

San Diego Gas & Electric Company's Quarterly Report on 2020 Wildfire Mitigation Plan for Q4 2020

December 9, 2020



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I. Introduction

Pursuant to Ordering Paragraph (OP) 8 of California Public Utilities Commission (Commission or CPUC) Resolution WSD-002, San Diego Gas & Electric Company (SDG&E or Company) submits its Quarterly Report (QR or Report) on its 2020 Wildfire Mitigation Plan (WMP) for Q4 2020, covering completed work for July 1 through September 30, 2020 and planned work for October 1 through December 31, 2020.¹ A copy of this Report is being provided to the Director of the Commission's Wildfire Safety Division (WSD) and is being served to the California Department of Forestry and Fire Protection (CAL FIRE) and the service list of Rulemaking (R.) 18-10-007.

In this QR, SDG&E addresses the two Class B Deficiencies related to its 2020 WMP, which are applicable to all electric utilities – Condition Guidance-9: Insufficient Discussion of Pilot Programs and Condition Guidance-10: Data Issues-General. SDG&E provides the information sought, and describes the steps it has taken or is taking to comply with the Class B deficiencies that the WSD identified in Resolution WSD-002.

SDG&E is submitting the spatial data required by Condition Guidance-10 (Confidential Appendix A hereto) to the WSD via the Commission's Kiteworks platform.²

¹ Resolution WSD-002, Guidance Resolution on 2020 Wildfire Mitigation Plans Pursuant to Public Utilities Code Section 8386 (June 11, 2020) at p. 45-46, Ordering Paragraph 8.

² Submission of the spatial data is consistent with the instructions provided by the WSD email *Guidance on Forthcoming GIS Data Submission for SDG&E* (December 8, 2020).

A. Condition Guidance-9: Insufficient Discussion of Pilot Programs

In its quarterly report, each electrical corporation shall detail:

- i. all pilot programs or demonstrations identified in its WMP;*
- ii. status of the pilot, including where pilots have been initiated and whether the pilot is progressing toward broader adoption;*
- iii. results of the pilot, including quantitative performance metrics and quantitative risk reduction benefits;*
- iv. how the electrical corporation remedies ignitions or faults revealed during the pilot on a schedule that promptly mitigates the risk of such ignition or fault, and incorporates such mitigation into its operational practices; and*
- v. a proposal for how to expand use of the technology if it reduces ignition risk materially.*

In its 2020 WMP, SDG&E identified 11 pilot programs/demonstrations, including: Covered Conductor, Distribution Infrared Inspections, Expanded Generator Grant Program (now referred to as the Generator Assistance Program), Advanced Protection – Falling Conductor Protection, Strategic Undergrounding, Drone Assessment, Circuit Ownership, Vegetation Management LiDAR, Ignition Management, Fuels Management, and Vehicle Tracking. SDG&E provides the following information for each pilot as required by this condition. The following information builds upon the information provided in SDG&E's WMP Quarterly Report submitted on September 9, 2020.³

Covered Conductor (WMP Section 5.3.3.3)

Status of Pilot: As stated in last quarter's report, SDG&E is piloting a new three-layered covered conductor (see Figure 1).

Figure 1
Three-Layered Covered Conductor



³ San Diego Gas & Electric Company's Quarterly Report on 2020 Wildfire Mitigation Plan for Q3 2020 (September 9, 2020).

On November 6, 2020, SDG&E energized its first covered conductor project of this type, hardening approximately 1.9 miles of line. Below is a photo of the completed hardening project.

Figure 2
Completed Covered Conductor Project



Results of Pilot: Given the recent completion of this project, evaluation of the effectiveness of the pilot will take some time because the covered conductor needs to be in operation to gather reliability performance data over time. After careful review and demonstrations, SDG&E utilized work methods to safely and successfully install this conductor type. The project is currently in the close out phase and SDG&E is currently performing quality assurance inspections of the project to ensure the quality of the construction. As stated in last quarter's report, SDG&E plans to measure effectiveness of this mitigation by comparing the reliability performance of the distribution lines before covered conductor was installed to the reliability performance after covered conductor was installed normalized by operating years for an apples-to-apples comparison. SDG&E plans to have a dedicated team monitor outages that are reported into the system related to the covered conductor. This dedicated team will be required to present covered conductor performance results during SDG&E's Electric Risk Analysis team meetings. The performance results should be able to identify the root cause of any outages associated with the covered conductor, identify mitigation techniques, and identify required improvements within SDG&E's Construction Standards.

Remedy of Ignitions/Faults Revealed During Pilot: N/A

Expanded Use of Technology: SDG&E expects the effectiveness of covered conductor to fall somewhere between the effectiveness of traditional overhead hardening, which has been measured to be approximately 50% effective at reducing faults and ignitions, and undergrounding lines, which has been approximately 99% effective at reducing ignitions. Given that the lines are covered, this should prevent some of the foreign object in line contacts that traditional hardening does not mitigate, and the new infrastructure means it should be equally as effective as traditional hardening at reducing equipment failure. Since these are overhead lines on above ground structures, they are still susceptible to vehicle contacts, vegetation contacts, and high winds, which makes this a less reliable alternative than undergrounding. SDG&E intends to increase covered conductor installations in future years and looks forward to measuring the effectiveness as covered conductor becomes a larger part of SDG&E's system.

Distribution Infrared Inspections (WMP Section 5.3.4.4)

Status of Pilot: At the beginning of the second quarter of 2020, SDG&E began piloting its new distribution infrared inspection program. This program uses the same infrared technology currently used for transmission and substation inspections with the intent to identify thermal hotspots in equipment and connections to detect potential issues that cannot be seen through traditional visual inspections. As of the end of November 2020, approximately 12,700 distribution structures have been inspected with this technology within Tier 3 of the HFTD. This represents about 17% of the distribution structures within the HFTD. At the current inspection rate and with recent efficiencies achieved, SDG&E is currently ramping up inspections through this pilot program to meet the planned inspection rate of 20% of HFTD distribution structures per year starting in 2021.

Results of Pilot: SDG&E remains in the early stages of implementation of the infrared program on its distribution system that enables identification of issues such as hot connections, which cannot be detected with traditional visual inspections. SDG&E continues to track findings per inspection figures and will utilize a model to estimate the effectiveness of these inspections relative to other inspection programs.

Remedy of Ignitions/Faults Revealed During Pilot: SDG&E's thermography team consists of individuals trained as linemen and electricians who evaluate the program's thermal results and structures. With their knowledge of the electrical system, thermography, and the results, the team is able to appropriately assess the potential risk for more accurate prioritization. The thermography team provides a report of their findings and prioritization to the distribution compliance team to include with their maintenance prioritization. In cases where larger potential concerns exist, a phone call directly to the responsible district will be made to provide an immediate assessment and repair where deemed necessary. This process ensures identified risks are appropriately prioritized. In areas where issues occur and further evaluation is required, the program has been reviewing the areas of concern to ensure no further issues exist.

Expanded Use of Technology: If the program proves successful, the timeline and resources being allocated would be further evaluated to find the optimal inspection cycle and if specific locations require an alternate cycle.

Expanded Generator Grant Program (WMP Section 5.3.3.11.2)

Status of Pilot: The Expanded Generator Grant Program, now known as the Generator Assistance Program (GAP), is an SDG&E pilot program which began in 2020 to expand its backup battery offerings beyond just Medical Baseline customers to a larger population of potentially vulnerable customers. The eligibility for this program is all customers in the High Fire Threat District (HFTD) who have experienced a previous Public Safety Power Shutoff (PSPS). More than 28,000 customers were invited to participate in 2020 and qualifying customers were offered a rebate of \$300 or more on a list of available portable gas generators through local and online retailers. If the customer is an active participant in the California Alternate Rates for Energy (CARE) low income program, they qualify for an additional \$150 rebate in their purchase, bringing the total instant rebate up to \$450 for CARE customers.

Eligible customers were sent an email or letter directing them to an instant rebate website that is managed by third party administrator. The customer validates their eligibility through the website and is then issued a coupon for the rebate which can be used at selected retailers for the list of eligible gas or dual-fuel (gas/propane) portable generator models. While the 2020 GAP Program is winding down, eligible customers may still take advantage of the rebate offer until December 31, 2020.

SDG&E generally expects the number of customers eligible for this program to grow in 2021.

Results of Pilot: To date, 1,832 customers have downloaded a generator rebate coupon, including 230 CARE customers. Of these customers, 455 have purchased a generator with 76 of the purchases being CARE customers. SDG&E plans on surveying program participants in February 2021 to learn more about the effectiveness of this program at enhancing customer resilience.

Remedy of Ignitions/Faults Revealed During Pilot: N/A

Expanded Use of Technology: SDG&E plans to expand this program in 2021 to include customers with well-water pump backup needs.

Advanced Protection – Falling Conductor Protection (WMP Section 5.3.3.2)

Status of Pilot: The Falling Conductor Protection (FCP) pilot is still in the stages of strategic deployment within Tier 3 of the HFTD under “test mode” operation. In this mode, the Advanced Protection devices utilized for FCP will operate as designed, identify potential broken conductor conditions, and send various tripping signals and alarms to their respective endpoints, without actually operating any devices. This test mode is specifically designed to gauge the performance of this form of broken wire detection platform without incurring any

unnecessary negative impacts to reliability. SDG&E continues to have six distribution circuits in test mode operation. In last quarter's report, SDG&E indicated that it had planned an additional five distribution circuits for test mode operation, however, due to fire season and weather conditions, work in Tier 3 of the HFTD was often cancelled in the latter part of 2020. These five circuits are currently staged and ready for commissioning early 2021. As stated in its 2020 WMP, SDG&E plans to have FCP enabled on all HFTD Tier 3 circuits by 2023.

In support of meeting this goal of deploying FCP in HFTD Tier 3 by 2023, SDG&E has finished construction on six of eight substations and five of six circuits that were planned for 2020 as a part of the advanced protection program. The following figures are examples of a substation before and after the upgrades as well as the FCP components.

Figure 3
Existing Substation Equipment to be Upgraded and/or Replaced

Substation Upgrades - Before



Oil Circuit Breakers



Analog Relay Equipment

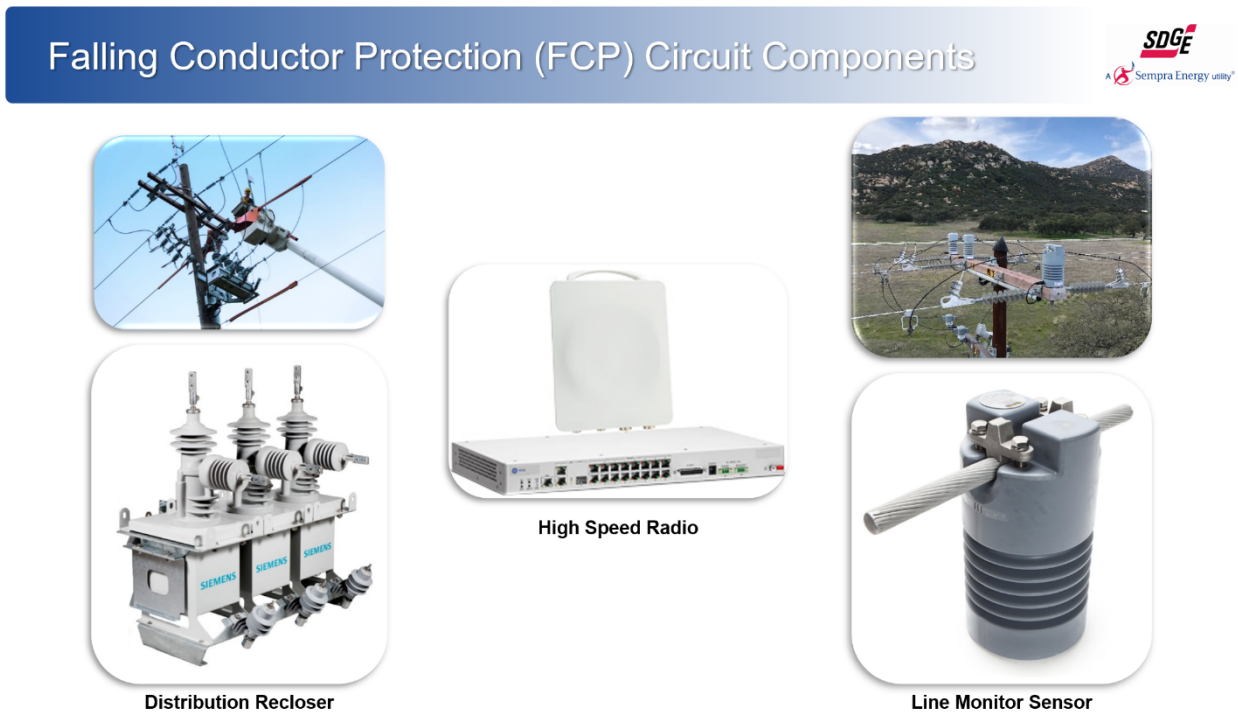


Aging Remote Terminal Units

Figure 4
Newly Installed Substation Advanced Protection Equipment which supports the FCP Pilot



Figure 5
Newly Installed Distribution Advanced Protection Equipment which supports the FCP Pilot



SDG&E is also implementing a combination of leased and private LTE to support the FCP use case. Currently, a combination of these technologies is being deployed and tested on existing Borrego area SCADA and protection devices with ongoing testing for improved FCP communication on three existing distribution circuits. As stated in its WMP, SDG&E believes LTE to be the optimum technology to support FCP.

Results of Pilot: FCP has been shown to operate correctly and sufficiently in both the lab and field commissioning environments. Proper design, field communication infrastructure, and commissioning expertise has led to the successful deployment of the six test mode circuits with five more on the way in early 2021. Currently, SDG&E is measuring performance by the amount of broken wire events that occur within the zone of protection of FCP circuits. If a broken conductor were to occur on a circuit operating in test mode, SDG&E would measure performance by the reaction of the Advanced Protection devices to that event, and whether or not the devices would have acted to isolate the event. To date, broken conductor events have not occurred in a FCP zone of protection, thus ultimate field performance measurements have not yet been realized.

Remedy of Ignitions/Faults Revealed During Pilot: SDG&E will use the data it receives from FCP broken conductor events to perform incident reviews as it currently does with all other protection operations throughout the system. The event record data produced by Advanced Protection devices will assist SDG&E subject matter experts in performing detailed event analysis to make recommendations to the various SDG&E planning, design and construction organizations in situations where material improvements can be made outside of the protection scheme operation.

Expanded Use of Technology: SDG&E will continue to expand this technology throughout its service territory with a focus on the wildfire prone areas first. As noted above, SDG&E is planning to deploy this technology in the HFTD Tier 3 by 2023. Once that is complete, SDG&E plans to deploy the technology within the HFTD Tier 2. After HFTD circuits are covered, SDG&E will look to target the non-HFTD circuits so this technology may be utilized for general public safety use cases, not just for wildfire risk reduction.

Strategic Undergrounding (WMP Section 5.3.3.16)

Status of Pilot: As of November 30, 2020, SDG&E has energized total of 17.5 miles of underground within the HFTD including 6.5 miles from the Strategic Undergrounding Program and 11 miles from the CNF program. SDG&E remains on target to achieve its operational goal to install between 20 and 30 miles of underground line in the HFTD in 2020. The completion of this goal depends largely on red flag conditions during the month of December that could impact SDG&E's ability to perform construction safely.

Overall, the Strategic Undergrounding Program has made significant progress, and there are only two projects remaining in construction and pending energization due to red flag conditions between November and December. These two projects are the C75 (DUG to Jamul Tribe) and

C1030 Phase 1 (Skyline Ranch). Both projects are estimated to be energized by end of the December. A status summary of the projects is provided in the table below.

Table 1
Summary of Strategic Undergrounding Program Projects

Energization Year	Circuit Number	Project Description	Status	Design % Complete	Construction % Complete	Status Notes	Actual UG Miles
2020	C1021/C352	Quick Win- Lilac	Energized	100%	100%	Line energized on 10/24/20. Pending as-builts	0.20
2020	C1030	Phase 1 (Skyline Ranch)	In Construction	100%	75%	Civil Complete, Electrical 50% Complete. Delays due to RFW.Outage 12/10 through 12/31	6.63
2020	C221	Phase 1 (Cape Horn)	Energized	100%	100%	Line was energized on 8/12/20, Elem. School was energized on 9/20/2020.	0.53
2020	C221	Phase 2 (Banner Rd)	Energized	100%	100%	Line Energized on 8/19, pending as-builts	0.90
2020	C357	Quick Win Job#1 and Job#2-- E. Victoria Rd	Energized	100%	100%	Job 1 & 2 energized on 9/4/20, pending as-builts	
						RFS and job #3 were separated from original package due pending Caltrans permit	0.83
2020	C75	DUG to Jamul Tribe	In Construction	100%	44%	50% energized, final outage 12/21/20.	6.80
2020	C754	Quick Win- Vallecitos	Energized	100%	100%	Line energized on 5/5/20. Pending as-builts	0.30
2021	C1458	Quick Win PH.1A W. Victoria Rd	In Construction	100%	6%	Delayed in design due to design issues. Civil 10% complete. Plan to energize 2021 2021	2.30
2021	C221	DUG PH.2 (ST to Dudley's)	In Design	95%	-	Pending Caltrans Permit. Pushed construction to 2021	0.41

Results of Pilot: As SDG&E discussed in its previous quarterly report, undergrounding is highly effective, having been measured at approximately 99% effective, with the only ignitions caused by vehicle contacts with pad mounted equipment. SDG&E was interested in seeing the cost per mile associated with undergrounding pilot projects to provide cost baseline for the program. While SDG&E forecasted undergrounding costs to be \$3.1M per mile, SDG&E's preliminary actual cost per mile on the first energized lines shows an average of approximately \$2.6M per mile. The cost varies depending on the specific project needs and requirements (i.e., materials, design, construction, and field conditions). It should be noted that the cost per mile provided in the table below is based on combination of current invoices posted to date and forecasted cost to account for missing or pending charges from design and construction firms. There may be additional trailing charges such as field change orders that are pending negotiations and clarifications. In addition, although these projects are energized and are in the closeout phase, they are still pending final as-builts. An updated overall cost per mile may be provided in the next quarterly report.

Table 2
Strategic Undergrounding Program Projects Cost Per Mile

Project	Actual UG Miles	Overall Cost	Overall Cost/Mile
C221 PH.1 Cape Horn	0.53	\$1,280,501	\$2,416,040
C221 Ph.2 Banner Rd	0.90	\$1,331,698	\$1,479,664
C1021 Lilac	0.20	\$916,307	\$4,581,535
C754 Quick Win - Vallecitos	0.30	\$459,774	\$1,532,580
C357 E. Victoria	0.83	\$2,422,183	\$2,918,293
Average			\$2,585,622
<i>Note: Based on direct cost charges</i>			

Remedy of Ignitions/Faults Revealed During Pilot: NA

Expanded Use of Technology: SDG&E will continue to use the undergrounding of overhead lines as a mitigation alternative in the areas of extreme risk impact, where a strategy of risk elimination is more prudent than a strategy of risk mitigation efficiency, and in areas where small amount of undergrounding can provide significant PSPS mitigation benefits to SDG&E's customers.

Drone Distribution Assessment (WMP Section 5.3.4.9.2)

Status of Pilot: This pilot was initiated in late 2019 with a goal of using drones to take pictures of every distribution structure within the HFTD Tier 3 by 2020. The drone distribution assessment pilot program has flown and assessed 37,310 structures of the nearly 40,000 overhead distribution structures within the HFTD Tier 3.

Results of Pilot: An updated quantitative analysis for this program is provided in the table below.

Table 3
Drone Distribution Assessment Results

Year	Inspection Count	Priority	Count
2019 - 2020 (Pilot in Tier 3)	37,310	Emergency	132
		Priority	1,823
		Non - critical	7,522
Issue Rate			0.25
Drone faults avoided			31
Drone ignitions avoided			.653
<i>proposed cycle</i>			3-5

Remedy of Ignitions/Faults Revealed During Pilot: Issues identified by drone assessments are categorized as either emergency (0-3 days) or priority/non-critical (30 days to 1 year) and are remediated within those time frames.

Expanded Use of Technology: Based on the findings described in the table above, SDG&E plans on continuing this drone program beyond the pilot phase. At this point, SDG&E plans to expand the drone program to complete the Tier 2 of the HFTD in the next two years, as well as the portions of its transmission system within the HFTD. Based on the results, SDG&E will determine an appropriate cycle for the drone program that balances the benefits of the inspection versus the cost of the program.

Circuit Ownership (WMP Section 5.3.4.9.3)

Status of Pilot: Since last quarter's report, the circuit ownership pilot has been completed. The program provides the opportunity for SDG&E's field employees and management of field employees to submit circuit vulnerabilities via a Mobile Data Terminal (MDT) program or mobile application (both iOS and Android). Specifically, this program facilitates supplemental submission of circuit vulnerabilities (in addition to the existing inspection programs) so that they can be timely repaired, to prevent a potential ignition and minimize the risk of wildfire. SDG&E has released the program system wide and is currently utilizing the software.

Results of Pilot: SDG&E has successfully implemented the pilot over the last quarter. SDG&E's mobile application enables all employees to submit supplemental inspections if they see an issue with SDG&E assets that needs to be addressed. Future forecasts for this program represent an estimate of repair work only, as there are no costs associated with inspections or software updates.

Remedy of Ignitions/Faults Revealed During Pilot: When issues are identified through the mobile application, they are categorized within two days (unless identified as an imminent danger or hazard) as either a priority, emergency, or non-emergency. This prioritizes the prompt follow up of those priority and emergency submissions.

Expanded Use of Technology: N/A

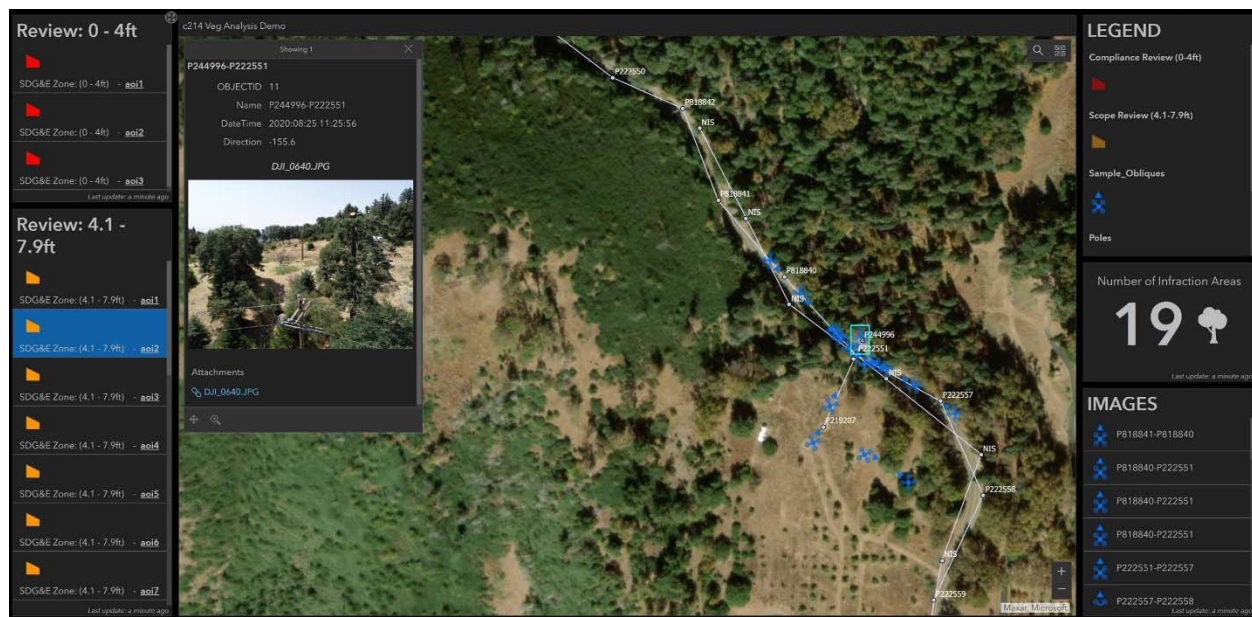
Vegetation Management LiDAR (WMP Section 5.3.5.7)

Status of Pilot: SDG&E has initiated the use of LiDAR as a pilot program in 2020 to enhance its tree inspection activities. SDG&E began the pilot on a distribution circuit located on Palomar Mountain. To date, SDG&E has acquired LiDAR data on 100% of its overhead electrical facilities located within the HFTD. The LiDAR data is currently being analyzed and formatted to create three-dimensional modeling of the tree canopy surrounding the facilities. The information can be used to corroborate SDG&E's tree inventory data and strike potential, and to identify trees that may need further mitigation.

Results of Pilot: SDG&E recently received the calculated clearance results of the LiDAR analysis on the Palomar pilot, which identified some tree-to-line clearances that required validation for

minimum clearance compliance. In October of 2020, SDG&E Certified Arborists visited the field to review the analysis and validate the LiDAR findings. The field validation found that most vegetation clearance issues identified via the LiDAR analysis were accurately reported. Some of the LiDAR findings initially thought to identify non-compliant conditions were associated with secondary voltage lines where there are no minimum clearance requirements. With this new information, SDG&E is working to refine the LiDAR analysis techniques utilized to better distinguish between primary and secondary lines to correctly apply the corresponding clearance requirements. In 2021, SDG&E plans to test this refined technique on additional circuits to gather more data on the effectiveness of LiDAR. If proven accurate, the LiDAR will be a valuable QA/QC tool to ensure proper radial clearance is obtained from vegetation to conductor.

Figure 6
Example of LiDAR Image



Remedy of Ignitions/Faults Revealed During Pilot: No clearance violations or immediate trim needs were identified as part of this pilot. The zero to four (4) foot clearances identified above were on covered secondaries and services (low voltage lines). If clearance issues were identified, they would be resolved per the normal vegetation inspection and follow up trim process.

Expanded Use of Technology: SDG&E utilizes LiDAR for transmission and distribution design as a core part of the design process. Based on the current progress of this pilot, SDG&E is seeing potential use cases as a QA/QC tool for vegetation management inspections. Pending changes to the LiDAR analysis techniques to accurately distinguish between primary and secondary lines, this pilot could be expanded for use as a QA/QC tool on vegetation management inspections.

Ignition Management Program (WMP Section 5.3.7.4.1)

Status of Pilot: SDG&E's Ignition Management Program (IMP) is managed by a Fire Ignition Management Program Coordinator. The purpose of this pilot program is to identify areas of improvement to reduce the risk and occurrence of fire ignitions. The IMP has identified databases throughout the Company, and it is working to consolidate the information into a single source in an effort to utilize the information to conduct analytics and identify modes of failure as well as mitigation owners. In addition, the IMP follows up on all reported ignitions and equipment failures and is conducting an analysis to determine the cause of each ignition. The IMP team works closely with SDG&E engineering subject matter experts (SMEs) by providing site analysis data to support equipment failure analysis. This data is used in conjunction with the data collected from other internal stakeholders for use in determining failure modes and future analytics.

Results of Pilot: The program continues to progress toward broader adoption and is based on the data gathering process that has been put in place and continues to be refined. Data, along with the events initiating the data, are being documented then filtered through the program and the program manager. So far in 2020, the program has documented and followed up on 197 reports with findings being communicated to the appropriate SME.

Remedy of Ignitions/Faults Revealed During Pilot: The process for reducing the frequency and consequence of ignitions is constantly being refined, and the program has established the initial path for analysis to be communicated to mitigation owners. SDG&E plans to integrate the findings of the program into its decision-making process for WMP risk reduction and hardening initiatives.

Expanded Use of Technology: When ignitions or near ignitions have been identified through the IMP processes, SDG&E's Electric Engineering SME failure analysis team is notified, and a systematic analysis is conducted to determine the cause of the failure. When the cause of the failure is determined, the mode of failure is tracked for trends and reported to the mitigation owner to remedy the failure. The IMP is building a process to analyze failures that will include a Failure Mode Effect Criticality Analysis to further analyze data collected in the IMP process.

Fuels Management (WMP Section 5.3.5.5)

Status of Pilot: SDG&E continues to conduct in person audits of the award recipients and the work is currently 100% complete with the goal of completion before Q4 2020. SDG&E is currently working to award future grants by the end of 2020.

Results of Pilot: Success of this pilot is measured based on the completion of the projects associated with the award recipients. Additionally, establishing a selection process based on the scoring criteria and strengthening the fire defense of the service territory has made the pilot a success.

Remedy of Ignitions/Faults Revealed During Pilot: This program is a partnership with the community that reduces the consequence of ignitions. Additionally, the program increases the resiliency of the areas where work is performed by reducing the impact to the utility infrastructure and the surrounding communities.

Expanded Use of Technology: After fuels reduction work is completed, the program is gathering imagery and supplemental information to support future decision making.

Vehicle Tracking (WMP Section 5.3.9.4.7)

Status of Pilot: SDG&E completed the pilot project installation of the Verizon Telematics vehicle tracking solution on 240 vehicles within Gas Operations, Fleet Services, and Electric Regional Operations in March 2020. SDG&E collected initial baseline data from the pilot project and enacted reporting standards that focus on vehicle speeding metrics and identified a handful of other metrics that will be targeted in the future. SDG&E is actively deploying this technology to the remaining Fleet Assets with 1,337 additional assets complete. SDG&E expects the entire fleet will be complete by year end 2020.

Results of Pilot: SDG&E prioritized employee safety metrics, namely speeding reduction. SDG&E is pleased to report that there has been a 90% reduction in speeding after enacting reporting standards on this metric. SDG&E will continue to focus on this metric as it expands the technology to additional vehicles. Additionally, SDG&E will work on improving other areas, including: idle time, distracted driving, and improved maintenance response times. Tracking employee location in the Tier 2 and 3 High Fire Threat Districts is critical to ensuring their safety and support. As an example, during the recent Valley Fire, SDG&E was able to utilize the vehicle tracking technology to monitor employees entering evacuation areas in support of fire services. SDG&E was able to validate vehicles entering these areas were purposeful and could track these vehicles movement throughout the evacuation areas to ensure they remained at a safe distance from the fire.

Remedy of Ignitions/Faults Revealed During Pilot: Remedies of ignitions include the real-time ability to identify the closest appropriate resource during PSPS and other weather-related events to safely assess conditions for de-energization and re-energization reducing the risk of ignitions/faults during these conditions.

Expanded Use of Technology: Expanding this project fleet wide will provide greater situational awareness and resource management during weather, wildfire, and PSPS events. SDG&E anticipates all fleet vehicles will have this technology by end of year 2020; select trailer assets will be complete Q2 2021. A next level technology is Sole Worker Tracking, which would provide real-time situational awareness of employee tracking once they exit their vehicle in the HFTD Tier 2 and 3 areas, again improving employee safety and resource management toward ignition risk reduction.

B. Condition Guidance-10: Data Issues - General

Electrical corporations shall ensure that all future data submissions to the WSD adhere to the forthcoming data taxonomy and schema currently being developed by the WSD. Additionally, each electrical corporation shall file a quarterly report detailing:

- i. locations where grid hardening, vegetation management, and asset inspections were completed over the prior reporting period, clearly identifying each initiative and supported with GIS data,*
- ii. the type of hardening, vegetation management and asset inspection work done, and the number of circuit miles covered, supported with GIS data*
- iii. the analysis that led it to target that specific area and hardening, vegetation management or asset inspection initiative, and*
- iv. hardening, vegetation management, and asset inspection work scheduled for the following reporting period, with the detail in (i) – (iii).*

SDG&E continues to support the WSD’s desire to develop and require a consistent data taxonomy and schema for all electric utilities to use for WMP data submissions. As the WSD has acknowledged in its August 21, 2020 Draft Geographic Information System (GIS) Data Reporting Requirements and Schema for California Electrical Corporations (GIS Data Standards), the “electrical corporations are at different stages of their data journeys and employ differing business practices, which may impact certain electrical corporations’ ability to fully comply with the requirements in [the GIS Data Standards]” and that the WSD’s employing a phased approach to full implementation of their GIS Data Standards.⁴

As explained in its first Quarterly Report, SDG&E’s source data exists in multiple and disparate information systems. SDG&E has taken steps to create the capability to extract, transform, and load this data into a standard schema, which will be a significant and costly effort as the source systems contain hundreds of tables, tens of millions of rows, and consist of gigabytes of data. To prepare this Quarterly Report, SDG&E again used a manual, time and resource intensive, and burdensome process to gather as much as the requested data as possible, in the specific format outlined in the GIS Data Standards. SDG&E continues to investigate an investment in a technical data solution that would consolidate data from multiple sources into a single database. This data project is expected to be a longer-term solution however, and SDG&E expects to continue to perform this manual data gathering approach for this report and subsequent quarterly reports in the near future.

Please see Confidential Appendix A – Guidance 10 SDGE_2021209.gdb, which is a geodatabase file containing the available SDG&E’s WMP reportable data in the schema provided by WSD.⁵ In

⁴ GIS Data Standards at p. 6. Available at: ftp://ftp.cpuc.ca.gov/WSD/GISguidance/WSD%20GIS%20Data%20Reporting%20Requirements_DRAFT_20200821.pdf

⁵ Consistent with the instructions provided by the WSD, this file is being submitted via the CPUC’s Kiteworks platform.

addition, Appendix B – Guidance 10 Data Status Report provides line by line accounting of the data included within this Report, as well as provides an explanation of data gaps and timelines for gathering data not currently included in Confidential Appendix A.

As explained in last quarter's report, SDG&E's approach to prioritizing wildfire mitigation work in 2020 was motivated by multiple drivers and varied across different types of projects:

- For overhead hardening, the work performed was prioritized through SDG&E's Wildfire Risk Reduction Model (WRRM) and targets high risk assets in the areas of highest wildfire consequence, typically areas within Tier 3 of the HFTD and some areas within Tier 2 of the HFTD.
- SDG&E's underground programs were prioritized to both reduce fire risk and maintain power to community centers and essential customers during PSPS events.
- SDG&E's additional sectionalizing and weather station programs were prioritized in order to mitigate PSPS and were executed in both the HFTD and the wildland urban interface (WUI).
- The complete analysis on high risk species for enhanced vegetation management was provided in last quarter's report under Condition SDGE-14.

For the engineering and construction of prioritized work, SDG&E begins all prioritized work planned for a given year simultaneously. Depending on project specific constraints however, it is possible for lower priority projects to be completed before higher priority projects. The Cleveland National Forest (CNF) fire hardening project is a clear example of this situation. It is one of the highest risk areas in SDG&E's service territory, but due to permitting constraints, it has taken many years to obtain approval to fire harden lines within CNF. In contrast, lower priority jobs that have less project specific constraints can be designed and constructed within a one-year time frame.