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VIA EMAIL

Wildfire Safety Advisory Board
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Wildfire Safety Advisory Board Recommendations on the 2020 Utility Wildfire Mitigation Plans

Dear Wildfire Safety Advisory Board,

Pursuant to the guidance provided by the Wildfire Safety Advisory Board (WSAB or Board), San Diego Gas & Electric Company (SDG&E) submits these comments on the Board's April 3, 2020 Recommendations on the 2020 Utility Wildfire Mitigation Plans (WMPs or Plans). SDG&E generally supports the Board's recommendations. In these comments, SDG&E offers clarifications and suggested modifications to certain recommendations for the Board's consideration.

SDG&E strongly opposes two of the WSAB's Recommendations. First, SDG&E submits that the WSD should not mandate any kind of specified timeframe for restoring power following a Public Safety Power Shutoff because such a requirement would likely have negative safety consequences. Second, any requirement that utilities submit pilot program information to WSD will constrain utilities from trying out new ideas and emerging technologies. Set forth below are SDG&E's detailed comments.

Working with Local Government Liaisons in Emergency Situations

Board Recommendation 2: WSD should consider whether the utilities have provided information to demonstrate that they are forming closer partnerships with local city and county governments, with protocols for informing city and county fire departments, and have a competent and qualified liaison for the local governments and counties when a utility assembles at its Emergency Operations Center (EOC) concerning a possible Public Safety Power Shutoff (PSPS).

Over the past decade, SDG&E has been practicing a collaborative, relationship-driven approach with its jurisdictions, and it has established partnerships in place.

SDG&E has a unique service territory, which is comprised of one entire county (County of San Diego), a portion of another county (southern Orange County), twenty-nine cities, and eighteen sovereign nations (federally recognized tribal governments). To date, most of SDG&E's Public Safety Power Shutoffs (PSPS) events have impacted predominantly unincorporated areas of the County of San Diego and approximately twelve of the federally recognized tribes. In the 2019 wildfire season, a few of our cities and an unincorporated area in southern Orange County were impacted.

SDG&E's partnerships with the jurisdictions in its service territory encompasses work performed throughout the year. In advance of each wildfire season, SDG&E invites emergency management leaders from its jurisdictions to tour its Emergency Operations Center (EOC), holds exercises on PSPS, and disseminates important PSPS information, including changes to protocols. SDG&E also updates its emergency contact list at least two months in advance of wildfire season, per the Commission's Phase 1 Decision ((D.)19-05-042) in the De-Energization Rulemaking proceeding, and throughout the year, as changes occur.

During a PSPS event, SDG&E maintains three 24/7 direct lines for its jurisdictions: one primarily for jurisdictional partners and non-Emergency Management Public Safety Partners, one for Emergency Management, and one for Fire Coordinators. These numbers do not change and are provided to emergency management leaders across jurisdictions in advance of wildfire season. Jurisdictions in SDG&E's service territory know they can get to a live person in SDG&E's EOC for real time information during an event. During an event, jurisdictions also have access to real-time situational information through SDG&E's PSPS online portal, which provides real-time boundaries of an event.

Following a wildfire season, SDG&E holds meetings with emergency managers from its jurisdictions and provides them with an overview of the past season and opportunity to provide feedback and lessons learned.

SDG&E already provides government liaisons to a requesting jurisdiction's EOC. SDG&E's government liaisons that are embedded in a jurisdiction's EOC are all Federal Emergency Management Agency (FEMA) certified in Incident Command System (ICS) training and have direct lines to SDG&E's EOC. During PSPS events, SDG&E also hosts government liaisons within its EOC. SDG&E believes that through the direct contacts that are already established between its government liaisons and existing channels for real-time information, it is able to effectively provide pertinent information to support local governments during PSPS events.

In response to the Wildfire Safety Advisory Board's recommendations for an online emergency contact list to be developed for each wildfire mitigation territory, SDG&E already has its 24/7 dedicated emergency contact numbers as outlined above, which is provided directly to a jurisdiction's emergency management team in advance of wildfire season and communicated to these partners during events (with each email communication sent). SDG&E believes that its current practice works well for its

territory and is more hands-on than the proposed recommendation. SDG&E's current practice also limits the amount of non-emergency calls that its dedicated numbers may be tied up with if these numbers were posted publicly. Each jurisdiction also has multiple established points of contact, between SDG&E's Regional Public Affairs team and SDG&E's Emergency Management team, which enables same day update of contact information without need for website developer support.

SDG&E also worked with local governments when determining where to establish its Community Resource Centers (CRCs) and the location of SDG&E's CRCs was a collaborative approach that was informed by input and coordination with governments. Any expansion of the CRC program would also include this collaborative approach.

Sharing Developing Science and Situational Awareness Data

Board Recommendation 3: WSD should assess the accessibility of the utilities' advanced weather modeling and fire modeling information. Also consider, particularly given federal critical infrastructure protection protocols, whether additional information should be made available to the public and scientific community.

SDG&E supports a state-wide, centralized data and situational awareness platform that aggregates data from sources including HD cameras, weather stations, weather modeling, in addition to other data that can be made available for the purpose of developing wildfire science and encouraging modeler collaboration.

SDG&E acknowledges there are different climate zones across the state of California and the fact that no one fire potential assessment model will be optimized for all fire environments across the state. Sharing data and methodologies will help ensure the latest fire science methodologies are widely available. To that end, SDG&E is currently working with the WiFIRE team to create a portal to share all SDG&E fire weather data with the research and modeling community.

Future Proofing Utility Pilots and Aligning Pilots with Climate Goals

Board Recommendation 4: WSD should consider requiring the utilities to submit pilot implementation plans for all new and emerging technologies for wildfire mitigation. Also consider developing requirements and criteria to assess the reasonableness of the pilot implementation plans and the costs. Pilots designed to reduce the impact of PSPS events should align with state goals for resiliency and climate.

New and emerging technologies are prime candidates for pilot programs. General guidelines and direction to align with state resiliency and climate goals help guide potential pilot programs for utilities to pursue. Requiring utilities to submit pilot program implementation plans to the WSD, however, will constrain the utilities from trying out new ideas and emerging technologies. The constraint will manifest itself in two main ways.

First, pilot programs for emerging technologies may not have clear metrics nor clear implementation plans as these pilots are usually used to learn and understand the technology and how well it works. Often, pilots allow utilities to identify gaps or problems with the technology developed in a lab or manufacturing setting but not fully vetted in the field. The limited deployment of the emerging technology can afford all involved the opportunity to refine the technology, develop an implementation plan, and even propose some metrics.

Second, the unconstrained nature of pilot programs allows for more innovative development of solutions. This unconstrained approach is not devoid of general goals to mitigate PSPS or wildfire risk. Rather, a regulated approved implementation plan could drive the pilot towards an undesirable outcome. A more fluid pilot program could potentially lead to previously unidentified and more beneficial outcomes.

Fuel Management, Removal of At-Risk Species, and Scientific Review

Board Recommendation 5: WSD should consider the sufficiency of the information provided about utility vegetation treatment approaches including whether: 1) vegetation treatment in non-forested areas is creating a more flammable environment; 2) the utilities have developed programs to increase fuel moisture retention; 3) WMPs justify targeting certain at-risk species based on the specific characteristics of species and subspecies; and 4) the fuel treatment programs that go beyond the 12-foot radial requirements in GO 95 follow best practices or have been reviewed by scientists.

Vegetation Treatment in Non-Forested Areas

Vegetation treatment activities, as they pertain to tree trimming operations, are minimal in scale as they only occur at the specific tree location. Enhanced tree trimming operations effectively mediates the risk of ignition caused by branch contact and reduces available fuel if a fire were to ignite. SDG&E's other vegetation treatments to remove lower growing vegetation for the purpose of fire breaks and ignition avoidance are performed with a comprehensive pre-activity review for environmental impacts. These activities are also relatively small in scale and do not serve to convert large acreage into an early successional species that can be more flammable.

Fuel Moisture Retention

SDG&E does not practice proactive irrigation in advance of its tree operations because of the impracticality given the availability of water at its work locations and a multitude of site-specific limitations and environmental restrictions. Also, additional irrigation may serve to increase the growth of finer, flashier fuels negating the fire reduction benefits.

At-Risk Species

SDG&E will continue to refine its determination of at-risk or targeted species in consideration of multiple factors including historical data of tree-related outages, species failure characteristics, and the development of the Vegetation Risk Index. In aggregate, these data will help identify high risk trees and extenuating factors (e.g., soil type, soil moisture, slope, weather history, infrastructure, etc.). SDG&E will further refine its determination of at-risk trees by classifying and identifying species-specific characteristics. SDG&E has determined that applicable clearance recommendations are often insufficient to prevent strike potential of trees located adjacent to the conductors.

Fuel Treatment Programs

The WSAB makes a recommendation related to SDG&E's fuel treatment program wherein it references GO 95 requirements, as well as grants. As an initial matter, it appears this recommendation conflates two separate programs – SDG&E's enhanced vegetation management program that seeks to achieve a 25-foot clearance where feasible (beyond GO 95 requirements) and SDG&E's fuels management program, which is not directly associated with GO 95.

In an effort to reduce the fire risk to the communities SDG&E serves, a new fuels management project grant was proposed. All the award recipients' projects had the support of a local Fire Agency and were located within the HFTD. There were 13 applications filed and the decision of how the grants were awarded followed a scoring process similar to the one used by the Sunrise Powerlink Fire Mitigation Grant Program, which is part of the Fire Mitigation Fund Utilization Plan that was approved by the Commission in 2010. The scoring and the recommendation of the eventual award recipients was conducted by a committee of former fire professionals with over 100 years of collective fire and fuels experience. Given that there is a robust selection process that engages experts in the field and all projects are supported by their local fire agencies, SDG&E submits it is redundant for its grants to be reviewed further by external fire scientist and ecologists.

In 2019, SDG&E launched a pilot wildfire fuels modification program to test implementation of an ecologically based wildfire fuels modification methodology developed by SDG&E. The intent was to see if wildfire fuels modification activities could be implemented in a way that did not result in impacts that would require biological mitigation. The methodology is based on: 1) removal of non-native species as the first priority within treatment areas, 2) removal of dead and down native woody material within treatment areas, and 3) select thinning of native shrub species concentrating on common (listed and sensitive species were avoided) native shrub species. A total of 382 structures were treated during 2019 for SDG&E infrastructure located on Bureau of Land Management-managed lands, U.S. Forest Service-managed lands, and private lands. Baseline surveys were conducted at all structures where treatment was planned or had the potential to occur (744 structures), and post-treatment

surveys were conducted at all of the structures where treatments occurred (382 structures).

SDG&E's Vegetation Management standard practices include the chipping and physical removal of most of the green waste material associated with tree trimming and removal activities in all areas of the service territory. At customer request, chipped material is left on site to serve as weed abatement and landscaping material. Larger wood debris generated by tree removal operations are cut into manageable lengths and left on site. This wood is owned by the property owner and is often used for firewood or landscaping and would otherwise need to be disposed of at landfills. The debris left on site does not necessarily contribute to a more flammable environment because the material does not consist of smaller, flashier fuel components that could enhance conditions for ignition or propagation.

Analyzing Near Misses

Board Recommendation 6: WSD should consider whether the utilities are effectively analyzing near miss data during PSPS events to determine the effectiveness of the vegetation management, grid hardening, as well as speed of restoration programs, in their wildfire mitigation activities and the effectiveness of each PSPS event.

SDG&E has an established process to capture and analyze near miss data after PSPS events. As part of SDG&E's re-energization protocols, 100% of de-energized lines are patrolled before being re-energized. During these patrols, if damaged structures or equipment are discovered, or vegetation is found in the lines, or any other issue that could have led to an electrical fault on the system is discovered, that event is documented. The documentation includes a form to capture the data that includes the type of damage discovered, the structure number to locate the event, and pictures of the damage that occurred.

In a post-event near miss analysis, SDG&E can then use its match drop fire spread simulation software to simulate the spread of the fires that may have occurred utilizing the actual wind and fuels conditions during the event. A total amount of acreage burned, and structures damaged can be calculated to demonstrate the effectiveness of the PSPS event in fire impacts avoided. One consideration, however, is that there is not always one to one correlation of fault to ignition, and because the lines were de-energized, a utility cannot know which events would have truly led to ignitions. SDG&E uses historical data to calculate the ignition ratio for different events, which can be seen in Table 11 of the WMP. But even understanding the rate, it is difficult for a utility to select which damage event location has the ignition, as location can have a large impact on how much acreage is burned and how much damage would have occurred due to a fire. One approach would be to calculate an average by first calculating all the impacts at every single damage location, summing them up, and then multiplying by the ignition rate to get an average avoided impact.

Training Programs and Qualified Electrical Workers

Board Recommendation 7: WSD should consider whether the utilities are hiring electrical asset inspectors with qualifications that go beyond a basic knowledge of GO 95 requirements. Also consider whether the utilities are developing robust training programs that train workers to identify hazards that could ignite wildfires and increase the pool of qualified electrical workers.

SDG&E has established and maintained a robust training program for its electrical asset inspectors. SDG&E Skills Training Center qualifies qualified electrical workers (QEWs) to conduct Overhead CMP detailed and QC inspections through a two-day course that is instructor led and covers the Overhead (89 condition codes), and Quality Control (50 conditions codes) portion of the CMP program. This initial course is conducted at the Skills Training Center in the presence of a qualified CMP instructor. This course provides the inspectors the knowledge needed to identify infraction, reliability and discretionary conditions on overhead poles, attached equipment and conductors for OH detailed and QC inspections as defined in General Order 165, General Order 95 or SDG&E's Overhead Construction Standards.

On-line refresher courses consisting of six modules are provided to SDG&E inspectors and include an assessment in order to pass. Additionally, SDG&E conducts annual patrol training for all QEWs and Electric Troubleshooters performing patrols. Only employees that have completed the Overhead CMP detailed, and QC inspection training may perform inspections. Additionally, system enhancements to SDG&E's workforce management system prevent inspection orders being dispatched to non-qualified QEWs.

SDG&E continues to look for opportunities to use technology to enhance the training of its inspectors, including virtual, augmented reality, and 3-D scenarios in the classroom as well as hands on application in the field. In 2019, SDG&E updated the CMP/QC inspector training to include its re-defined Emergency, Priority and Non-Critical infractions and the process for an inspector to elevate the Emergency and Priority infractions in Tier 3 and Tier 2 of the HFTD. SDG&E performs internal audit of the CMP/QC process to ensure compliance to GO 95. Additionally, all inspections and patrols conducted have the associated date, time stamp and GIS data associated. Lastly, SDG&E entered into a Memorandum of Understanding (MOU) with the IBEW 465 in 2017 to increase the number of QEWs at SDG&E through 2020.

Criteria to Prioritize Reducing PSPS Events for Critical Infrastructure

Board Recommendation 8: WSD should consider how the utilities are prioritizing and expediting excluding certain line segments, in timing and geography, from future PSPS events. Consider requiring the utilities to expedite the development of "Grid Hardening Operating Criteria" to evaluation each circuit within a distribution or transmission line with the goal of reducing PSPS events for certain circuits as part of the safety certificate process.

As detailed in its WMP, SDG&E is performing a segment-by-segment analysis of circuits prone to PSPS to identify highest risk areas and determine the most effective solution to reduce or eliminate PSPS and reduce the potential wildfire risk. The analysis incorporates a variety of risk factors including the impacts of PSPS to customers, conditional wildfire impact from the WRRM model, tree strike potential, customer density, ingress/egress issues, and critical infrastructure among other factors to identify the most appropriate portfolio of mitigations across the high wildfire risk areas. SDG&E will leverage this assessment to prioritize and expedite both newly identified and existing work. Based on this analysis, SDG&E has already identified a set of quick wins to reduce PSPS impacts in 2020 and is continuing to work towards long-term solutions to further mitigate both the wildfire risk as well as the PSPS risks.

Analyzing Fire Maps to Exclude Lines from PSPS Events

Board Recommendation 9: WSD should consider whether the utilities have completed an analysis of the HFTD maps to identify segments of the grid that may be excluded from PSPS events because the fire risk is minimal. These include areas with undergrounded or hardened lines, the capability to sectionalize, and clearly, urban areas. Further, increasing segmentation or switching generation sources should be considered in order to exclude from PSPS events low-risk lines that are downstream from high-risk lines. Adjusting generation may require changes to CAISO protocols.

Over the decade-long development and enhancement of the SDG&E PSPS program, subject matter expects at SDG&E have conducted annual analysis of the grid to determine if there have been any changes to the wildfire risk. This analysis identifies all high-risk circuit segments from the coastal canyons to the mountains, though also identifies circuitry that is low risk due to urbanization and/or lack of vegetation to support wildfire growth. This annual analysis, which has been greatly increased in 2020 by the development of a targeted team which is closely inspecting areas with undergrounded or hardened lines and the capability to add weather stations and sectionalizing, to further decrease the community impacts of PSPS.

Risk Spend Efficiency and Costs of PSPS Events

Board Recommendation 10: WSD should consider whether the utilities factor into their RSE calculations the risk and cost to customers that results from a PSPS event in addition to consideration of PSPS event wildfire risk reduction.

In the RSE calculations submitted in SDG&E's 2020 WMP, customer impacts of PSPS were measured in traditional reliability metrics, as increases to SAIDI and SAIFI indices. The overall impacts to these reliability measures were not material when compared to the wildfire risk and did not impact the calculations. Going forward, SDG&E is looking to develop an improved risk model that would quantify the PSPS impacts to customers on different circuit segments, as well as the wildfire risk. This model would have two risk scores – a score that measures the risk of PSPS impacts, and a score that measures the risk of wildfire. The PSPS risk would be calculated as the

probability of PSPS, based on historical fire conditions and historical winds multiplied by the impact that would include customer count impacted, critical customer infrastructure (*e.g.*, schools, fire stations, gas stations etc.) and commerce impacts. The wildfire risk calculation will remain the same, which is based on the probability of an ignition event times the impact of the wildfire. Both risk assessments utilize a common multi-attribute value function aligned with the RAMP methodology to calculate the overall risk.

Having these two risks can inform a quantitative approach selecting the right mitigation. If PSPS would have minimal impacts on customers but fire risk is great, an overhead hardening project may be the most cost-effective solution (highest RSE for the circuit segment). If PSPS impacts are high and fire risk is high, an undergrounding solution may have the highest RSE for the circuit segment.

Re-Energization After PSPS Events

Board Recommendation 11: WSD should consider directing the utilities to develop informal and specific re-energization timeframe goals for the 2020 WMPs and consider inserting those goals in the 2021 WMPs. The utilities wildfire mitigation measures like grid hardening and vegetation management should be designed to prioritize the quick re-energization of lines once it is safe to end a PSPS event.

SDG&E strives to restore power to impacted customers as soon as possible and recognizes the importance of continuous, uninterrupted electric service to its customers. Nevertheless, it is not appropriate from a safety perspective to set a strict requirement that power restoration be no longer than 24 hours, or some other hard and fast timeframe.

SDG&E begins restoration patrols as soon as conditions allow such patrols to be safely conducted. Restricting customer restorations to 24 hours after the circuit "concludes conditions that necessitate a PSPS event," may not be feasible under certain conditions. Although the conditions that initiated a PSPS for the affected circuit may conclude, there may be other conditions that inhibit a safe and thorough patrol of lines within 24 hours. For instance, wind conditions may be such that aerial patrols necessary for accessing remote infrastructure cannot be conducted. Flying helicopters under windy conditions will jeopardize the safety of the pilots as well as customers. A lack of daylight can also hamper ground and aerial patrol inspections, requiring additional time. After a high wind event, attempting to restore circuits or segments of circuits at night can have unintended consequences or even start fires if an issue with the electrical system was not spotted in the darkness. Further, the time required simply for conducting the patrol can range from a few to several hours to inspect the required circuit infrastructure. The terrain traversed and access to SDG&E facilities may also hinder foot patrols. Longer circuits also take more time to patrol. Lastly, the amount and severity of damage found during patrols may also affect restoration times. The most important factor is to make sure restoration occurs when it is safe to do so.

SDG&E appreciates the opportunity to provide these comments on the Board's recommendations and looks forward to working with the Commission and interested stakeholders on these issues.

Respectfully submitted,

/s/ Christopher M. Lyons

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