent PSPS. SPD agrees with MGRA and recommends that SCE integrate PSPS damage and hazard reports into their likelihood calculations.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.40. MGRA Informal Comments to SPD re SCE's RAMP Filing, p. 26.	SCE-04 Vol. 5 Part 1
SPD / MGRA	Wildfire	SCE should revise its risk modeling to include the missing wind dependency in SCE's ignition models.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.22, p. 30. MGRA Informal Comments to SPD re: SCE's RAMP Filing, 10/10/2022, page 25.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD / MGRA	Wildfire	SCE should revise its risk modeling to include estimates of health and safety consequences of wildfire smoke. SPD agrees with MGRA's comments regarding the omission of health and safety consequences of wildfire smoke are missing in SCE's risk model. Therefore, SPD recommends that SCE use the same general method that SDG&E used in its RAMP, which applies a ratio of fatalities to acres burned in the safety attribute of its MAVF function. Regarding the details of this ratio, SPD recommends that SCE follow MGRA's advice regarding proportionality.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.22, pp. 30 – 31. MGRA Informal Comments to SPD re SCE's RAMP Filing, 10/10/22, p. 27 - 28	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD / MGRA	Wildfire	SPD agrees with MGRA that SCE's risk prioritization, based on a combination of factors and internally determined weights, lacked the transparency necessary for parties or Commission staff to analyze SCE's decision-making thoroughly. Therefore, SPD recommends that SCE fully disclose the effective risk score that it is using to determine its prioritization by quantifying all factors being used in the effective risk score and showing how they are combined. This is the level of transparency required by Rows 26 and 29 of the S-MAP Settlement Agreement. SPD further recommends that SCE integrate its risk factors into the MAVF framework by clearly showing their impacts on the likelihood and consequence of risk events.	MGRA Informal Comments to the SPD re: SCE's RAMP Filing, 10/10/2022 Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.58.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD / MGRA	Wildfire	SPD agrees with MGRA that SCE needs to develop an enterprise risk model (ERM) that accurately describes catastrophic wildfire risk. Hence, SPD recommends that SCE demonstrate the extent to which its risk model correctly characterizes extreme catastrophic fires by showing its predicted loss distribution fits a power law distribution and is consistent with the size distribution of historical catastrophic fires. SPD also recommends that if SCE's current risk model does not adequately represent catastrophic losses, then SCE should develop and implement an enterprise risk model (ERM) similar to that of PG&E and SDG&E, using a power law distribution to represent catastrophic losses, prior to the submission of its Test Year 2025 GRC filing	MGRA Informal Comments to SPD re SCE's RAMP Filing, 10/10/22 Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.58.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD / MGRA	Wildfire	SCE should revise its risk modeling to reflect the more accurate risk reduction from covered conductor based on SCE's fault and wire-down data.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.22. MGRA Informal Comments to SPD re SCE's RAMP Filing	SCE-04 Vol. 5 Part 1
SPD / TURN	Wildfire	Additional tranche classifications should focus on using combinations of quintiles of LoRE and CoRE, so that the isolatable circuit segments with the highest 20 percent of LoRE and the highest 20 percent of CoRE would be grouped together. This would support a more logical calculation of RSEs. TURN recommends that SCE's upcoming GRC also present RSEs and risk reduction calculations for its Wildfire mitigations using SPD's quintile approach.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p. 25.. Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report And The Safety Policy Division's November 10, 2022 Evaluation Report, p. 13.	SCE-04 Vol. 5 Part 1
SPD, SBUA	Overly Granular Tranches	Overly granular presentation of risk analysis. Such highly granular risk analyses are understandably needed by SCE internally for its risk simulations, prioritizations, and executions of mitigation activities, but exceed what is necessary for evaluation of program-level risk mitigation proposals in the RAMP. For risk analysis and model simulations, SPD encourages SCE to use as much granularity as SCE deems appropriate, provided the approach complies with the S-MAP Settlement Agreement. However, for presentation in the RAMP, SCE should transparently show how these highly granular risk tranches used in model simulations are rolled up into program-level tranches, program-level mitigation decisions, and program-level executions. Doing so would facilitate oversight by SPD staff and other stakeholders in the RAMP and GRC proceedings.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.20. Opening Comments of Small Business Utility Advocates on SCE's Risk Assessment And Mitigation Phase Application And The Safety Policy Division's Evaluation, p. 7.	SCE-01 Vol. 2 Testimony

Party(s)	RAMP Risk / Area	Party Recommendation	Citation to Party Recommendation	GRC Testimony Location Response
SPD, TURN	VSL	High implied Value of Statistical Life (VSL). SPD recommends that SCE recalibrate the relative weights and ranges in the MAVF to produce an implied VSL that aligns much closer to the US DOT guidance figure. TURN joins in this recommendation, which should be done for the upcoming GRC filing. TURN joins in this recommendation, which should be done for the upcoming GRC filing.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 18 – 19. Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report And The Safety Policy Division's November 10, 2022 Evaluation Report	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
SPD, TURN	Wildfire	SCE should utilize isolatable circuit segments for tranches to align more closely with how projects would be implemented on the ground. SCE should aggregate these circuit-level segments into isolatable, project-level circuit segments and present risk reduction and RSE calculations at this level of tranche granularity. TURN recommends that SCE's upcoming GRC also present RSEs and risk reduction calculations for its Wildfire mitigations using SPD's quintile approach.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, pp. 23 – 24. Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report And The Safety Policy Division's November 10, 2022 Evaluation Report, p. 12.	SCE-04 Vol. 5 Part 1
SPD/TURN	Mitigation Portfolio Selection	Little explanation for the pace or extent of selected mitigations is provided. SPD recommends that SCE provide more thorough explanations for the selected scope and pace of proposed mitigations and how SCE decided on the amount of risk reduction to be achieved in the new GRC funding period. TURN joins in this recommendation, which should be done for the upcoming GRC filing.	Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, p.19. Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report And The Safety Policy Division's November 10, 2022 Evaluation Report, p. 10.	SCE included an overarching discussion on the role of RSEs is SCE's decision making in SCE-01 Vol. 02. SCE also discussed the need and rationale for the selection of program scope in each respective volume of testimony
TURN	Discount Rate	SCE's RSE analysis in its upcoming GRC should use its WACC as the discount rate for both the numerator and denominator of the RSE calculation, in order to bring its analysis into compliance with the D.18-12-014 Settlement and to produce more accurate RSEs.	Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report and The Safety Policy Division's November 10, 2022 Evaluation Report, pp. 2 – 8.	WP SCE-01 Vol. 02 - RAMP Recommendation Responses
TURN	How RSE Analysis Affected Mitigation Portfolio Selection	As a matter of compliance with D.18-12-014, SCE's direct showing in its upcoming GRC must include a clear and transparent explanation of how RSE analysis affected its selection and scope of proposed mitigations. TURN further notes that if, for a particular proposed mitigation, "other factors" enumerated in Row 26 that are not reflected in the RSE analysis influenced SCE's selection and scope of the proposed activity, SCE's direct showing must explain whether and how such other factors influenced SCE's proposal.	Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report and The Safety Policy Division's November 10, 2022 Evaluation Report, p.12.	This item is principally addressed in SCE-01, Vol. 2 but also in select places in OU-specific testimony as appropriate
TURN	Modeling of All Material Risk Consideration	As a matter of compliance with D.18-12-014, SCE's re-calculation of RSEs for its GRC must include egress benefits and all other considerations that materially affect its RSE calculations for any risk.	Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report and The Safety Policy Division's November 10, 2022 Evaluation Report, p.15.	SCE-04 Vol. 05 Part 1
TURN	RSE Presentation	TURN requests that SCE's GRC submission also include a combined four-year RSE for all of its risk reduction activities, both at the program and tranche levels.	Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report and The Safety Policy Division's November 10, 2022 Evaluation Report, p.15.	SCE-01 Vol. 2 Direct Testimony
TURN	Wildfire	As a matter of compliance with D.18-12-014, SCE's re-calculation of RSEs for its GRC must include egress benefits and all other considerations that materially affect its RSE calculations for any risk.	Opening Comments of The Utility Reform Network on Southern California Edison's Ramp Report and The Safety Policy Division's November 10, 2022 Evaluation Report, p.48.	SCE-04 Vol. 05 Part 1

(END OF ATTACHMENT A)