

**SAFETY POLICY DIVISION DATA REQUEST**  
**SPD-DR-002**  
**SDG&E/SOCALGAS 2021 RAMP REPORTS- A.21-05-011/014**

**DATE RECEIVED: JUNE 21, 2021**  
**DATE RESPONDED: JULY 7, 2021**

**Question 1:**

“When performing the risk assessment for Wildfire, SDG&E identified potential leading indicators, referred to as drivers or triggers” “A wire down can result from a variety of factors, many of which are outside of SDG&E’s control.” Page 1-10

- 1.1 What are some of the more common factors?
- 1.2 Though many are outside SDG&E’s control, what, if anything, can be done to reduce or minimize the occurrence?
- 1.3 How is this kind of occurrence detected?
- 1.4 What is a typical amount of time to locate and repair the issue?

**SDG&E and SoCalGas Response 1:**

- 1.1 Some of the more common factors of a wire-down that are outside of SDG&E’s control include vehicle contact with SDG&E owned poles and equipment, Mylar balloon contact with SDG&E owned conductor and equipment, and animal contact with SDG&E owned conductor and equipment.
- 1.2 SDG&E’s grid hardening initiatives (including overhead bare conductor distribution hardening, covered conductor, and strategic undergrounding) can reduce the occurrence of wire down events. SDG&E’s communication efforts also include a focus on the operational and public safety dangers associated with Mylar balloons making contact with electrical equipment and the need to dispose of them properly.
- 1.3 A wire down event is detected when SDG&E protective equipment such as fuses or switches operate to isolate the fault. SDG&E personnel become aware of a wire down occurrence on a real-time basis via the Network Management System (NMS). NMS will alert the operators immediately when the isolating device is connected to SCADA and uses information such as non-responsive meters and customer calls reporting an outage when the isolating device is not connected to SCADA.
- 1.4 The average response time for an Electrical Troubleshooter to respond to an event, which includes a wire down event, is 29 minutes during normal working hours (*i.e.*, between 5:30 and 21:00), and 38 minutes during non-working hours (*i.e.*, between 21:00 and 05:30). After the Electric Troubleshooter locates the damage and makes sure the area is safe, a repair crew will be called to the scene. The repair time can vary greatly depending on the amount of damage and extent of required repairs. Repairing a downed single-phase conductor can take as little as 60 minutes once the repair crew arrives; however, an emergency pole-replacement and three-phase conductor repair could take approximately 8 hours including time for crew response, material gathering, travel, and repairs.

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**Question 2:**

**“DT.3 – Weather-Related Failure of SDG&E Equipment:** Weather plays a large part in the potential failure of SDG&E equipment. Excessive wind, lightning, and exposure to weather over time can degrade the integrity of the electrical components and lead to failure of one or more of the electrical parts, causing a failure of the conductor.? Page 1-10

**“DT.8 – Extreme Force of Nature Events:** SDG&E’s overhead electrical facilities are fully exposed to the elements. Significant weather and wind-related events can cause a variety of problems related to equipment failure and downed conductors. Also, continual exposure to natural elements can degrade or weaken key components, conditions that may not be found until the following scheduled inspection and repair cycle.” Page 1-11

- 2.1 DT.3 and DT.8 do not seem to be significantly different from each other. They both cover significant wind events and degradation of components due to exposure over time. What is the difference between the two?
- 2.2 It seems to me it would be best to have one focus on significant weather events, such as wind and lightening, and the other focus on sun, rain, rot, and other deterioration from exposure over time. Comments?

**SDG&E and SoCalGas Response 2:**

- 2.1 DT.3 is intended to capture specific events that can affect the system such as strong winds and storms, while DT.8 is meant to capture general deterioration of facilities that may not be tied to a specific event but rather the system’s continuous exposure to the elements.
- 2.2 The proposed differentiation between these two drivers aligns with SDG&E’s identification and use of these two drivers.

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**Question 3:**

Potential consequences on left side of the bow tie:

- PC.1 – Serious injuries and/or fatalities;
- PC.2 – Damage to third party real and personal property;
- PC.3 – Damage and loss of SDG&E assets or facilities;
- PC.4 – Operational and reliability impacts;
- PC.5 – Claims and litigation; and
- PC.6 – Erosion of public confidence.

These potential consequences were used in the scoring of Wildfire that occurred during the development of SDG&E's 2020 Enterprise Risk Registry. Page 1-12

- 3.1 Should we also consider damage or loss of environmental, cultural, and/or historical resources?
- 3.2 PC.2 and PC.3 imply that these losses, while devastating, can be replaced. Certain environmental, cultural, and/or historical resources may not. E.g.: Endangered species (flora and fauna), historical buildings, structures, and sites. HFTDs in East San Diego County have many of these kinds of assets.
- 3.3 Suggest adding Environmental, Cultural, and/or Historical Assets as PC.7.

**SDG&E/SoCalGas Response 3:** This reply in full is supplemental to the partial reply provided July 7.

- 3.1 SDG&E is open to exploring additional potential consequences losses, subject to the availability of data and the ability to make reliable estimates on such losses.
- 3.2 See response to 3.1.
- 3.3 See response to 3.1.

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**Question 4:**

“Currently, the financial consequence is used as a proxy for human safety, due to the strong connection between safety and homes destroyed and because large fires are rare, giving a small sample size to find correlations between location and safety implications.” Page 1-14

- 4.1 Please elaborate on the statement “large fires are rare”. Other parts of the document and common consensus is that large fires are happening more frequently on a larger scale.
- 4.2 What is the criterion for determining if a fire is “large?”
- 4.3 Does this statement imply that small fires are frequent?
- 4.4 Is a large fire the same as a “catastrophic” fire (damage resulting in over \$100m, significant damage, and potential safety consequences)?

**SDG&E/SoCalGas Response 4:** This reply in full is supplemental to the partial reply provided July 7.

- 4.1 The term “rare” in this context is used to qualitatively categorize the frequency of large fires that are associated with SDG&E equipment. For example, there have been zero large fires associated with SDG&E equipment since 2007. SDG&E does believe that large fires are possible to occur under many circumstances and need to be mitigated against.
- 4.2 For analytical purposes, SDG&E did not define the term “large” and its use is meant to be a subjective delineator between fires that do not cause destruction to multiple structures and those that do. Nearly all of ignitions associated with SDG&E equipment result in no structural damage and burn very small areas, e.g., not exceeding a single acre.
- 4.3 SDG&E reports approximately 20-25 ignitions per year, and since the reporting began several years ago, each of those ignitions can be considered a small fire.
- 4.4 See the responses to 4.1 and 4.2. The term “large fire” was not meant to be a specific term for wildfire risk. Within SDG&E’s modeling, the term “significant fire” is used to represent highly damaging fires. There is no specific size or destruction level associated with the term “large fire.”

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**Question 5:**

“[T]here are two separate risk scores that SDG&E measures for this Wildfire risk: (1) wildfire risk, and (2) PSPS impacts. The overall risk evaluation, referred to as the TWRS, is the sum of the risk scores for wildfire risk and PSPS impact. All RSE scores presented in this RAMP chapter use the TWRS as their basis. Some mitigations in SDG&E’s RAMP Wildfire chapter reduce the wildfire risk, while other mitigations reduce the PSPS impacts, and some mitigations lower the risk for both wildfire risk and PSPS impacts. “ Page 1-15 “The evaluation of PSPS impacts is still in the early stages of development, and SDG&E’s framework will continue to evolve in quantifying and understanding the impacts of PSPS to inform strategies for wildfire mitigation.” Page 1-16.

- 5.1 I do not see anywhere in this document where impacts and risks of PSPS events are discussed. Is this addressed elsewhere?
- 5.2 How does SDG&E plan to address the impacts and risks that PSPS events have on safety, society, and the economy. For example, residences, businesses, critical infrastructure providers, etc.?

**SDG&E and SoCalGas Response 5:**

5.1 The detailed explanation of how PSPS impacts are evaluated were not included in the RAMP Report but are included in SDG&E’s 2021 Wildfire Mitigation Plan (WMP). The following excerpt from the 2021 WMP describes this assessment<sup>1</sup>:

To calculate the PSPS impact portion of the TWRS, SDG&E used recent data such as the number of PSPS activations, the number of customers affected, and duration of the outages for each customer. SDG&E recognizes that the impact of a PSPS is not the same on all customer types and that there are certain customer groups that may suffer higher consequences than others in a PSPS event. As such, SDG&E uses three categories to represent different types of customers as follows:

- **Critical:** This includes urgent customers whose mission supports regional emergency response (e.g., police, fire department, hospitals) as well as essential customers who are essential to public health, safety, and security as defined by the CPUC (e.g., public utilities, communications providers, water service providers, transportation)
- **Medical Baseline:** Residential and other customers with a qualifying medical condition or medical device usage (e.g., dialysis machine)
- **Non-Critical:** All other customers that do not fall in either the critical or medical baseline categories.

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<sup>1</sup> SDG&E 2021 WMP Update, pg. 29.

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**SDG&E and SoCalGas Response 5:-Continued**

To estimate the heightened impact of the customer categorizations in respect to a non-critical customer, each customer group is evaluated on the risk attribute categories similar to those as defined in the MAVF (i.e., safety, financial, reliability, stakeholder impact). The key difference is that unlike the definition of reliability used in RAMP (e.g., gas meters out, curtailment, SAIDI, SAIFI), reliability is measured as the number of customers losing access to key services (e.g., utilities, healthcare). Since the critical categorization represents a spectrum of different customer types, specific customer types are used as proxies. For example, the impact on “urgent” customers is estimated by using an outage on a communications tower as a proxy.

A combination of industry research and subject matter expertise is used to, by attribute, bucketize the range of impact values and correspond them to an attribute consequence weighting. As shown below, each customer category is evaluated, using reasonable worst-case consequence conditions, and assigned a consequence multiplier for each risk attribute.

**Figure 1: Distinguishing Customer Impacts by Type**

Customer Type	Data Assumptions / Proxys	Safety			Financial			Reliability			Stakeholder Impact
		Initial Score	Impact Multiplier	Total Impact	Initial Score	Impact Multiplier	Total Impact	Initial Score	Impact Multiplier	Total Impact	Total Impact
Non-Critical	<b>Assumption:</b> 80% Residential, 10% Commercial, 10% Industrial	1	1	1	1	1	1	1	1	1	1
Critical	<b>Proxy:</b> Communications Tower	20	1	20	10	1	10	30	1	30	30
Medical Baseline		5	1	5	1	1	1	1	1	1	5

The baseline PSPS impact, per attribute, is calculated using the total number of downstream customers. The per attribute customer value is determined by multiplying the downstream customer count of each customer category by its value and then taking the sum. For each attribute, the baseline risk value is multiplied by the ratio of customer impact to the total number of customers. The framework of valuing the varying PSPS impacts on different customer types is still in early development and will continue to be iterated and improved upon with input from both internal and external stakeholders.

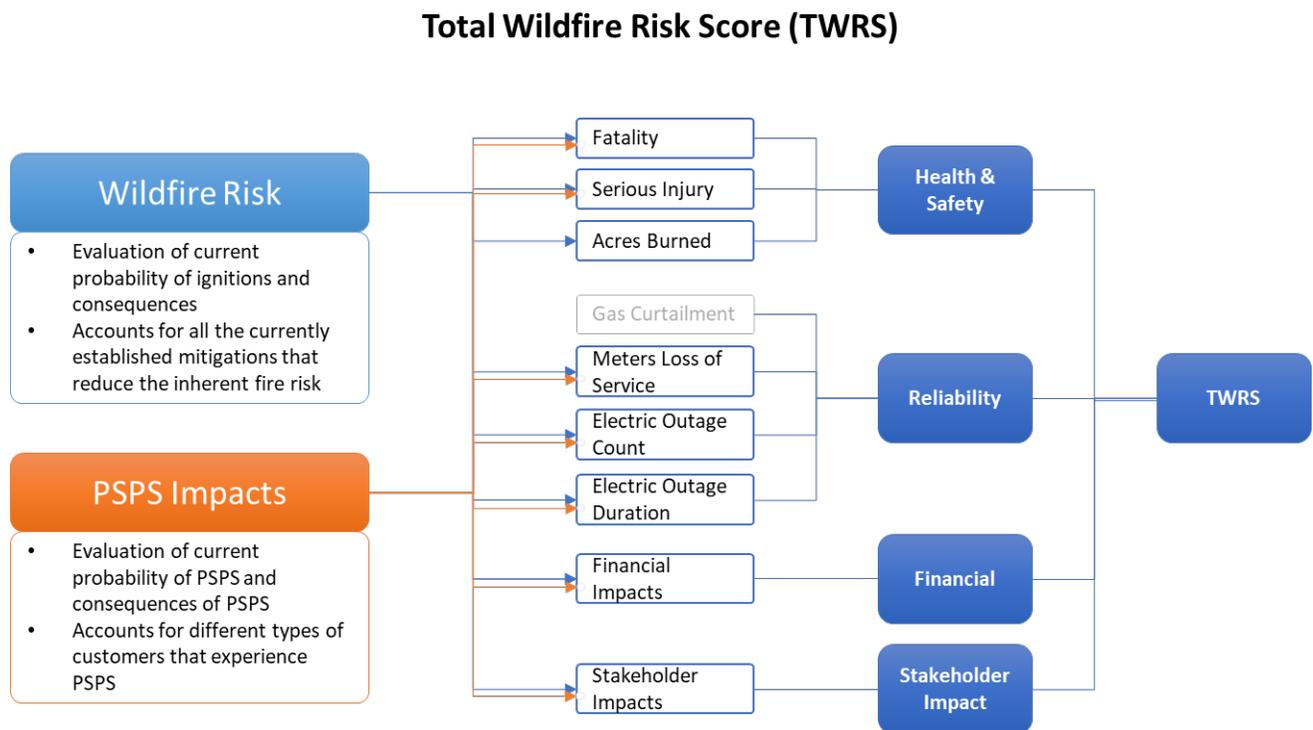
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**SDG&E and SoCalGas Response 5:-Continued**

The figure below is a visual representation showing how the wildfire risk and PSPS impact are evaluated using the common Risk Quantification Framework described above.

**Figure 2: Evaluation of Wildfire Risk and PSPS impact Using RQF**



5.2 As described in SDG&E’s various initiatives, there are various measures that SDG&E implements to minimize PSPS impacts including its situational awareness initiatives, grid hardening efforts as well as customer-focused programs that are aimed at enhancing customer resiliency to reduce impacts of outages on those customers.

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**Question 6:**

“Microgrids are designed to meet the identified customers’ load needs for the duration of a PSPS event. While other solutions may be the preferred approach from a wildfire risk reduction perspective (e.g., undergrounding), those options may not be technically feasible or the most cost-effective solution.” “Additionally, customers may be located in a geographical area that makes digging for undergrounding infeasible, whether from hard rock or from an environmental or cultural perspective. When these situations arise, SDG&E evaluates other solutions to reducing the PSPS impacts to customers, which can include designing and building a microgrid that can be electrically isolated during a PSPS event and offer reliable electric service to customers and allow SDG&E to use de-energization of power lines as a wildfire risk mitigation solution.” Page 1-30

- 6.1 How are microgrids classified in regard to PSPS response or mitigation?
- 6.2 Are they considered permanent PSPS mitigation (grid hardening) on the same level as installing covered conductor or undergrounding?
- 6.3 Are they considered temporary mitigation such as providing temporary generators to households?
- 6.4 If they may be considered both way, what is the distinction?
- 6.5 How do the Resiliency Assistance Program, Standby Power Program, and Microgrids differ from each other?

**SDG&E and SoCalGas Response 6:**

- 6.1 Microgrids are considered as a mitigation to PSPS events by providing electric service to customers when the normal power source is de-energized for safety.
- 6.2 Microgrids would be considered a permanent mitigation.
- 6.3 Microgrids are not considered temporary mitigation.
- 6.4 N/A
- 6.5 The main differences between the Resiliency Assistance Program and Standby Power Program versus Microgrids are the scope and ownership of the mitigation. The Resiliency Assistance Program and Standby Power Program utilize generators or batteries sized to power a single customer that are owned and operated by the customer. Microgrids are much larger in scale, e.g., one microgrid will serve multiple customers and be owned and operated by the utility.

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**Question 7:**

“In 2020, SDG&E experienced a significant cost increase in the tree trim and removal contract rates due to Senate Bill (SB) 247. This legislation resulted in an average contract rate increase of 48% for Davey Tree rates and 63% for Utility Tree Service rates. These cost increases, coupled with a higher overall volume of tree trimming and removals, resulted in a substantial portion of the increased Tree Trimming Balancing Account (TTBA) spending in 2020.” 1-64

- 7.1 *Please elaborate on SB 247 and how it affected the cost of tree trimming and removal.*
- 7.2 *How does SB 247 increase the cost?*
- 7.3 *How does this impact the amount and quality of vegetation management?*
- 7.4 *How might this affect maintenance and mitigation related to PSPS?*

**SDG&E and SoCalGas Response 7:**

Senate Bill (SB) 247 added Section 8386.6 to the Public Utilities Code: *(a) All electrical line clearance tree trimmers performing work to comply with the vegetation management requirements in an electrical corporation’s wildfire mitigation plan shall be qualified line clearance tree trimmers, or trainees under the direct supervision and instruction of qualified line clearance tree trimmers, as provided in the High-Voltage Electrical Safety Orders (Group 2 (commencing with Section 2700) of Subchapter 5 of Chapter 4 of Division 1 of Title 8 of the California Code of Regulations) of the Department of Industrial Relations.*

*(b) All qualified line clearance tree trimmers shall be paid no less than the prevailing wage rate for a first period apprentice electrical utility lineman as determined by the Director of Industrial Relations.*

7.1 Implementation of SB 247 requires an employer of a qualified line clearance trimmer that was not already being paid at least the prevailing wage rate for a first period apprentice electrical utility linemen to increase the trimmer’s pay accordingly. These increases in wage rates affect the cost of tree trimming and removal.

7.2 SDG&E’s contractual agreements with contractors outline payment for services, and can reflect compensation based on a payment rate structure that is all inclusive covering labor, insurance, equipment, benefits, etc. Contracted payment rates are impacted by wage increases, and the increase in wages for electric line clearance tree trimmers associated with implementing SB 247 would typically be a direct pass-through in contracts signed by SDG&E. In some instances these increases were substantial.

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**SDG&E and SoCalGas Response 7:-Continued**

7.3 In theory, higher wage increases would result in improved employee recruitment by expanding the pool of candidates and qualified individuals. This could also help increase employee retention, reduce attrition, and increase worker safety as a result of having continually trained and experienced workers. Utility tree trimming is an inherently dangerous occupation. These individuals are professionals trained in worker safety, electrical awareness, and industry-standard pruning techniques. Fair and just compensation can result in higher productivity and work quality.

7.4 No direct impact related to PSPS is anticipated.