

TABLE 1: Recent Performance on Progress Metrics, Last 5 Years

Project Metric Name	Annual Performance																		Unit(s)		
	2015				2016				2017				2018				2019				
Grid condition findings from Inspection- Electric Transmission	Issues in FTZ / FTZ Circuit Miles in 2015				Issues in FTZ / FTZ Circuit Miles in 2016				Issues in FTZ / FTZ Circuit Miles in 2017				Issues in HFTD / HFTD Circuit Miles in 2018				Issues in HFTD / HFTD Circuit Miles in 2019				Number of Level 1, 2, and 3 findings per mile of circuit in HFTD, and per total miles of circuit for each of the following inspection types: 1. Patrol inspections 2. Detailed inspections 3. Other inspection types
	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	
	Type 1	0.000	0.013	0.000	Type 1	0.000	0.001	0.000	Type 1	0.000	0.002	0.000	Type 1	0.000	0.009	0.000	Type 1	0.000	0.004	0.000	
	Type 2	0.000	0.298	0.009	Type 2	0.000	0.044	0.002	Type 2	0.000	0.043	0.010	Type 2	0.002	0.413	0.029	Type 2	0.000	0.228	0.026	
	Type 3	0.000	0.010	0.000	Type 3	0.000	0.010	0.000	Type 3	0.000	0.001	0.017	Type 3	0.000	0.006	0.000	Type 3	0.000	0.009	0.000	
	Issues/ Total Circuit Miles in 2015				Issues/ Total Circuit Miles in 2016				Issues/ Total Circuit Miles in 2017				Issues/ Total Circuit Miles in 2018				Issues/ Total Circuit Miles in 2019				
	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	
	Type 1	0.001	0.035	0.000	Type 1	0.000	0.021	0.000	Type 1	0.001	0.006	0.000	Type 1	0.000	0.005	0.000	Type 1	0.000	0.004	0.000	
	Type 2	0.002	0.533	0.031	Type 2	0.001	0.156	0.032	Type 2	0.001	0.226	0.033	Type 2	0.004	0.445	0.032	Type 2	0.001	0.338	0.026	
	Type 3	0.003	0.034	0.000	Type 3	0.001	0.023	0.000	Type 3	0.001	0.009	0.009	Type 3	0.000	0.005	0.000	Type 3	0.004	0.013	0.000	
Grid condition findings from Inspection- Electric Distribution	Issues in FTZ / FTZ Circuit Miles in 2015				Issues in FTZ / FTZ Circuit Miles in 2016				Issues in FTZ / FTZ Circuit Miles in 2017				Issues in HFTD / HFTD Circuit Miles in 2018				Issues in HFTD / HFTD Circuit Miles in 2019				Number of Level 1, 2, and 3 findings per mile of circuit in HFTD, and per total miles of circuit for each of the following inspection types: 1. Patrol inspections 2. Detailed inspections 3. Other inspection types
	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	
	Patrol	0.008	0.049	NA	Patrol	0.0083	0.0596	NA	Patrol	0.0017	0.0602	NA	Patrol	0.008	0.043	NA	Patrol	0.002	0.1216	NA	
	Detail	0.0014	0.1929	NA	Detail	0.0049	0.1408	NA	Detail	0.0011	0.0659	NA	Detail	0.0009	0.0614	NA	Detail	0.0011	0.0648	NA	
	QC	0.0006	0.2408	NA	QC	0.0003	0.1958	NA	QC	0.0009	0.1032	NA	QC	0.0003	0.1775	NA	QC	0.0003	0.0665	NA	
	Issues/ Total Circuit Miles in 2015				Issues/ Total Circuit Miles in 2016				Issues/ Total Circuit Miles in 2017				Issues/ Total Circuit Miles in 2018				Issues/ Total Circuit Miles in 2019				
	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	Inspection Type	Level 1	Level 2	Level 3	
	Patrol	0.0070	0.1059	NA	Patrol	0.0055	0.1328	NA	Patrol	0.0058	0.1311	NA	Patrol	0.0041	0.1269	NA	Patrol	0.0031	0.1263	NA	
	Detail	0.0097	0.3856	NA	Detail	0.0069	0.3575	NA	Detail	0.0044	0.3005	NA	Detail	0.0074	0.2984	NA	Detail	0.0039	0.3170	NA	
	QC	0.0001	0.0505	NA	QC	0.0001	0.0411	NA	QC	0.0002	0.0217	NA	QC	0.0001	0.0372	NA	QC	0.0001	0.0440	NA	

TABLE 1: Recent Performance on Progress Metrics, Last 5 Years						
Project Metric Name	Annual Performance					Unit(s)
	2015	2016	2017	2018	2019	
Vegetation clearance findings from inspection	0.8%	0.7%	1.1%	0.1%	0.8%	Percentage of right-of-way with noncompliant clearance based on applicable rules and regulations at the time of inspection, as a percentage of all right-of-way inspected. *NOTE: "Noncompliant" - a tree observed during inspection to have less than the minimum clearance required ("memo" tree). *All right-of-way inspected" – total number of inventory trees % of noncompliance = number of memo trees observed divided by the total number of inventory trees.
Extent of grid modularization	1. FTZ: 0.006 2. Non-FTZ: 0.059	1. FTZ: 0.071 2. Non-FTZ: 0.092	1. FTZ: 0.072 2. Non-FTZ: 0.094	1. HFTD: 0.072 2. Non-HFTD: 0.099	1. HFTD: 0.073 2. Non-HFTD: 0.100	Number of sectionalizing devices per circuit mile plus number of automated grid control equipment in: 1. HFTD 2. Non-HFTD *NOTE: Per Total number of sectionalizing positions (OH and UG, UG can have between 2-5 per device) divided by total miles (OH and UG)
Data collection and reporting	NA	NA	NA	NA	95%	Missing Table 31 and 50% of table 9. The submittal was calculated as providing data for 29.5/31 tables, or 95% complete.

TABLE 2: Recent Performance on Outcome Metrics, Annual and Normalized for Weather, Last 5 Years									
Metric Type	#	Outcome metric name	Annual performance					Unit(s)	Comments
			2015	2016	2017	2018	2019		
1. Near misses	1.a.	# of all events that could result in ignition, by type according to utility-provided list (Total)	1,509	1,841	1,751	1,594	1,558	Number per year	(Such as unplanned outages, faults, conventional blown fuses, etc.)
	1.b.	# of all events that could result in ignition, by type according to utility-provided list (Normalized)	0.0003	0.0008	0.0014	0.0020	0.0007	Number per RFW circuit mile day per year	
	1.c.	Number of wires down (total)	59	138	129	96	108	Number of wires down per year	System wide
	1.d.	Number of wires down(normalized)	0	0.00004	0.00004	0.00003	0.00005	Number per RFW circuit mile day per year	
2. Utility inspection findings	2.a.	Number of Level 1 findings that could increase the probability of ignition discovered per circuit mile inspected	0.010 (ED)	0.013(ED)	0.004(ED)	0.009 (ED)	0.003(ED)	Average number of Level 1 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	Substation findings do not increase the probability of ignitions per circuit mile; Substation inspections are conducted primarily for reliability, they have incidental wildfire mitigation benefits.
	2.b.	Number of Level 2 findings	0.483 (ED)	0.396(ED)	0.229(ED)	0.282(ED)	0.253(ED)	Average number of Level 2 findings	
	2.c.	Number of Level 3 findings	0	0	0	0	0	Average number of Level 3 findings	
3. Customer hours of PSPS and other	3.a.	Customer hours of planned outages including PSPS (total)	1010005	862687	1884251	2185302	2395433	Total customer hours of planned outages per year	
	3.b.	Customer hours of planned outages including PSPS (normalized)	0.1703	0.0006	7.14	17.39	30.39	Total customer hours of planned outages per RFW circuit mile day per year	
	3.c.	Customer hours of unplanned outages, not including PSPS (total)	1504042	2058237	2090995	1887418	1617201	Total customer hours of unplanned outages per year	
	3.d.	Customer hours of unplanned outages, not including PSPS (normalized)	80.76	21.79	19.61	30.80	38.65	Total customer hours of unplanned outages per RFW circuit mile day per year	
	3.e.	Increase in System Average Interruption Duration Index (SAIDI)	-12.55	22.75	31.48	3.53	-2.94	Change in minutes compared to the previous year	
4. Utility ignited wildfire fatalities	4.a.	Fatalities due to utility-ignited wildfire (total)	0	0	0	0	0	Number of fatalities per year	SDG&E is unaware of any utility-ignited wildfire fatalities resulting from utility wildfire mitigation initiatives in the period 2015-2019.
	4.b.	Fatalities due to utility-ignited wildfire (normalized)	0	0	0	0	0	Number of fatalities per RFW circuit mile day per year	
5. Accidental deaths resulting from utility wildfire mitigation initiatives	5.a.	Deaths due to utility wildfire mitigation activities (total)	0	0	0	0	0	Number of fatalities per year	SDG&E is unaware of any accidental deaths resulting from utility wildfire mitigation initiatives in the period 2015-2019.
6. OSHA-reportable injuries from utility wildfire mitigation initiatives	6.a.	OSHA-reportable injuries due to utility wildfire mitigation activities (total)	0	1	0	0	0	Number of OSHA-reportable injuries per year	One contractor OSHA-reportable injury in 2016 related to the FIRM (Fire Risk Mitigation) project. It is the responsibility of the contractor to report the incident to OSHA; SDG&E has no documentation to confirm such a report.
	6.b.	OSHA-reportable injuries due to utility wildfire mitigation activities (normalized)	0	0.001	0	0	0	Number of OSHA-reportable injuries per year per 1000 line miles of grid	
7. Value of assets destroyed by utility-ignited wildfire, listed by asset type	7.a.	Value of assets destroyed by utility-ignited wildfire (total)	0	0	0	\$2,900.00	0	Dollars of damage or destruction per year	Value is a round number including material only for one wood 45' pole, and 25kVA transformer. Rounded up, to compensate for additional conductor and connectors.
	7.b.	Value of assets destroyed by utility-ignited wildfire (normalized)	0	0	0	0.0437292	0		
8. Structures damaged or destroyed by utility-ignited wildfire	8.a.	Number of structures destroyed by utility-ignited wildfire (total)	0	0	0	1	0	Number of structures destroyed per year	
	8.b.	Number of structures destroyed by utility-ignited wildfire (normalized)	0	0	0	0.0000151	0	Number of structures destroyed per RFW circuit mile day per year	

TABLE 2: Recent Performance on Outcome Metrics, Annual and Normalized for Weather, Last 5 Years

Metric Type	#	Outcome metric name	Annual performance					Unit(s)	Comments
			2015	2016	2017	2018	2019		
9. Acreage burned by utility-ignited wildfire	9.a.	Acreage burned by utility-ignited wildfire (total)	213	7	16	28	8	Acres burned per year	If a fire meets the CPUC definitiof for recorable fire but does not grow beyond .25 acres it was assumed to be .1 acres for consistency
	9.b.	Acreage burned by utility-ignited wildfire (normalized)	0.24580232	0.000225941	0.000180167	0.000422215	0.000236904	Acres burned per RFW circuit mile day per year	
10. Number of utility wildfire ignitions	10.a.	Number of ignitions (total) according to existing ignition data reporting requirement	32	30	23	26	21	Number per year	
	10.b.	Number of ignitions (normalized)	0.036928048	0.000968317	0.00025899	0.000392056	0.000621872	Number per RFW circuit mile day per year	
	10.c.	Number of ignitions in HFTD (subtotal)	19	18	15	13	11	Number in HFTD per year	
	10.c.ii.	Number of ignitions in HFTD Tier 2	13	11	7	7	8	Number in HFTD Tier 2 per year	
	10.c.iii.	Number of ignitions in HFTD Tier 3	6	7	8	6	3	Number in HFTD Tier 3 per year	
	10.d.	Number of ignitions in HFTD (subtotal, normalized)	0.036928048	0.034620045	0.026542035	0.030004039	0.024234032	Number in HFTD per RFW circuit mile day per year	
	10.d.ii.	Number of ignitions in HFTD Tier 2 (normalized)	0.01500202	0.012694017	0.008078011	0.008078011	0.009232012	Number in HFTD Tier 2 per RFW circuit mile day per year	
	10.d.iii.	Number of ignitions in HFTD Tier 3 (normalized)	0.006924009	4.09728E-07	9.09618E-08	1.21809E-07	2.73387E-07	Number in HFTD Tier 3 per RFW circuit mile day per year	
	10.e.	Number of ignitions in non-HFTD (subtotal)	13	12	8	13	10	Number in non-HFTD per year	
	10.f.	Number of ignitions in non-HFTD (normalized)	0.01500202	0.000387327	9.00834E-05	0.000196028	0.000296129	Number in non-HFTD per RFW circuit mile day per year	
11. Critical infrastructure impacted	11.a.	Critical infrastructure impacted by PSPS	NA	NA	NA	NA	76,236	Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per year	
	11.b.	Critical infrastructure impacted by PSPS (normalized)	NA	NA	NA	NA	1.46	Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per RFW circuit mile day per year	

TABLE 3: List and Description of Additional Metrics, Last 5 Years

Metric	Performance					Units	Third-party validation	Underlying assumptions
	2015	2016	2017	2018	2019			
Number of elevated or extreme FPI and RFW days	FPI: 108 RFW: 4	FPI: 138 RFW: 20	FPI: 169 RFW: 21	FPI: 182 RFW: 12	FPI: 137 RFW: 12	Days	NA	Day ends at 2359L (11:59pm) and begins at 0000L (midnight)
Vegetation Caused Ignitions in HFTD	FPI: 3 RFW: 0	FPI: 1 RFW: 0	FPI: 2 RFW: 1	FPI: 0 RFW: 0	FPI: 1 RFW: 0	Days	NA	
Vegetation Caused Outages within HFTD	FPI: 3 RFW: 0	FPI: 7 RFW: 0	FPI: 8 RFW: 2	FPI: 4 RFW: 3	FPI: 9 RFW: 0	Days	NA	
Equipment Caused Ignitions within HFTD	FPI: 2 RFW: 0	FPI: 5 RFW: 0	FPI: 4 RFW: 2	FPI: 2 RFW: 1	FPI: 2 RFW: 0	Days	NA	
Overhead Faults on Circuits within HFTD	FPI: 121 RFW: 0	FPI: 110 RFW: 15	FPI: 145 RFW: 29	FPI: 134 RFW: 28	FPI: 125 RFW: 17	Days	NA	
Energized Wire Down Events within HFTD	FPI: 3 RFW: 0	FPI: 7 RFW: 0	FPI: 9 RFW: 0	FPI: 7 RFW: 1	FPI: 8 RFW: 1	Days	NA	
Number of Non-CALFIRE Rated Fuse Operations within HFTD	FPI: 96 RFW: 1	FPI: 108 RFW: 24	FPI: 115 RFW: 16	FPI: 131 RFW: 14	FPI: 83 RFW: 9	Days	NA	

TABLE 4: List and Description of Program Targets, Last 5 Years				
Program target	2019 performance	Units	Underlying assumptions	Third-party validation
Changed operating procedures on days with elevated or higher FPI	137	FPI elevated or higher	Target is 100% of elevated or higher FPI days. Number of elevated or higher FPI days will vary depending on weather conditions.	No
Disable reclosing and enable sensitive protections on reclosers within HFTD on days with elevated or higher FPI	137	FPI elevated or higher		No
Electric crews accompanied by fire suppression crews on days with elevated or higher FPI. On extreme days, certain activities are stopped altogether within the HFTD.	137	FPI elevated or higher		No
Wildfire infrastructure teams join SDG&E electric crews to provide fire suppression capabilities during high risk work on days with elevated or higher FPI. Support re-energization during PSPS events.	137	FPI elevated or higher		No
Three aerial fire suppression resources available year-round	279	water drops	The metric for this program is the number of water drops per year, which shows frequency of use for aerial fire suppression resources. Number of gallons dropped is also recorded. A target metric is not provided since the number of fires that aerial fire suppression resources will combat per year is unknown.	No
Three aerial fire suppression resources available year-round	220,453	gallons of water		No
Perform fuel management on BLM, priority 13, and tier 3 including CNF poles	511	poles treated	SDG&E's fuels management program removes, thins, or treats vegetation along SDG&E rights of way and adjacent fire-prone corridors.	No
15,000 QA/QC Distribution System Inspections	15,176	poles inspected	SDG&E's QA/QC distribution system inspections are performed within the HFTD Tier 3 prior to fire season and exceed the requirements of GO 165.	No
47,850 Detailed Distribution System Inspections	47,850	poles inspected	SDG&E's detailed distribution system inspections are conducted in compliance with GO 165.	No
300 Substation System Inspections	301	substations inspected	SDG&E's substation system inspections are conducted in compliance with GO 174.	No
6,730 Transmission System Inspections	6,730	OH structures inspected	SDG&E's transmission system inspections are conducted in compliance with PRC § 4292 and 4293 and GO 95 and GO 128 rules.	No
10 miles of OH transmission hardened	10	miles hardened	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of miles hardened is within the 20% threshold.	No
85 miles of OH distribution hardened	83	miles hardened	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of miles hardened is within the 20% threshold.	No
1.5 miles underground line segments	2.6	miles undergrounded	Strategic undergrounding began as a small scale program to target areas of the HFTD with the most significant risk. In 2019, SDG&E exceeded the goal of 1.5 miles undergrounded significantly reducing ignition risks in those areas.	No

TABLE 4: List and Description of Program Targets, Last 5 Years				
Program target	2019 performance	Units	Underlying assumptions	Third-party validation
68 miles hardened within Cleveland National Forest	61	miles hardened	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of miles hardened is within the 20% threshold.	No
85 miles of high-risk conductor replaced with high tensile strength conductor	82	miles replaced	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of miles hardened is within the 20% threshold.	No
700 poles hardened	695	poles hardened	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of poles hardened is within the 20% threshold.	No
2250 expulsion fuses replaced	2490	fuses replaced	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of devices replaced is within the 20% threshold.	No
500 hotline clamps replaced	660	hotline clamps replaced	Hotline clamps are a recognized high-risk connector that can lead to a wire down event. The overall goal of this program is to replace all 8,500 hotline clamps within the SDG&E's HFTD by the year 2024.	No
5.7 miles of wire safety enhancements	5.7	miles enhanced	The WISE program replaced small conductor with high failure rates within the wildland urban interface.	No
8 circuits enabled with falling conductor protection	8	circuits enabled	SDG&E expanded its deployment of advanced protection to eight distribution circuits in the backcountry and tested and validated the communication functionality of its proposed Distribution Communications Reliability Improvements.	No
7 switches installed	7	switches installed	SDG&E installed seven additional switches to further increase sectionalizing capability within the HFTD.	No
Replace all poles found through the GO195 visual and intrusive inspections within the HFTD	725	poles replaced	SDG&E's pole replacement and reinforcement is conducted in compliance with GO 165. For poles identified for replacement in Tier 3 of the HFTD, SDG&E intends to accelerate the replacement faster than the six-month time frame require by the commission's general orders.	No

TABLE 4: List and Description of Program Targets, Last 5 Years				
Program target	2019 performance	Units	Underlying assumptions	Third-party validation
Fit all 9 Community Resource Centers with a transfer switch to facilitate backup generation	9	CRC transfer switches installed	This metric tracked the CRC's ability to connect to backup power generators during a PSPS event.	No
Offer backup generators to all identified medical baseline customers and train them on its use (79 identified)	79	medical baseline customers offered backup generators	The goal of the program was to offer generators and training on generator use to MBL customers. 14 MBL customers while offered, chose not to participate.	No
Maintain inventory of trees within SDG&E service territory	460,000	trees in inventory	Tree inventory contains tree data for the entire service territory.	No
Enhanced 25-foot post prune clearance or complete removal of 81,000 trees along 28 circuits	28	Circuits with enhanced 25-foot clearance complete	SDG&E performs enhanced 25-foot clearance post-prune between trees and electric facilities within the HFTD.	No
Complete Quality Assurance of HFTD audits	80%	percent complete	SDG&E conducts QA/QC audits on a random sample population of all work completed by its contractors to assess work quality and contractual adherence.	No
Hazard tree removal	9884	trees removed	SDG&E's tree removal program targets problematic species such as eucalyptus and palms. SDG&E offers free tree replacements if an existing tree cannot be maintained safely near power lines.	No
Hazard tree replacement	260	trees replaced		No
Mechanical brushing and chemical applications	100%	percent complete	The current inventory of poles within the state responsibility area that require inspection and brush clearing is approximately 31,000 distribution poles with non-exempt subject hardware. For poles that require brushing as determined by the inspector, SDG&E performs three activities annually including mechanical brushing, chemical application, and a re-clearing of pole brushing.	No
Re-clear cycle	100%	percent complete		No
Provide electric equipment training to CalFire personnel through joint inspections	0	joint inspections	SDG&E was unable to provide training this year due to unavailability of Cal Fire personnel. SDG&E intends to resume this activity in 2020.	No
Expand SDG&E's weather network	191	total weather stations	SDG&E's weather network is located strategically throughout its service territory. The weather information is used to calibrate models such as the FPI and the SDG&E Outage Prediction Model which gives SDG&E the ability to anticipate when critical fire weather conditions or strong storms are approaching the area, allowing proactive preparedness measures to be taken.	No

TABLE 4: List and Description of Program Targets, Last 5 Years				
Program target	2019 performance	Units	Underlying assumptions	Third-party validation
Publish fire simulations	29	fire simulations published	WRRM-Ops is capable of simulating the growth and potential impact of a wildfire anywhere in SDG&E's service territory should an ignition begin.	No
Install 500 wireless fault indicators	594	wireless fault indicators installed	SDG&E program targets are set with +/-20% range to allow for unforeseen impacts from external forces. The program target here is the midpoint of that range, and the number of devices installed is within the 20% threshold.	No
Add 13 weather stations	13	weather stations	SDG&E continues to add new weather stations to strategic locations to provide more granular weather data.	No
Install software enhancements on weather stations to allow 30 second reads	105	weather stations with software installed	Software upgrades to existing weather stations to allow for more frequent weather data for increased situational awareness.	No
Utilize PSPS as a last resort mitigation during the most extreme weather events of the year	3	events including activations of PSPS protocols	SDG&E utilizes PSPS as a last resort mitigation during the most extreme weather events of the year. During the wind events of October 2019, SDG&E utilized PSPS on three occasions.	No
Implement notification in five languages for potential and impending PSPS events utilizing multiple channels of communication	8	languages implemented for PSPS notifications	SDG&E communicates with customers in advance of an event; upon starting safety inspections of affected power lines; and upon re-energization, as practicable. SDG&E communicates these notifications to customers in eight languages (English, Spanish, Mandarin, Cantonese, Vietnamese, Korean, Tagalog and Russian.)	No

TABLE 5: Accidental Deaths Due to Utility Wildfire Mitigation Initiatives, Last 5 Years

Activity	Victim															Total
	Full-time employee					Contractor					Member of public					
Year	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	
Inspection	0	0	0	0	0	0	0	0			0	0	0	0	0	
Vegetation management	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
Utility fuel management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grid hardening	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	

TABLE 6: OSHA-Reportable Injuries Due to Utility Wildfire Mitigation Initiatives, Last 5 Years																
Activity	Victim															Total
	Full-time employee					Contractor					Member of public					
Year	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	
Inspection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vegetation management	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Utility fuel management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grid hardening	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1

TABLE 7: Methodology for Potential Impact of Ignitions

List of all data inputs used in impact simulation	Sources of data inputs	Data selection and treatment methodologies	Assumptions, including SME input	Equation(s), functions, or other algorithms used to obtain output	Output type(s), e.g., wind speed model	Comments
Wind Speed	Wx Modeling	NAM, WRF, 2km grid	Best available Wx data	WRF	hourly for 84 hours - 2km grid in MPH	Wx = Weather NAM = North American Model WRF = Weather Research & Forecasting Model
Wind Direction	Wx Modeling	NAM, WRF, 2km grid	Best available Wx data	WRF	hourly for 84 hours - 2km grid in degrees	
Temperature	Wx Modeling	NAM, WRF, 2km grid	Best available Wx data	WRF	hourly for 84 hours - 2km grid in F	
Relative Humidity	Wx Modeling	NAM, WRF, 2km grid	Best available Wx data	WRF	hourly for 84 hours - 2km grid in %	
Moisture 1hr (%)	FM Modeling	NAM, WRF, Nelson, 2km grid	Nelson is leading practice	Nelson Fuel Model	hourly for 84 hours - 2km grid in %	FM = Fuel Moisture
Moisture 10hr (%)	FM Modeling	NAM, WRF, Nelson, 2km grid	Nelson is leading practice	Nelson Fuel Model	hourly for 84 hours - 2km grid in %	
Moisture 100hr (%)	FM Modeling	NAM, WRF, Nelson, 2km grid	Nelson is leading practice	Nelson Fuel Model	hourly for 84 hours - 2km grid in %	
Live Fuel Moisture (%)	FM Modeling	NAM, WRF, AI, 2km grid	Leading state-of-science	Custom AI	hourly for 84 hours - 2km grid in %	
Greenness	FM Modeling	NLDAS, 2km grid	Leading state-of-science	Custom Regression	hourly for 84 hours - 2km grid in %	
Energy Release Component	FM Modeling	NAM, WRF, Nelson, 2km grid	NFDRS16 is leading practice	NFDRS	hourly for 84 hours - 2km grid in btu/sqft	FB = Fire Behavior
Flame Length	FB Modeling	Wildfire Analyst	Leading state-of-science	Rothermel	hourly for 84 hours - 2km grid in ft	
Surface Fuel Height	Remote Sensing	N/A	Leading state-of-science	Satellite Image Analysis	static 25ft grid	
Slope	Remote Sensing	N/A	Leading state-of-science	Satellite Image Analysis	static 25ft grid	
Rate of Spread	FB Modeling	Wildfire Analyst	Leading state-of-science	Rothermel	hourly for 84 hours - 2km grid in (ch/h)	
Fuel Type	Remote Sensing	Wildfire Analyst	Leading state-of-science	Satellite Image Analysis	static 25ft grid	
Arrival Time	FB Modeling	Wildfire Analyst	Leading state-of-science	Rothermel	hourly for 84 hours - 2km grid in (h)	
Flame Intensity	FB Modeling	Wildfire Analyst	Leading state-of-science	Rothermel	hourly for 84 hours - 2km grid in (btu/ft/s)	
Structures	Land Use Model	Most recent	Additional structures added through analysis	N/A	# of structures	
Population	Census Data	Most Recent	N/A	N/A	# of population	
Utility Assets	GIS	N/A	Updated regularly	N/A	# and type	

TABLE 8: Map File Requirements for Recent and Modelled Conditions of Utility Service Territory, Last 5 Years			
Layer name	Measurements	Units	Attachment Location
Recent weather patterns	Average annual number of Red Flag Warning days per square mile across service territory	Area, days, square mile resolution	6.1
	Average 95 th and 99 th percentile wind speed and prevailing direction (actual)	Area, miles per hour, at a square mile resolution or better, noting where measurements are actual or interpolated	
Recent drivers of ignition probability	Date of recent ignitions categorized by ignition probability driver	Point, GPS coordinate, days, square mile resolution	6.2
Recent use of PSPS	Duration of PSPS events and area of the grid affected in customer hours per year	Area, customer hours, square mile resolution	6.3

TABLE 9: Map File Requirements for Baseline Condition of Utility Service Territory Projected for 2020			
Layer name	Measurements / variables	Units	Appendix location
Current baseline state of service territory and utility equipment	Non-HFTD vs HFTD (Zone 1, Tier 2, Tier 3) regions of utility service territory	Area, square mile resolution per type	6.4
	Urban vs. rural vs. highly rural regions of utility service territory	Area, square mile resolution per type	
	WUI regions of utility service territory	Area, square mile resolution	
	Number and location of critical facilities	Point, GPS coordinate	
	Number and location of customers	Area, number of people, square mile resolution	
	Number and location of customers belonging to access and functional needs populations	Area, number of people, square mile resolution	
	Overhead transmission lines	Line, quarter mile resolution	
	Overhead distribution lines	Line, quarter mile resolution	
	Location of substations	Point, GPS coordinate	
	Location of weather stations	Point, GPS coordinate	
	All utility assets by asset type, model, age, specifications, and condition	Point, GPS coordinate	
Location of planned utility equipment additions or removal	Non-HFTD vs HFTD (Zone 1, Tier 2, Tier 3) regions of utility service territory	Line, quarter mile resolution	6.5
	Urban vs. rural vs. highly rural regions of utility service territory	Line, quarter mile resolution	
	WUI regions of utility service territory	Line, quarter mile resolution	
	Circuit miles of overhead transmission lines	Line, quarter mile resolution	
	Circuit miles of overhead distribution lines	Line, quarter mile resolution	
	Location of substations	Point, GPS coordinate	
Planned 2020 WMP initiative activity per year	Location of 2020 WMP initiative activity for each activity as planned to be completed by the end of each year of the plan term	Line, quarter mile resolution	7.6

TABLE 10: Weather Patterns, Last 5 Years							
Weather measurement	2015	2016	2017	2018	2019	5yr Historical Average	Unit(s)
Red Flag Warning days	6816.99	25733.11	57729.96	45604.06	26532.72	32483.37	RFW circuit mile days per year
Days rated at the top 30% of proprietary fire potential index or similar fire risk index measure	0	18271	56522	38960	27531	28256.8	Circuit mile days where proprietary measure rated above top 30% threshold ¹ per year
95th percentile wind conditions	27449.61	30047.93	32220.56	30511.59	31338.92	30313.72	Circuit mile days with wind gusts over 95th percentile historical (meaning the prior 10 years, 2005-2014) conditions per year
99th percentile wind conditions	7788.81	4454.58	10260.31	9995.22	9283.79	8356.54	Circuit mile days with wind gusts over 99th percentile historical (meaning the prior 10 years, 2005-2014) conditions per year
¹ Threshold here defined as top 30% of FPI or equivalent scale (e.g., "Extreme" on SCE's FPI; "extreme", 15 or greater, on SDG&E's FPI; and 4 or above on PG&E's FPI), .							
*Notes: - RFW days were calculated using the number of miles of transmission and distribution lines in the HFTD, multiplied by number of days per zone a RFW was in effect. - FPI days were calculated using the number of days per SDG&E district with an Extreme FPI, multiplied by the number of HFTD transmission and distribution miles within that district - Percentile wind conditions were calculated using the measured 95th and 99th percentile winds at SDG&E weather stations.							

TABLE 11a Distribution: Key Recent Drivers of Ignition Probability, Last 5 Years



Incident type by ignition probability driver		Near misses tracked (Y/N)?	Number of Incidents per year						Avg % probability of ignition per incident						Ignition per year caused by driver					
			2015	2016	2017	2018	2019	Average	2015	2016	2017	2018	2019	Average	2015	2016	2017	2018	2019	Average
Contact from object	All types of object contact	Yes	445	498	514	509	538	500.8	4.04%	2.81%	2.92%	2.55%	0.74%	2.56%	18	14	15	13	4	12.8
	Animal contact	Yes	73	79	83	81	98	82.8	0.00%	2.53%	1.20%	1.23%	1.02%	1.21%	0	2	1	1	1	1
	Balloon contact	Yes	70	85	120	112	91	95.6	2.86%	3.53%	4.17%	7.14%	0.00%	3.77%	2	3	5	8	0	3.6
	Veg. contact	Yes	32	52	39	27	50	40	21.88%	7.69%	7.69%	11.11%	0.00%	8.50%	7	4	3	3	0	3.4
	Vehicle contact	Yes	203	198	212	215	222	210	2.96%	2.02%	1.89%	0.00%	1.35%	1.62%	6	4	4	0	3	3.4
	Other	Yes	67	84	60	74	77	72.4	4.48%	1.19%	3.33%	1.35%	0.00%	1.93%	3	1	2	1	0	1.4
All types of equipment / facility failure	All types	Yes	1007	1225	1101	936	1003	1054	0.70%	0.98%	0.45%	0.64%	1.00%	0.76%	7	12	5	6	10	8
	Capacitor bank failure	Yes	14	7	5	16	10	10.4	0.00%	14.29%	0.00%	0.00%	0.00%	1.92%	0	1	0	0	0	0.2
	Conductor failure - all	Yes	29	52	35	42	46	40.8	10.34%	5.77%	2.86%	0.00%	4.35%	4.41%	3	3	1	0	2	1.8
	Conductor failure - wires down	Yes	30	86	94	54	62	65.2	10.00%	3.49%	1.06%	0.00%	3.23%	2.76%	3	3	1	0	2	1.8
	Fuse failure - all	Yes	24	36	17	6	8	18.2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Fuse failure - conventional blown fuse	Yes	528	661	596	515	587	577.4	0.00%	0.00%	0.17%	0.00%	0.17%	0.07%	0	0	1	0	1	0.4
All types of equipment / facility failure	Lightning arrestor failure	Yes	21	23	27	17	26	22.8	0.00%	8.70%	3.70%	0.00%	0.00%	2.63%	0	2	1	0	0	0.6
	Splice/Clamp/Connector	Yes	35	40	24	35	31	33	5.71%	7.50%	4.17%	0.00%	3.23%	4.24%	2	3	1	0	1	1.4
	Switch failure	Yes	14	21	19	22	15	18.2	7.14%	0.00%	0.00%	4.55%	6.67%	3.30%	1	0	0	1	1	0.6
	Transformer failure	Yes	293	282	257	219	208	251.8	0.34%	0.35%	0.00%	0.46%	0.00%	0.24%	1	1	0	1	0	0.6
Wire-to-wire contact / contamination		Yes	18	16	26	9	9	15.6	0.00%	0.00%	0.00%	11.11%	22.22%	3.85%	0	0	0	1	2	0.6
Vandalism/Theft		Yes	1	1	1	1	1	1	0.00%	100.00%	100.00%	0.00%	0.00%	40.00%	0	1	1	0	0	0.4
Other		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	1	0	0	1	0.4
Legend  modified data  new data																				

TABLE 11b Transmission: Key Recent Drivers of Ignition Probability, Last 5 Years

Incident type by ignition probability driver		Near misses tracked (Y/N)?	Number of Incidents per year						Avg % probability of ignition per incident						Ignition per year caused by driver					
			2015	2016	2017	2018	2019	Average	2015	2016	2017	2018	2019	Average	2015	2016	2017	2018	2019	Average
Contact from object	All types of object contact	Yes	35	34	34	32	18	30.6	11.43%	2.94%	2.94%	15.63%	5.56%	7.84%	4	1	1	5	1	2.4
	Animal contact	Yes	15	5	7	1	6	6.8	20.00%	0.00%	0.00%	100.00%	0.00%	11.76%	3	0	0	1	0	0.8
	Balloon contact	Yes	17	24	24	26	10	20.2	5.88%	0.00%	4.17%	0.00%	10.00%	2.97%	1	0	1	0	1	0.6
	Veg. contact	Yes	1	1	0	0	0	0.4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Vehicle contact	Yes	1	3	1	4	1	2	0.00%	0.00%	0.00%	75.00%	0.00%	30.00%	0	0	0	3	0	0.6
	Other	Yes	1	1	2	1	1	1.2	0.00%	100.00%	0.00%	100.00%	0.00%	33.33%	0	1	0	1	0	0.4
All types of equipment / facility failure	All types	Yes	60	27	22	21	15	29	1.67%	0.00%	0.00%	0.00%	0.00%	0.69%	1	0	0	0	0	0.2
	Capacitor bank failure	Yes	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Conductor failure - all	Yes	1	3	3	2	1	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Conductor failure - wires down	Yes	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Fuse failure - all	Yes	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
All types of equipment / facility failure	Fuse failure - conventional blown fuse	Yes	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Lightning arrestor failure	Yes	1	0	0	2	0	0.6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Splice/Clamp/Connector	Yes	1	1	0	1	0	0.6	100.00%	0.00%	0.00%	0.00%	0.00%	33.33%	1	0	0	0	0	0.2
	Switch failure	Yes	4	1	1	0	1	1.4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Transformer failure	Yes	0	0	0	0	1	0.2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Wire-to-wire contact / contamination	Yes	41	20	15	12	12	20	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Vandalism/Theft	Yes	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0	0	0	0
	Other	N/A	12	2	3	4	0	4.2	0.00%	50.00%	0.00%	0.00%	0.00%	9.52%	0	1	0	0	1	0.4

TABLE 12: Recent Use of PSPS, Last 5 Years							
PSPS characteristic	2015	#	#	#	#	Unit(s)	Calculations
Frequency of PSPS events (total)	0	0	5	5	4	Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability, per year	Count of unique PSPS outages (switch plans) per year
Frequency of PSPS events (normalized)	0	0	0.0001	0.0001	0.0001	Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof in order to reduce ignition probability, per RFW circuit mile day per year	1 RFW / # RFW days per year / total OH circuit miles
Scope of PSPS events (total)	0	0	230	295	177	Circuit-events, measured in number of events multiplied by number of circuits de-energized per year	(Number of PSPS events per year) X (sum of # unique circuits per PSPS event)
Scope of PSPS events (normalized)	0	0	0.0020	0.0048	0.0042	Circuit-events, measured in number of events multiplied by number of circuits targeted for de-energization per RFW circuit mile day per year	3 RFW / # RFW days per year / total OH circuit miles
Duration of PSPS events (total)	0	0	744,542	1,061,637	1,325,490	Customer hours per year	Sum of Customer Minutes Interrupted (CMI) / 60
Duration of PSPS events (normalized)	0	0	7	17	30	Customer hours per RFW circuit mile day per year	5 RFW / # RFW days per year / total OH circuit miles

TABLE 13: Current Baseline State of Service Territory and Utility Equipment						
Land use	Characteristic tracked	In non- HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3	Comments
Service Territory	Circuit miles	11203		4047	2067	Tracking is not completed by rural/highly rural
	Circuit miles in WUI	6542		0	0	
	Number of critical facilities	8717		1268	515	
	Number of critical facilities in WUI	4409		0	0	
	Number of customers	1,287,181		172896	31181	Number of Meters
	Number of customers in WUI	619,466		0	0	
	Number of customers belonging to access and functional needs populations	47,263		7771	1939	Errata: HFTD Tier 2 and HFTD Tier 3 amounts were swapped in SDG&E's 02/07/2020 submittal. To clarify, the data provided for AFN populations encompasses SDG&E's medical baseline customer accounts
	Number of customers belonging to access and functional needs populations in WUI	27,079		0	0	
	Circuit miles of overhead transmission lines	1308		794	308	
	Circuit miles of overhead transmission lines in WUI	470		0	0	
	Circuit miles of overhead distribution lines	3002		1828	1658	
	Circuit miles of overhead distribution lines in WUI	1308		0	0	
	Number of substations	155		42	13	
	Number of substations in WUI	64		0	0	
	Circuit miles					
In rural areas	Circuit miles in WUI					
	Number of critical facilities					
	Number of critical facilities in WUI					
	Number of customers					
	Number of customers in WUI					
	Number of customers belonging to access and functional needs populations					
	Number of customers belonging to access and functional needs populations in WUI					
	Circuit miles of overhead transmission lines					
	Circuit miles of overhead transmission lines in WUI					
	Circuit miles of overhead distribution lines					
	Circuit miles of overhead distribution lines in WUI					
	Number of substations					

TABLE 13: Current Baseline State of Service Territory and Utility Equipment						
Land use	Characteristic tracked	In non- HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3	Comments
In highly rural areas	Circuit miles					
	Circuit miles in WUI					
	Number of critical facilities					
	Number of critical facilities in WUI					
	Number of customers					
	Number of customers in WUI					
	Number of customers belonging to access and functional needs populations					
	Number of customers belonging to access and functional needs populations in WUI					
	Circuit miles of overhead transmission lines					
	Circuit miles of overhead transmission lines in WUI					
	Circuit miles of overhead distribution lines					
	Circuit miles of overhead distribution lines in WUI					
	Number of substations					
	Number of substations in WUI					

TABLE 14: Summary Data on Weather Station Count

Weather station count type	Current Count	Unit(s)	Comments
Number of weather stations (total)	191	Total number located in service territory and operated by utility	
Number of weather stations (normalized)	0.023	Total number located in service territory and operated by utility, divided by total number of circuit miles in utility service territory	Used OH circuit miles - T&D 8336 miles
Number of weather stations in non- HFTD (total)	25	Total number located in non-HFTD service territory and operated by utility	
Number of weather stations in non-HFTD (normalized)	0.007	Total number located in non-HFTD service territory and operated by utility, divided by total number of circuit miles in non-HFTD service territory	Used OH circuit miles - T&D 3834 miles
Number of weather stations in HFTD Zone 1 (total)		Total number located in HFTD Zone 1 service territory and operated by utility	
Number of weather stations in HFTD Zone 1 (normalized)		Total number located in HFTD Zone 1 service territory and operated by utility, divided by total number of circuit miles in HFTD Zone 1 service territory	
Number of weather stations in HFTD Tier 2 (total)	64	Total number located in HFTD Tier 2 service territory and operated by utility	
Number of weather stations in HFTD Tier 2 (normalized)	0.025	Total number located in HFTD Tier 2 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 2 service territory	Used OH circuit miles - T&D - 2550 miles
Number of weather stations in HFTD Tier 3 (total)	102	Total number located in HFTD Tier 3 service territory and operated by utility	
Number of weather stations in HFTD Tier 3 (normalized)	0.052	Total number located in HFTD Tier 3 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 3 service territory	Used OH circuit miles - T&D - 1952 miles

TABLE 15: Summary Data on Fault Indicator Count

Fault indicator count type	Current Count	Unit(s)	Comments
Number of fault indicators (total)	4735	Total number located in service territory and operated by utility	
Number of fault indicators (normalized)	0.275	Total number located in service territory and operated by utility, divided by total number of circuit miles in utility service territory	
Number of fault indicators in non-HFTD (total)	3817	Total number located in non-HFTD service territory and operated by utility	
Number of fault indicators in non-HFTD (normalized)	0.344	Total number located in non-HFTD service territory and operated by utility, divided by total number of circuit miles in non-HFTD service territory	
Number of fault indicators in HFTD Zone 1 (total)		Total number located in HFTD Zone 1 service territory and operated by utility	
Number of fault indicators in HFTD Zone 1 (normalized)		Total number located in HFTD Zone 1 service territory and operated by utility, divided by total number of circuit miles in HFTD Zone 1 service territory	
Number of fault indicators in HFTD Tier 2 (total)	648	Total number located in HFTD Tier 2 service territory and operated by utility	
Number of fault indicators in HFTD Tier 2 (normalized)	0.16	Total number located in HFTD Tier 2 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 2 service territory	
Number of fault indicators in HFTD Tier 3 (total)	270	Total number located in HFTD Tier 3 service territory and operated by utility	
Number of fault indicators in HFTD Tier 3 (normalized)	0.13	Total number located in HFTD Tier 3 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 3 service territory	

TABLE 16: Location of Planned Utility Equipment Additions or Removal By End of 3-Year Plan Term					
Land use	Characteristic tracked	Changes by end-2022			
		In non-HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3
N/A	Circuit miles of overhead transmission lines	0		59.1	36
	Circuit miles of overhead distribution lines	16.5		116.1	242.4
	Circuit miles of overhead transmission lines in WUI	0		0	0
	Circuit miles of overhead distribution lines in WUI	16.5		0	0
	Number of substations	0		0	0
	Number of substations in WUI	0		0	0
	Number of weather stations	59		64	102
	Number of weather stations in WUI	59		0	0
In rural areas	Circuit miles of overhead transmission lines				
	Circuit miles of overhead distribution lines				
	Circuit miles of overhead transmission lines in WUI				
	Circuit miles of overhead distribution lines in WUI				
	Number of substations				
	Number of substations in WUI				
	Number of weather stations				
	Number of weather stations in WUI				
In highly rural areas	Circuit miles of overhead transmission lines				
	Circuit miles of overhead distribution lines				
	Circuit miles of overhead transmission lines in WUI				
	Circuit miles of overhead distribution lines in WUI				
	Number of substations				
	Number of substations in WUI				
	Number of weather stations				
	Number of weather stations in WUI				

Transmission lines refer to all lines at or above 65kV, and distribution lines refer to all lines below 65kV.

TABLE 17: Location of Planned Utility Infrastructure Upgrades


Land use	Characteristic tracked	In non-HFTD			In HFTD Zone 1			In HFTD Tier 2			In HFTD Tier 3		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Total circuit miles planned for hardening each year, all types and locations		5.5	5.5	5.5				72.5	54.9	47.8	162	66	50.4
Total number of substations planned for hardening each year, all locations		0	0	0				0	0	0	0	0	0
In urban areas	Circuit miles planned for grid hardening of overhead transmission lines	0	0	0				21.5	23.4	14.2	29	7	0
	Circuit miles of overhead transmission lines in WUI to harden	0	0	0				0	0	0	0	0	0
	Circuit miles of overhead distribution lines to harden	5.5	5.5	5.5				51	31.5	33.6	133	59	50.4
	Circuit miles of overhead distribution lines in WUI to harden	5.5	5.5	5.5				0	0	0	0	0	0
	Circuit miles of overhead transmission lines in WUI to harden	0	0	0				0	0	0	0	0	0
	Number of substations to harden	0	0	0				0	0	0	0	0	0
	Number of substations in WUI to harden	0	0	0				0	0	0	0	0	0
In rural areas	Circuit miles of overhead transmission lines to harden												
	Circuit miles of overhead transmission lines in WUI to harden												
	Circuit miles of overhead distribution lines to harden												
	Circuit miles of overhead distribution lines in WUI to harden												
	Circuit miles of overhead transmission lines in WUI to harden												
	Number of substations to harden												
	Number of substations in WUI to harden												
In highly rural areas	Circuit miles of overhead transmission lines to harden												
	Circuit miles of overhead transmission lines in WUI to harden												
	Circuit miles of overhead distribution lines to harden												
	Circuit miles of overhead distribution lines in WUI to harden												
	Circuit miles of overhead transmission lines in WUI to harden												
	Number of substations to harden												
	Number of substations in WUI to harden												

Transmission lines refer to all lines at or above 65kV, and distribution lines refer to all lines below 65kV.

TABLE 18a Distribution: Key Drivers of Ignition Probability								
Ignition probability drivers		Number of incidents per year (according to 5-year historical average)	Average likelihood of ignition per incident	Ignitions from this driver (according to 5-year historical average)				
				Total	In non- HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3
Contact from object	All types of object contact	503.4	2.54%	12.8	5.80		4.20	2.80
	Animal contact	83.8	1.19%	1	0.40		0.40	0.20
	Balloon contact	96.2	3.74%	3.6	2.20		0.60	0.80
	Vegetation contact	40	8.50%	3.4	1.40		1.00	1.00
	Vehicle contact	210.8	1.61%	3.4	1.20		1.60	0.60
	Other	72.6	1.93%	1.4	0.60		0.60	0.20
All types of equipment / facility failure	All types	1054	0.76%	8.0	3.00		2.40	2.60
	Capacitor bank failure	10.4	1.92%	0.2	0.00		0.20	0.00
	Conductor failure— all	40.8	4.41%	1.8	0.60		0.60	0.60
	Conductor failure— wires down	65.2	2.76%	1.8	0.60		0.60	0.60
	Fuse failure—all	18.2	2.20%	0.4	0.20		0.00	0.20
	Fuse failure—conventional blown fuse	577.4	0.07%	0.4	0.20		0.00	0.20
	Lightning arrester failure	22.8	2.63%	0.6	0.00		0.20	0.40
	Splice/Clamp/Connector Failure	33.2	4.22%	1.4	0.80		0.20	0.40
	Switch failure	19	3.16%	0.6	0.00		0.40	0.20
	Transformer failure	251.8	0.32%	0.8	0.20		0.20	0.40
Wire-to-wire contact / contamination		15.6	3.85%	0.6	0.40		0.20	0.00
Other		NA	NA	0.4	0.40		0.00	0.00

*Note: In SDG&E's Territory Zone 1 falls within Tiers 2 and 3. To avoid double counting all fires have been grouped into Tiers 2 and 3

Legend

 modified data

 new data

TABLE 18b Transmission: Key Drivers of Ignition Probability								
Ignition probability drivers		Number of incidents per year (according to 5-year historical average)	Average likelihood of ignition per incident	Ignitions from this driver (according to 5-year historical average)				
				Total	In non- HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3
Contact from object	All types of object contact	30.6	7.84%	2.4	1.20		1.60	0.20
	Animal contact	6.8	11.76%	0.8	0.40		0.40	0.00
	Balloon contact	20.2	2.97%	0.6	0.20		0.40	0.00
	Vegetation contact	0.4	0.00%	0	0.00		0.00	0.00
	Vehicle contact	2	30.00%	0.6	0.40		0.00	0.20
	Other	1.2	33.33%	0.4	0.00		0.40	0.00
All types of equipment / facility failure	All types	29	0.69%	0.2	0.00		0.00	0.00
	Capacitor bank failure	0	0.00%	0	0.00		0.00	0.00
	Conductor failure— all	2	0.00%	0	0.00		0.00	0.00
	Conductor failure— wires down	0	0.00%	0	0.00		0.00	0.00
	Fuse failure—all	0	0.00%	0	0.00		0.00	0.00
	Fuse failure—conventional blown fuse	0	0.00%	0	0.00		0.00	0.00
	Lightning arrestor failure	0.6	0.00%	0	0.00		0.00	0.00
	Splice/Clamp/Connector Failure	0.6	33.33%	0.2	0.00		0.20	0.00
	Switch failure	1.4	0.00%	0	0.00		0.00	0.00
	Transformer failure	0.2	0.00%	0	0.00		0.00	0.00
Wire-to-wire contact / contamination		20	0.00%	0	0.00		0.00	0.00
Other		4.2	9.52%	0.4	0.20		0.20	0.00

TABLE 19: Macro Trends Impacting Ignition Probability and/or Wildfire Consequence

Rank	Macro trends impacting utility ignited ignition probability and estimated wildfire consequence by year 10	Comments
1	Change in ignition probability and estimated wildfire consequence due to climate change	Climate change is already affecting California and San Diego County, and is driving higher wildfire risk for many reasons. <u>Extended droughts</u>
3	Change in ignition probability and estimated wildfire consequence due to relevant invasive species, such as bark beetles	Invasive species such as the bark beetle are not as much of a concern in the San Diego region, but eucalyptus trees and some grasses can be considered invasive and drive vegetation risk for wildfires.
2	Change in ignition probability and estimated wildfire consequence due to other drivers of change in fuel density and moisture	Fuel density and fuel changes as a result of climate change need more research, however fuel moisture will be an issue as lower relative humidity and drought as a result of climate change will create fuels that are at much higher risk of <u>catastrophic fire</u> .
8	Population changes (including Access and Functional Needs population) that could be impacted by utility ignition	AFN populations are a very high priority for SDG&E and there are many programs in place that build their resilience and wildfire safety. AFN population vulnerability remains a high priority, but is better addressed at this time than these other risks.
7	Population changes in HFTD that could be impacted by utility ignition	There are two potential impacts of higher population in HFTDs. One impact is that more people will be living in areas with high-wildfire threat, but on the other hand, there is the potential of more urbanization, thus reducing the amount of <u>people living in the WUI</u> .
6	Population changes in WUI that could be impacted by utility ignition	More people moving to WUI increases ignition probability because there is more infrastructure as well as more people in direct course of wildfire. This trend is changing the most quickly relative to others and thus will be the most important <u>looking just ten years out</u> .
5	Utility infrastructure location in HFTD vs non-HFTD	The infrastructure in the HFTD vs. non-HFTD is a area of focus for SDG&E and there are major projects hardening infrastructure in HFTD's.
4	Utility infrastructure location in urban vs rural vs highly rural areas	There are WUI areas in San Diego that are not included as a part of the HFTDs that can be prone to wildfire and thus SDG&E infrastructure in these areas are <u>targeted for risk mitigation</u> .
*NOTE: Comment on difference in approach to serving customers in urban versus rural versus highly rural areas.		

TABLE 20: Anticipated Characteristics of PSPS Use Over the Next 10 Years

Rank order 1-9	PSPS characteristic	Significantly increase; increase; no change; decrease; significantly decrease	Comments
1	Number of customers affected by PSPS events (total)	Significantly Decrease	
2	Number of customers affected by PSPS events (normalized by fire weather, e.g., Red Flag Warning line mile days)	Significantly Decrease	
7	Frequency of PSPS events in number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability (total)	Decrease	
8	Frequency of PSPS events in number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability (normalized by fire weather, e.g., Red Flag Warning line mile days)	Decrease	
5	Scope of PSPS events in circuit-events, measured in number of events multiplied by number of circuits targeted for de-energization (total)	Decrease	
6	Scope of PSPS events in circuit-events, measured in number of events multiplied by number of circuits targeted for de-energization (normalized by fire weather, e.g., Red Flag Warning line mile days)	Decrease	
3	Duration of PSPS events in customer hours (total)	Decrease	
4	Duration of PSPS events in customer hours (normalized by fire weather, e.g., Red Flag Warning line mile days)	Decrease	

TABLE 21: Risk Assessment and Mapping Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
A summarized risk map showing overall ignition probability and estimated wildfire consequence along electric lines and equipment (WRRM - 5.3.2.1 - 5.3.2.6, 5.3.7.3)	2019 plan	\$400	NA	\$0.023	NA	This control was grouped with Public Safety Risk Reduction during high wildfire conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$270	NA	\$0.016	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$1,400	NA	\$0.081	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$1,800	NA	\$0.104	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$2,200	NA	\$0.127	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$5,400	NA	\$0.313	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Other (High Performance Computing Infrastructure - 5.3.2.7)	2019 plan	NA	NA	NA	NA	This control was grouped with Public Safety Risk Reduction during high wildfire conditions for purposes of RSE calculations		NA	New	NA	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	New	NA	NA	Meets and exceeds	P.U. Code § 451	
	2020	0	NA	\$0.000	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	0	NA	\$0.000	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$8,500	NA	\$0.492	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$8,500	NA	\$0.492	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	

Legend

- modified data
- new data

TABLE 22: Situational Awareness and Forecasting Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Advanced weather monitoring and weather stations (Camera Networks and Advanced Weather Station Integration- 5.3.2.1)	2019 plan	*	NA	NA	Increased response speed to ignitions	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	*2019 WMP plan costs were combined with Fire Science and Climate Adaptation.
	2019 actual	\$559	NA	\$0.032				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$775	NA	\$0.045				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$775	NA	\$0.045				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$775	NA	\$0.045				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$2,325	NA	\$0.135				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Fault indicators for detecting faults on electric lines and equipment (Wireless Fault Indicators - 5.3.2.3)	2019 plan	\$600	NA	\$0.035	Mitigates customer impacts of sensitive settings	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$797	NA	\$0.046		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$630	NA	\$0.036		0%	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$630	NA	\$0.036		0%	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	NA	\$0.000		0%	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$1,260	NA	\$0.073		0%	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 22: Situational Awareness and Forecasting Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Che Associated rule	Comments
Forecast of fire risk index, fire potential index, or similar (Fire Science and Climate Adaptation Department 5.3.2.4 - 5.3.2.6, 5.3.10.2) (O&M)	2019 plan	\$2,000	NA	\$0.116	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$862	NA	\$0.050	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$2,500	NA	\$0.145	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$2,500	NA	\$0.145	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$2,500	NA	\$0.145	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$7,500	NA	\$0.434	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Forecast of fire risk index, fire potential index, or similar (Fire Science and Climate Adaptation Department 5.3.2.4 - 5.3.2.6)	2019 plan	NA	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$4,500	NA	\$0.260	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$0	NA	\$0.000	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	NA	\$0.000	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$4,500	NA	\$0.260	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

 modified data

 new data

TABLE 22: Situational Awareness and Forecasting Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Che Associated rule	Comments
Forecast of fire risk index, fire potential index or similar (Situational Awareness Dashboard 5.3.2.4) (Capital)	2019 plan	NA	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	NA	NA	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	NA	NA	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$2,100	NA	\$0.122	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$2,100	NA	\$0.122	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$2,100	NA	\$0.122	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$6,300	NA	\$0.365	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
Forecast of fire risk index, fire potential index or similar (Situational Awareness Dashboard 5.3.2.4)	2019 plan	NA	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	NA	NA	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	NA	NA	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$315	NA	\$0.018	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$315	NA	\$0.018	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$315	NA	\$0.018	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$945	NA	\$0.055	NA			NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 22: Situational Awareness and Forecasting Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Che Associated rule	Comments
Personnel for monitoring areas of electric lines and equipment in elevated fire risk conditions (Operating Conditions 5.3.2.5)	2019 plan	Base	NA	NA	Crew and all ignition probability from faults	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Other (NMS Situational Awareness Upgrades 5.3.2.7)	2019 plan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$525	NA	\$0.030	NA	0%	0	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$525	NA	\$0.030	NA	0%	0	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$525	NA	\$0.030	NA	0%	0	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$1,575	NA	\$0.091	NA	0%	0	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 22A: Situational Awareness and Forecasting Initiatives			
Initiative Activity	Year	Weather Stations Installed	
		Low	High
Camera Networks and Advanced Weather Station Integration	2019 Plan	11	15
	2019 Actual	13	
	2020	18	22
	2021	18	22
	2022	18	22
	2020-2022 Plan Totals	54	66
Initiative Activity	Year	Wireless Fault Indicators Installed	
		Low	High
Wireless Fault Indicators	2019 plan	450	550
	2019 actual	594	
	2020	450	550
	2021	450	550
	2022	0	0
	2020-2022 Plan Total	900	1100

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Capacitor maintenance and replacement program (SCADA Capacitor Program 5.3.3.1)	2019 plan	NA	NA	NA	Equipment failure, capacitor	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$1,575	NA	\$0.091		0.26%	140.4	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$1,575	NA	\$0.091		0.02%	10.4	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$1,995	NA	\$0.115		0.02%	10.1	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$5,145	NA	\$0.298		0.30%	48.8	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Circuit breaker maintenance and installation to de-energize lines upon detecting a fault (Advanced Protection 5.3.3.2 and 5.3.3.9)	2019 plan	\$3,000	NA	\$0.174	Reduces % chance fault becomes an ignition	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$3,400	NA	\$0.197		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$5,300	NA	\$0.307		1.68%	24.8	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$9,100	NA	\$0.527		1.85%	24.8	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$9,100	NA	\$0.527		2.30%	24.8	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$23,500	NA	\$1.360		5.83%	24.8	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Covered Conductor Installation (Distribution Overhead Fire Hardening OH 5.3.3.3, 5.3.3.13, 5.3.4.13)	2019 plan	\$75,400	130	\$580	Equipment Failure All	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$120,611	122.9	\$981		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$87,000	102.0	\$853		1.23%	22.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$12,000	14.0	\$857		0.21%	22.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$7,200	8.4	\$857		0.14%	22.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$106,200	124.4	\$854		1.58%	22.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Covered Conductor Installation (Distribution Overhead Fire Hardening Covered Conductor 5.3.3.3, 5.3.3.13, 5.3.4.13)	2019 plan	0	0	0	Equipment Failure All, Foreign Object in Line, all but large vegetation, vehicle contacts	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	0	0	0		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$1,071	1	\$1,071		0.05%	20.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$10,800	10	\$1,080		0.20%	20.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$10,800	10	\$1,080		0.18%	20.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$22,671	21.0	\$1,080		0.42%	20.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Distribution pole replacement and reinforcement, including with composite poles (Pole Replacement and Reinforcement 5.3.3.6)	2019 plan	\$13,300	NA	\$0.770	Equipment failure, all except for wires	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$11,705	NA	\$0.677		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$10,568	NA	\$0.612		1.2%	24.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$10,568	NA	\$0.612		1.1%	24.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$10,568	NA	\$0.612		0.9%	24.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$31,704	NA	\$1.835		3.1%	24.7	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Expulsion Fuse Replacement Program 5.3.3.7	2019 plan	\$9,700	NA	\$0.561	Fuse Operation	NA	NA	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$3,716	NA	\$0.215		NA	NA	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020	\$3,737	NA	\$0.216		0.24%	107.7	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$4,983	NA	\$0.288		0.08%	24.5	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$1,903	NA	\$0.110		0.03%	23.9	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$10,623	NA	\$0.615		0.35%	53.0	NA	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Grid Topology improvements to mitigate or reduce PSPS events (PSPS Enhancements - Sectionalizing Devices 5.3.3.8)	2019 plan	\$550	NA	\$0.032	PSPS impacts	NA	NA	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$1,303	NA	\$0.075		NA	NA	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020	\$550	NA	\$0.032		0	0	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$550	NA	\$0.032		0	0	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$550	NA	\$0.032		0	0	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$1,650	NA	\$0.096		0	0	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
Maintenance, repair, and replacement of connectors, including hotline clamps (Hotline Clamp Replacement Program 5.3.3.10)	2019 plan	\$1,500	NA	\$0.087	Equipment failure, Wire Down	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$922	NA	\$0.053		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$3,000	NA	\$0.174		0.12%	65.9	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$3,000	NA	\$0.174		0.12%	64.0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$3,000	NA	\$0.174		0.02%	8.2	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$9,000	NA	\$0.521		0.25%	46.0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Grid Topology improvements to mitigate or reduce PSPS events (Microgrids 5.3.3.8)	2019 plan	\$3,000	NA	\$0.174	PSPS impacts	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$188	NA	\$0.011		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$11,340	NA	\$0.656		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$8,400	NA	\$0.486		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$8,400	NA	\$0.486		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$28,140	NA	\$1.629		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Mitigation of impact on customers and other residents affected during PSPS event (Customer Resiliency Programs 5.3.3.11)	2019 plan	\$700	NA	\$0.041	PSPS impacts	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$1,458	NA	\$0.084				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$5,210	NA	\$0.302				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$5,972	NA	\$0.346				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$8,130	NA	\$0.471				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$19,312	NA	\$1.118				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Mitigation of impact on customers and other residents affected during PSPS event (Generator Grant Program - Expanded 5.3.3.11)	2019 plan	NA	NA	NA	PSPS impacts	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$250	NA	\$0.014		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$250	NA	\$0.014		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$250	NA	\$0.014		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$750	NA	\$0.043		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Mitigation of impact on customers and other residents affected during PSPS event (Whole Home Generators 5.3.3.11)	2019 plan	NA	NA	NA	PSPS impacts	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	Errata: whole home generator cost forecast was incorrect in SDG&E's 02/07/2020 submittal
	2019 actual	NA	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$3,000	NA	\$0.174		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$3,000	NA	\$0.174		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$3,000	NA	\$0.174		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$9,000	NA	\$0.521		0	0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Undergrounding of Electric Lines and/or Equipment 5.3.3.16	2019 plan	\$1,500	1.5	\$1,000	All equipment failure and foreign object in lines	NA	NA	Reliability	Existing	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$4,727	2.6	\$1,818.08		NA	NA	Reliability	Existing	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020	\$31,000	10	\$3,100		0.46%	21.6	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$157,000	50	\$3,140		2.15%	21.6	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$188,000	60	\$3,133		2.57%	21.6	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$376,000	120	\$3,133		5.18%	21.6	Reliability	New	NA	FRMMA	Meets and exceeds	P.U. Code § 451	
Upgrades to grid topology to minimize the risk of ignition in the HFTD (Overhead Transmission and Distribution Fire Hardening - Transmission OH 5.3.3.17)	2019 plan	FERC	7	NA	Equipment Failure All	NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2019 actual	FERC	7	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2020	FERC	19.3	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2021	FERC	24.4	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2022	FERC	18.5	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2020-2022 Plan Total	FERC	62.2	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Upgrades to grid topology to minimize the risk of ignition in the HFTD (Transmission and Distribution Fire Hardening - Transmission UG 5.3.3.17)	2019 plan	FERC	3	NA	All equipment failure and foreign object in lines	NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2019 actual	FERC	3	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2020	FERC	0.0	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2021	FERC	6.0	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2022	FERC	0.0	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
	2020-2022 Plan Total	FERC	6.0	NA		NA FERC	NA FERC	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	G.O. 95	
Upgrades to grid topology to minimize the risk of ignition in the HFTD (Overhead Transmission and Distribution Fire Hardening - Distribution Underbuilt 5.3.3.17)	2019 plan	\$5,500	10	\$550	Equipment Failure All	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	G.O. 95	
	2019 actual	\$2,964	10	\$296		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	G.O. 95	
	2020	\$5,871	12.3	\$477		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	G.O. 95	
	2021	\$13,765	21.8	\$631		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	G.O. 95	
	2022	\$6,070	7.9	\$768		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	G.O. 95	
	2020-2022 Plan Total	\$25,706	42.0	\$612		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	G.O. 95	

Legend

- modified data
- new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Upgrades to grid topology to minimize the risk of ignition in the HFTD (CNF Fire Hardening - Transmission OH)	2019 plan	FERC	28	NA	Equipment Failure All	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	FERC	25	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	FERC	29	NA		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	FERC	0	NA		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	FERC	0	NA		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	FERC	29	NA		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Upgrades to grid topology to minimize the risk of ignition in the HFTD (CNF Fire Hardening - Distribution OH Associated with Transmission 5.3.3.17)	2019 plan	\$53,000	22	\$2,409	Equipment Failure All	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$12,793	26.4	\$485		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$17,500	25	\$700		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$0	0	\$0		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	0	\$0		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$17,500	25	\$700		NA FERC	NA FERC	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Upgrades to grid topology to minimize the risk of ignition in the HFTD (CNF Fire Hardening - Distribution OH 5.3.3.17)	2019 plan	\$53,000	22	\$2,409	Equipment Failure All	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$28,190	26.4	\$1,068		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$17,500	25	\$700		1.07%	24.2	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$9,570	1.0	\$9,570		0.03%	24.2	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	0	\$0		0.00%	0.0	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$27,070	26.0	\$1,041		1.10%	24.2	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Upgrades to grid topology to minimize the risk of ignition in the HFTD (CNF Fire Hardening - Distribution UG 5.3.3.17)	2019 plan	NA	17	NA	All equipment failure and foreign object in lines	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$27,664	8.7	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$30,000	14	\$2,143		See CNF OH	See CNF OH	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$930	0.5	\$1,860		See CNF OH	See CNF OH	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	0	NA		See CNF OH	See CNF OH	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$30,930	14.5	\$2,133		See CNF OH	See CNF OH	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Other (Lightning Arrestor Replacement Program 5.3.3.18)	2019 plan	NA	NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020	\$0	NA	\$0.000	NA	0	0	NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$1,050	NA	\$0.061	NA	0.6%	259.7	NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$2,100	NA	\$0.122	NA	0.6%	259.7	NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$3,150	NA	\$0.182	NA	0.6%	259.7	NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
Other (LTE Communication Network 5.3.3.18)	2019 plan	\$11,000	NA	\$0.637	NA	This was grouped with Advanced Protection for the purposes of RSE calculation		NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$7,086	NA	\$0.410	NA			NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020	\$31,500	NA	\$1.823	NA			NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2021	\$31,500	NA	\$1.823	NA			NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2022	\$41,500	NA	\$2.402	NA			NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$104,500	NA	\$6.049	NA			NA	Existing	TY 2019 GRC	FRMMA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 23A: Grid Design and System Hardening Initiatives

Initiative Activity	Year	SCADA Caps installed					
		Low	High				
SCADA Capacitor Program	2019 Plan	NA	NA				
	2019 Actual	NA					
	2020	27	33				
	2021	27	33				
	2022	34	42				
	2020-20222 Plan Totals	88	108				
Initiative Activity	Year	Circuits Enabled				Substations Enabled	
		Low	High			Low	High
Advanced Protection	2019 Plan	6	10	New Metric for post-2019 work			
	2019 Actual	8					
	2020	6	10	4	8		
	2021	7	11	6	10		
	2022	12	18	4	8		
	2020-20222 Plan Totals	25	39	14	26		

TABLE 23A: Grid Design and System Hardening Initiatives

OH Hardening 2019 Program Summary		Total per initiative spend		Line Miles to be treated	
		Low	High	Low	High
2019 Plan	FIRM	\$49,500	\$60,500	81	99
	PRIME	\$14,400	\$21,600	27.8	41.7
	WiSE	\$1,800	\$3,000	4	6
	Total	\$65,700	\$85,100	112.8	146.7
2019 Actual	FIRM	\$89,300		83	
	PRIME	\$30,880		34.2	
	WiSE	\$4,698		5.7	
	Total	\$124,878		122.9	
Initiative Activity	Year	Poles Replaced			
		Low	High		
Pole Replacement and Reinforcement	2019 Plan	659	1023		
	2019 Actual	725			
	2020	600	740		
	2021	600	740		
	2022	600	740		
	2020-20222 Plan Totals	1800	2220		

TABLE 23A: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total Fuses Replaced	
		Low	High
Expulsion Fuse Replacement Program	2019 Plan	1800	2700
	2019 Actual	2490	
	2020	2400	3600
	2021	3200	4800
	2022	1228	1842
	2020-20222 Plan Totals	6828	10242
Initiative Activity	Year	Sectionalizing Devices Installed	
		Low	High
PSPS Enhancements - Sectionalizing Devices	2019 Plan	6	8
	2019 Actual	7	
	2020	8	12
	2021	8	12
	2022	8	12
	2020-20222 Plan Totals	24	36

TABLE 23A: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Total Hot Line Clamps Replaced						
		Low	High					
Hot Line Clamp Replacement Program	2019 Plan	400	600					
	2019 Actual	660						
	2020	1320	1980					
	2021	1320	1980					
	2022	1320	1980					
	2020-20222 Plan Totals	3960	5940					
Initiative Activity	Year	Micro Grids Installed		Comments				
		Low	High					
Micro Grids	2019 Plan	0	1	*Substantial progress was made on the Cameron Quarters Micro Grid Project, it will be completed in 2020.				
	2019 Actual	*0						
	2020	2	4					
	2021	2	4					
	2022	0	2					
	2020-20222 Plan Totals	4	10					
Initiative Activity	Year	Generators Provided		Community Resource Centers		Community and Critical Infrastructure Generator Lease		
		Low	High	Low	High	Low	High	
Customer Resilliancy Programs	2019 Plan	50	80	8	11	NA	NA	
	2019 Actual	65		8		NA		
	2020	1000	1500	8	10	3	5	
	2021	1200	1800	10	12	3	5	
	2022	1600	2160	10	14	3	5	
	2020-20222 Plan Totals	3800	5460	28	36	9	15	
Initiative Activity	Year	Generator s Provided						
		Low	High					
Generator Grant Program Expanded	2019 Plan	NA	NA					
	2019 Actual	NA						
	2020	104	156					
	2021	104	156					
	2022	104	156					
	2020-20222 Plan Totals	312	468					
Initiative Activity	Year	Generator s Provided						
		Low	High					

TABLE 23A: Grid Design and System Hardening Initiatives

Whole House Generators	2019 Plan	NA	NA	
	2019 Actual	NA		
	2020	240	360	
	2021	240	360	
	2022	240	360	
	2020-20222 Plan Totals	720	1080	

TABLE 23A: Grid Design and System Hardening Initiatives

Initiative Activity	Year	Lightning Arrestors Replaced	
		Low	High
Lightning Arrestor Replacement Program	2019 Plan	NA	NA
	2019 Actual	NA	
	2020	0	0
	2021	836	1012
	2022	1672	2024
	2020-20222 Plan Totals	2508	3036
Initiative Activity	Year	Base Stations Installed	
		Low	High
LTE Communication Network	2019 Plan	NA	
	2019 Actual		
	2020	20	30
	2021	52	78
	2022	68	102
	2020-20222 Plan Totals	140	210

TABLE 24: Asset Management and Inspections Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Detailed inspections of distribution electric lines and equipment (SDG&E Corrective Maintenance Program - HFTD 5.3.4.1, 5.3.4.6, 5.3.4.11, 5.3.3.4, 5.3.3.5, 5.3.3.12, 5.3.3.14)	2019 plan	Base	NA	NA	All equipment failure related (less hot connections)	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets	GO165	*SDG&E's corrective maintenance program inspection costs were not broken out in the previous WMP. SDG&E plans to track inspection costs within the HFTD going forward.
	2019 actual	*Base	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets	GO165	
	2020	\$1,552	NA	\$0.090		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets	GO165	
	2021	\$1,262	NA	\$0.073		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets	GO165	
	2022	\$632	NA	\$0.037		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets	GO165	
	2020-2022 Plan Total	\$3,446	NA	\$0.199		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets	GO165	
Detailed inspections of transmission electric lines and equipment (Transmission System Inspections 5.3.4.2, 5.3.4.5, 5.3.4.12)	2019 plan	FERC	NA	NA	All equipment failure	NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds	California Public Resources Code (PRC) §§ 4292 and 4293, as well as GO 95 and GO 128 rules.	
	2019 actual	FERC	NA	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds		
	2020	FERC	NA	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds		
	2021	FERC	NA	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds		
	2022	FERC	NA	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds		
	2020-2022 Plan Total	FERC	NA	NA		NA	NA	Reliability	Existing	FERC TOS Filing	NA	Meets and exceeds		

Legend
 modified data

 new data

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Infrared Inspections of distribution electric lines and equipment (Infrared Corona 5.3.4.4)	2019 plan	NA	NA	NA	Hot Connection Equipment Failure	*		Reliability	NA	NA	FRMMA	Exceeds	GO165	*RSE values for SDG&E's enhanced inspection programs were grouped in the November RAMP filing
	2019 actual	\$98	NA	\$0.01				Reliability	NA	NA	FRMMA	Exceeds	GO165	
	2020	\$245	NA	\$0.01				Reliability	New	NA	FRMMA	Exceeds	GO165	
	2021	\$245	NA	\$0.01				Reliability	New	NA	FRMMA	Exceeds	GO165	
	2022	\$245	NA	\$0.01				Reliability	New	NA	FRMMA	Exceeds	GO165	
	2020-2022 Plan Total	\$735	NA	\$0.04				Reliability	New	NA	FRMMA	Exceeds	GO165	
Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations (HFTD Tier 3 Inspections 5.3.4.9, 5.3.4.3.)	2019 plan	*Base	NA	NA	All equipment failure related (less hot connections)	*		Reliability	Existing	TY 2019 GRC	NA	Exceeds	GO165	*RSE values for SDG&E's enhanced inspection programs were grouped in the November RAMP filing
	2019 actual	Base	NA	NA				Reliability	Existing	TY 2019 GRC	NA	Exceeds	GO165	
	2020	\$368	NA	\$0.021				Reliability	Existing	TY 2019 GRC	NA	Exceeds	GO165	
	2021	\$368	NA	\$0.021				Reliability	Existing	TY 2019 GRC	NA	Exceeds	GO165	
	2022	\$368	NA	\$0.021				Reliability	Existing	TY 2019 GRC	NA	Exceeds	GO165	
	2020-2022 Plan Total	\$1,104	NA	\$0.064				Reliability	Existing	TY 2019 GRC	NA	Exceeds	GO165	
Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations (Drone Inspections- capital 5.3.4.9, 5.3.4.3)	2019 plan	NA	NA	NA	All equipment failure related (less hot connections)	*		Reliability	NA	NA	NA	Meets and exceeds	GO 165, GO 95	*RSE values for SDG&E's enhanced inspection programs were grouped in the November RAMP filing, RSE value is listed in Pole Replacement and Reinforcement
	2019 actual	NA	NA	NA				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2020	\$3,600	NA	\$0.208				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2021	\$2,430	NA	\$0.141				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2022	\$2,430	NA	\$0.141				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2020-2022 Plan Total	\$8,460	NA	\$0.490				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
Legend														
<div><div></div> modified data</div> <div><div></div> new data</div>														

TABLE 24: Asset Management and Inspections Initiatives														
Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations (Drone Inspections - O&M 5.3.4.9, 5.3.4.3) *Flights & Assessments	2019 plan	NA	NA	NA	All equipment failure related (less hot connections)	*		Reliability	NA	NA	NA	Meets and exceeds	GO 165, GO 95	*RSE values for SDG&E's enhanced inspection programs were grouped in the November RAMP filing, RSE value is listed in Pole Replacement and Reinforcement
	2019 actual	\$13,474	NA	\$0.78				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2020	\$23,350	NA	\$1.35				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2021	\$20,800	NA	\$1.20				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2022	\$15,150	NA	\$0.88				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	2020-2022 Plan Total	\$59,300	NA	\$3.43				Reliability	New	NA	FRMMA	Meets and exceeds	GO 165, GO 95	
	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations (Drone Inspections - O&M 5.3.4.9, 5.3.4.3) *Engineering & Construction	2019 plan	NA	NA				NA	All equipment failure related (less hot connections)	*		Reliability	NA	
2019 actual		NA	NA	NA	Reliability	New	NA	FRMMA				Meets and exceeds	GO 165, GO 95	
2020		\$27,150	NA	\$1.571	Reliability	New	NA	FRMMA				Meets and exceeds	GO 165, GO 95	
2021		\$24,300	NA	\$1.406	Reliability	New	NA	FRMMA				Meets and exceeds	GO 165, GO 95	
2022		\$19,775	NA	\$1.145	Reliability	New	NA	FRMMA				Meets and exceeds	GO 165, GO 95	
2020-2022 Plan Total		\$71,225	NA	\$4.123	Reliability	New	NA	FRMMA				Meets and exceeds	GO 165, GO 95	
Legend														
<div><div></div> modified data</div> <div><div></div> new data</div>														

TABLE 24: Asset Management and Inspections Initiatives															
Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction		Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations (Circuit Ownership 5.3.4.9, 5.3.4.3)	2019 plan	NA	NA	NA	All equipment failure related (less hot connections)	*		Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	*RSE values for SDG&E's enhanced inspection programs were grouped in the November RAMP filing. RSE value is listed in Pole Replacement and Reinforcement	
	2019 actual	NA	NA	NA				Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451		
	2020	\$525	NA	\$0.030				Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451		
	2021	\$525	NA	\$0.030				Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451		
	2022	\$525	NA	\$0.030				Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451		
	2020-2022 Plan Total	\$1,575	NA	\$0.091				Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451		
Substation Inspections 5.3.4.15	2019 plan	Base	NA	NA	All equipment failure	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	GO174		
	2019 actual	Base	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	GO174		
	2020	Base	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	GO174		
	2021	Base	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	GO174		
	2022	Base	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	GO174		
	2020-2022 Plan Total	Base	NA	NA		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	GO174		
Legend															
<div><div></div> modified data</div>															
<div><div></div> new data</div>															

TABLE 24A: Asset Management and Inspections Initiatives

Initiative Activity	Year	5 year Detailed Inspections		Annual Patrols		Wood Pole Intrusive Inspections			
		Low	High	Low	High	Low	High		
SDG&E Corrective Maintenance Program (HFTD)	2019 Plan	16,000	17,000	85,000	87,000	18,000	20,000		
	2019 Actual	16,329		86,401		19,729			
	2020	17,000	18,000	85,000	87,000	17,000	19,000		
	2021	22,000	23,000	85,000	87,000	7,000	9,000		
	2022	18,000	19,000	85,000	87,000	300	500		
	2020-20222 Plan Totals	57,000	60,000	255,000	261,000	24,300	28,500		
Initiative Activity	Year	Transmission Visual Inspections		Transmission Infrared Inspections		Transmission Detailed Inspections		Additional Transmission Aerial 69kV Tier 3 Visual Inspection	
		Low	High	Low	High	Low	High	Low	High
Transmission System Inspections	2019 Plan	94	140	90	136	29	45	21	33
	2019 Actual	116		112		37		27	
	2020	94	140	90	136	33	49	21	33
	2021	94	140	90	136	30	46	21	33
	2022	94	140	90	136	30	46	21	33
	2020-20222 Plan Totals	282	420	270	408	93	141	63	99

TABLE 24A: Asset Management and Inspections Initiatives

Initiative Activity	Year	Infrared/Corona Inspections	
		Low	High
Infrared Corona	2019 Plan	NA	NA
	2019 Actual	NA	
	2020	7000	10000
	2021	7000	10000
	2022	7000	10000
	2020-20222 Plan Totals	21000	30000
Initiative Activity	Year	QA/QC Inspections	
		Low	High
HFTD Tier 3 Inspections	2019 Plan	11000	12000
	2019 Actual	15176	
	2020	11000	12000
	2021	11000	12000
	2022	12000	13000
	2020-20222 Plan Totals	34000	37000

TABLE 24A: Asset Management and Inspections Initiatives

Initiative Activity	Year	Drone Inspections Completed	
		Low	High
Drone Inspections	2019 Plan	9000	11000
	2019 Actual	10400	
	2020	28000	38000
	2021	18000	21,500
	2022	15000	18000
	2020-20222 Plan Totals	61000	77500
Initiative Activity	Year	Substation Inspections	
		Low	High
Substation System Inspections	2019 Plan	300	360
	2019 Actual	301	
	2020	300	360
	2021	300	360
	2022	300	360
	2020-20222 Plan Totals	900	1080

TABLE 25: Vegetation Management and Inspections Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Detailed inspections of vegetation around distribution electric lines and equipment (Tree Trimming 5.3.5.1,5.3.5.2,5.3.5.3, 5.3.5.7, 5.3.5.8, 5.3.5.11,5.3.5.12,5.3.5.13,5.3.5.14, 5.3.5.15, 5.3.5.16, 5.3.5.17, 5.3.5.18, 5.3.5.19)	2019 plan	*Base	NA	NA	Vegetation Contact	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	*In SDGE's 2019 WMP, Tree Trimming was listed as part of base business and costs for the program were not provided. Going forward, SDG&E will be providing these costs.
	2019 actual	\$33,957	NA	\$1.97		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$27,775	NA	\$1.608		50%	122.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$27,775	NA	\$1.608		50%	122.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$27,775	NA	\$1.608		50%	122.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$83,325	NA	\$4.823		50%	122.5	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 25: Vegetation Management and Inspections Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Fuels management and reduction of "slash" from vegetation management activities (Fuels Management Program 5.3.5.5, 5.3.10.4)	2019 plan	\$500	NA	\$0.029	Reduces chance fault becomes an ignition, reduces initial propagation	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$5,093	NA	\$0.295		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$5,000	NA	\$0.289		0.4%	5.2	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$5,000	NA	\$0.289		0.4%	5.2	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$5,000	NA	\$0.289		0.4%	5.2	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$15,000	NA	\$0.868		0.4%	5.2	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 25: Vegetation Management and Inspections Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Other discretionary inspection of vegetation around distribution electric lines and equipment, beyond inspections mandated by rules and regulation (Enhanced Inspections Patrols and Trimming 5.3.5.9, 5.3.5.4,5.3.5.10,5.3.5.15, 5.3.5.16)	2019 plan	\$3,000	NA	\$0.174	Vegetation Contact	NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$7,396	NA	\$0.428		NA	NA	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$23,603	NA	\$1.366		5.0%	14.41	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$23,603	NA	\$1.366		5.0%	14.41	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$23,603	NA	\$1.366		5.0%	14.41	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$70,809	NA	\$2.049		5.0%	14.41	Reliability	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 25: Vegetation Management and Inspections Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Vegetation management to achieve clearances around electric lines and equipment (Pole Brushing 5.3.5.20)	2019 plan	*Base	NA	NA	Reduces chances that a fault will lead to an ignition	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	*In SDGE's 2019 WMP, Pole Brushing was listed as part of base business and costs for the program were not provided. Going forward, SDG&E will be providing these costs.
	2019 actual	\$3,884	NA	\$0.22		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$5,943	NA	\$0.34		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$5,943	NA	\$0.34		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$5,943	NA	\$0.34		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$17,829	NA	\$1.03		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 25A: Vegetation Management and Inspections Initiatives			
Initiative Activity	Year	Trees Inspected	
		Low	High
Tree Trimming	2019 Plan	450,000	460,000
	2019 Actual	453,330	
	2020	450,000	460,000
	2021	450,000	460,000
	2022	450,000	460,000
	2020-2022 Plan Totals	1,350,000	1,380,000
Initiative Activity	Year	Trees Trimmed to 25' or removed	
		Low	High
Enhanced Inspections Patrols and Trimming	2019 Plan	7000	8000
	2019 Actual	8310	
	2020	14000	20000
	2021	14000	20000
	2022	14000	20000
	2020-2022 Plan Totals	42000	60000

TABLE 25A: Vegetation Management and Inspections Initiatives			
Initiative Activity	Year	Poles Brushed	
		Low	High
Pole Brushing	2019 Plan	32000	39000
	2019 Actual	34000	
	2020	32000	39000
	2021	32000	39000
	2022	32000	39000
	2020-2022 Plan Totals	96000	117000
Initiative Activity	Year	Poles cleared	
		Low	High
Fuels Management	2019 Plan	400	600
	2019 Actual	511	
	2020	400	600
	2021	400	600
	2022	400	600
	2020-2022 Plan Totals	1200	1800

TABLE 26: Grid Operations and Protocols Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Automatic recloser operations (Recloser Protocols 5.3.6.1)	2019 plan	*Base	NA	NA	Reduces chance of fault leading to an ignition	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Crew-accompanying ignition prevention and suppression resources and services (Wildfire Infrastructure Protection Teams 5.3.6.2)	2019 plan	\$900	NA	\$0.052	Employee Caused Ignitions	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	CFR cost estimates can fluctuate based on the actual conditions that accompany fire season. The Primary contract calls for 8 CFRs a day but in reality there are usually more ordered. Additionally, CFRs used during Extreme weather events and other fire related activations are not included in the above estimates
	2019 actual	\$1,790	NA	\$0.104		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$1,668	NA	\$0.097		0.76%	31.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$1,668	NA	\$0.097		0.76%	31.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$1,668	NA	\$0.097		0.76%	31.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$5,004	NA	\$0.290		0.76%	31.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

 modified data

 new data

TABLE 26: Grid Operations and Protocols Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If News Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Personnel work procedures and training in conditions of elevated fire risk (Other Special Work Procedures 5.3.6.3)	2019 plan	Base	NA	NA	Employee Caused Ignitions	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	Base	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
PSPS events and mitigation of PSPS impacts (Strategy for Minimizing Public Safety Risk During High Wildfire Conditions 5.3.6.5, 5.3.6.4)	2019 plan	Base	NA	NA	All	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code §§ 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8.	
	2019 actual	Base	NA	NA	All	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code §§ 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8.	
	2020	Base	NA	NA	All	50%	118.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code §§ 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8.	
	2021	Base	NA	NA	All	50%	118.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code §§ 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8.	
	2022	Base	NA	NA	All	50%	118.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code §§ 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8.	
	2020-2022 Plan Total	Base	NA	NA	All	50%	118.0	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code §§ 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8.	

Legend

- modified data
- new data

TABLE 26: Grid Operations and Protocols Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If News Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
PSPS events and mitigation of PSPS impacts (Mitigating the Public Safety Impact of PSPS Protocols 5.3.6.5, 5.3.10.3)	2019 plan	Base	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2019 actual	Base	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2020	Base	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2021	Base	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2022	Base	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2020-2022 Plan Total	Base	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
PSPS events and mitigation of PSPS impacts (Communication Practices - Capital 5.3.6.5, 5.3.10.1)	2019 plan	NA	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2019 actual	NA	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2020	\$3,000	NA	\$0.17	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2021	\$0	NA	\$0.00	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2022	\$0	NA	\$0.00	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2020-2022 Plan Total	\$3,000	NA	\$0.17	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	

Legend

modified data

new data

TABLE 26: Grid Operations and Protocols Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If News Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
PSPS events and mitigation of PSPS Impacts (Communication Practices - O&M 5.3.6.5, 5.3.10.1)	2019 plan	\$2,500	NA	\$0.14	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2019 actual	\$3,057	NA	\$0.18	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2020	\$4,928	NA	\$0.29	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2021	\$4,928	NA	\$0.29	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2022	\$4,928	NA	\$0.29	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
	2020-2022 Plan Total	\$13,374	NA	\$0.77	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 399.2(a) and 451, D.12-04-024, and Commission Resolution ESRB-8	
Stationed and on call ignition prevention and suppression resources and services (Aviation Firefighting Program - Capital 5.3.6.6)	2019 plan	NA	NA	NA	Fire Suppression	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$7,200	NA	\$0.417		See Aviation Firefighting Program (O&M)		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$14,400	NA	\$0.833				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	NA	\$0.000				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$21,600	NA	\$1.250				NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

modified data

new data

TABLE 26: Grid Operations and Protocols Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New- Memo and sum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Stationed and on call ignition prevention and suppression resources and services (Aviation Firefighting Program O&M- 5.3.6.6)	2019 plan	\$7,500	NA	\$0.434	Fire Suppression	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$3,938	NA	\$0.228		NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$7,961	NA	\$0.461		5.0%	31.5	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$7,961	NA	\$0.461		5.0%	31.5	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$7,961	NA	\$0.461		5.0%	31.5	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$23,883	NA	\$1.382		5.0%	31.5	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	Stationed and on call ignition prevention and suppression resources and services (Industrial Fire Brigade 5.3.6.6)	2019 plan	Base	NA		NA	Fire Suppression	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds
2019 actual		Base	NA	NA	NA	NA		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
2020		\$338	NA	\$0.020	0.1%	22.9		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
2021		\$338	NA	\$0.020	0.1%	22.9		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
2022		\$338	NA	\$0.020	0.1%	22.9		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
2020-2022 Plan Total		\$1,014	NA	\$0.059	0.1%	22.9		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

- modified data
- new data

TABLE 27: Data Governance Initiatives

Initiative Activity	Year	Total per initiative spend		Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Centralized repository for data (Geographic Information Systems 5.3.7.1)	2019 plan	Base		NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	Base		NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	Base		NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	Base		NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	Base		NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	Base		NA	NA	NA	NA	NA	NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Tracking and analysis of near miss data (Ignition Management Program 5.3.7.4)	2019 plan	Base	Base	NA	NA	NA	This was grouped with OH hardening (BC and CC) and Undergrounding for the purpose of calculating RSE's	NA	Existing	TY 2019 GRC	NA	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA		NA	NA	NA		NA	Existing	TY 2019 GRC	NA	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$315		NA	\$0.018	NA		NA	Existing	TY 2019 GRC	NA	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$315		NA	\$0.018	NA		NA	Existing	TY 2019 GRC	NA	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$315		NA	\$0.018	NA		NA	Existing	TY 2019 GRC	NA	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$945		NA	\$0.055	NA		NA	Existing	TY 2019 GRC	NA	NA	Meets and exceeds	P.U. Code § 451	

Legend

- modified data
- new data

TABLE 28: Resource Allocation Methodology Initiatives


Initiative Activity	Year	Total per initiative spend (Capital)	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Allocation methodology development and application (Asset Management - capital - 5.3.8.1, 5.3.7.1)	2019 plan	NA	NA	NA	NA	This was grouped with OH hardening (BC and CC) and Undergrounding for the purpose of calculating RSE's		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$9,698	NA	\$0.561	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$3,750	NA	\$0.217	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$5,250	NA	\$0.304	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$18,698	NA	\$1.082	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

- modified data
- new data

TABLE 28: Resource Allocation Methodology Initiatives

Initiative Activity	Year	Total per initiative spend (Capital)	Line Miles to be treated	Spends per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Allocation methodology development and application (Asset Management - O&M 5.3.8.1, 5.3.7.1)	2019 plan	\$1,500	NA	\$0.087	NA	This was grouped with OH hardening (BC and CC) and Undergrounding for the purpose of calculating RSE's		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$107	NA	\$0.006	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$450	NA	\$0.026	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$550	NA	\$0.032	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$550	NA	\$0.032	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$1,550	NA	\$0.090	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 28: Resource Allocation Methodology Initiatives

Initiative Activity	Year	Total per initiative spend (Capital)	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Other - (Wildfire Mitigation Personnel) 5.3.8.4	2019 plan	NA	NA	NA	NA	This was grouped with OH hardening (BC and CC) and Undergrounding for the purpose of calculating RSE's		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$1,838	NA	\$0.106	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$1,838	NA	\$0.106	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$1,838	NA	\$0.106	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$5,514	NA	\$0.319	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend

- modified data
- new data

TABLE 28: Resource Allocation Methodology Initiatives

Initiative Activity	Year	Total per initiative spend (Capital)	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Other (PSPS Mitigation Engineering Team) 5.3.8.4	2019 plan	NA	NA	NA	NA	This was grouped with OH hardening (BC and CC) and Undergrounding for the purpose of calculating RSE's		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	* Costs for this team have been grouped with Wildfire Mitigation Personnel
	2019 actual	NA	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	*	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

TABLE 29: Emergency Planning and Preparedness Initiatives

Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Speed per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	If New: Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Customer Support in Emergencies 5.3.9.3, 5.3.9.2, 5.3.10.1	2019 plan	*	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	* Costs for this program are included in Emergency Management Operations
	2019 actual		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Disaster and Emergency Preparedness Plan 5.3.9.4, 5.3.9.5	2019 plan	*	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	* Costs for this program are included in Emergency Management Operations
	2019 actual		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total		NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 29: Emergency Planning and Preparedness Initiatives

Initiative Activity	Year	Total per Initiative spend	Line Miles to be treated	Spend per treated line mile	Lignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	Memorandum account	In / Exceeding Compliance with regulations	Cite Associated rule	Comments
Adequate and trained workforce for service restoration (Emergency Management Operations - O&M 5.3.9.1, 5.3.9.6)	2019 plan	\$5,000	NA	\$0.289	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	\$4,727	NA	\$0.274	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$4,371	NA	\$0.253	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$4,371	NA	\$0.253	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$4,371	NA	\$0.253	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$13,113	NA	\$0.759	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
Adequate and trained workforce for service restoration (Emergency Management Operations - Capital 5.3.9.1, 5.3.9.6)	2019 plan	NA	NA	NA	NA	This control was grouped with Strategy for Minimizing Public Safety Risk During High Wildfire Conditions for purposes of RSE calculations		NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2019 actual	NA	NA	NA	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020	\$4,500	NA	\$0.260	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2021	\$0	NA	\$0.000	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2022	\$0	NA	\$0.000	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	
	2020-2022 Plan Total	\$4,500	NA	\$0.260	NA			NA	Existing	TY 2019 GRC	NA	Meets and exceeds	P.U. Code § 451	

Legend
 modified data

 new data

TABLE 30													
Initiative Activity	Year	Total per initiative spend	Line Miles to be treated	Spend per treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/new	Existing/ What Proceeding	Memorandum account	Exceeding Compliance with	Cite Associated rule
Community Engagement - See Table 26 Customer Communications and Mitigating the Public Safety Impact of PSPS Protocols													

TABLE 31: Change in Drivers of Ignition Probability Taking Into Account Planned Initiatives, For Each Year of Plan

Incident type by ignition probability driver		Near misses tracked (Y/N)?	Number of Incidents per year			Avg % probability of ignition per incident			Number of Ignitions per year		
			2020	2021	2022	2020	2021	2022	2020	2021	2022
Contact from object	All types of object contact	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Animal contact	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Balloon contact	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Veg. contact	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vehicle contact	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
All types of equipment / facility failure	All types	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Capacitor bank failure	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Conductor failure - all	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Conductor failure - wires down	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fuse failure - all	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fuse failure - conventional blown fuse	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lightning arrestor failure	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Splice/Clamp/Connector	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Switch failure	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Transformer failure	Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wire-to-wire contact / contamination		Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vandalism/Theft		Yes	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other											