THE UTILITY REFORM NETWORK DATA REQUEST
TURN-DR-007
SDG&E/SOCALGAS 2021 RAMP REPORTS- A.21-05-011/014
DATE RECEIVED: AUGUST 6, 2021
DATE RESPONDED: AUGUST 23, 2021

Question 1:
Let me now clearly request that the Sempra Utilities run TURN's scenario analysis for alternative RSEs using a baseline at the end of 2023, as described in your July 15, 2021 email to me, with the understanding that the pre-mitigation risk score will reflect all risk reduction benefits through 2023, including any benefits from mitigations performed in 2021.

In the above-referenced July 16th email, you said that the Sempra Utilities would run this analysis for "a couple of risks, including Wildfire," which you referred to as "piloted risks." This is acceptable to TURN on a pilot basis and appreciate that the Wildfire risk will be included.

We request that the Sempra Utilities provide these alternative scenarios by August 16, 2021. Please let us know if that works for you and which risk(s) in addition to the Wildfire risk will be included in the alternative scenarios.

SDG&E/SoCalGas Response 01:
SoCalGas and SDG&E object to this data request under Rule 10.1 of the Commission's Rules of Practice and Procedure on the grounds that the requested scenario analysis is beyond the scope of what was filed in SoCalGas's and SDG&E's RAMP reports, and the requested information is unlikely to lead to the discovery of admissible evidence.[1] Subject to and without waiving the foregoing objection, SoCalGas and SDG&E respond as follows:

SoCalGas's Storage Incident risk and SDG&E's Wildfire risk were utilized to prepare the requested scenario analyses. Specific notes and assumptions for each risk are listed below under the risk-specific header; overarching notes regarding the analyses are noted here.

In order to run TURN's requested scenario analysis, SoCalGas and SDG&E were required to make additional assumptions. These assumptions, while noted, were made on an expedited basis to meet the timeline requested in the data request and therefore, were not subject to a thorough internal review and vetting process, as were the analyses prepared for the RAMP Reports. The changes in RSE values that result from running TURN's requested scenario analysis are contingent upon the assumptions made specifically for these analyses.

Accurately quantifying risk levels for enterprise risks is critically important. The goal of mitigation programs is to reduce risk in the most effective manner for ratepayers and these activities, as well as future proposed mitigations, serve to reduce and maintain risk. To that end, risk calculations are based on specific periods in time. For the 2021 RAMP filing, SoCalGas and SDG&E determined the residual risk score remaining for each risk at the end of 2020. This scoring was based on the information that was known and available at the end of 2020 including

[1] SoCalGas and SDG&E further clarify that providing this response should not be construed to suggest that SoCalGas and SDG&E are required or obligated to provide new analyses in response to data requests.

SDG&E/SoCalGas Response 01 Continued:

data utilized to determine the various components of the risk reduction calculation (*e.g.*, % Risk Addressed and % Mitigation Scope). In order to determine the change in risk score from a known point in time to a forecasted future point in time (*i.e.*, the end of 2023), as discussed above, specific assumptions were made in order to complete the calculation. For this reason, the methodology utilized in the 2021 RAMP filing (which relies more on actual data, rather than projected estimates) ultimately provides a more accurate representation of risk. In other words, the reliance on forecast data, rather than actual data, for these analyses introduces additional uncertainty.

To perform the scenario analyses for this data request, SoCalGas and SDG&E did the following:

1. Reviewed the activities and associated risk reduction benefits in the RAMP filing through 2023
2. Determined the impact those activities and associated risk reduction benefits were anticipated to have on the pre-mitigation risk score expressed in the 2021 RAMP filing
3. Modified the post-mitigation analysis for the activities to reflect benefits for 2024
4. Modified the costs to reflect 2024 forecasted cost estimates
5. Recalculated RSEs for the piloted risks

To determine the impact for each mitigation explained in point 2 above, SoCalGas and SDG&E categorized activities as follows:

1. Mitigations that are centered around maintenance of capital equipment and are assumed to keep risk levels stable (*i.e.*, does not change the overall risk score)
2. Mitigations that are intended to lower overall risk, but only change the risk specifically for the asset being mitigated (*i.e.*, changes risk score, but predominately only affects asset addressed)
3. Mitigations that are intended to lower overall risk and affect the risk for multiple assets (*i.e.*, changes risk score, and has impact on many assets/mitigations)

The categories are further discussed in the individual risk sections below.

It is also important to note that although risk reduction benefits are incorporated into the calculations in response to this data request, the risk reduction benefits are only realized for the benefit lifetime. Meaning that, generally speaking, although a risk score may decrease for a period of time, the risk will ultimately return to pre-mitigation levels if the activity is not continued or a wholesale, system-wide risk reducing activity is not implemented. For example, on-going or reoccurring activities, such as routine maintenance (operations and maintenance or O&M), is performed to combat the risks associated with operating an energy transportation system. The risk reduction benefits of this mitigation keep the risk from further increasing and therefore maintain the existing risk score. Beyond implementing routine work, capital project mitigations generally have finite benefits that correspond with the operating life of the asset, *i.e.*, the likelihood of a risk event occurring increases as the remaining operating life of an asset

SDG&E/SoCalGas Response 01 Continued:

decreases resulting in an increased residual risk value. Because of the difficulties and myriad assumptions required to quantify an increased residual risk in future years, for this scenario SoCalGas and SDG&E assumed that the future increased residual risk value equals the known risk value as of the end of 2020. Additionally, the concept of aging infrastructure is also not directly considered as part of this scenario. More specifically, when performing a risk reducing activity on one asset, the risk associated with all other assets (for which the risk reducing activity was not performed) may increase as the system ages. Therefore, some capital replacements will be completed to simply maintain current risk levels. Moreover, arguably, after a certain amount of time, capital replacements will need to be renewed. Although the replacement of infrastructure beyond its useful life will be required, it is not a consideration during the period subject to this RAMP filing. Nonetheless, risk may be anticipated to slowly increase the longer an asset is operational.

Storage Risk:
SoCalGas piloted for this analysis the RAMP risk of Incident Related to the Storage System (SCG-Risk-4). The Storage RAMP chapter presented the seven controls and one mitigation, the Facility Integrity Management Program (FIMP). SoCalGas did not include in its RAMP Report an RSE for the FIMP mitigation (M1) or the controls of Pressure Monitoring and Alarming (C3) and Wellhead Leak Detection and Repair (C4). Accordingly, this scenario analysis does not provide updated RSEs for those activities. The Storage activities for which an RSE was calculated and the category the activity was placed are summarized in the table below.

ID	Control/Mitigation Name	Category
SCG-Risk-4-C1	Integrity Demonstration, Verification, and Monitoring Practices	Does not change risk score
SCG-Risk-4-C2	Well Abandonment and Replacement	Changes risk score, but predominately only affects asset addressed
SCG-Risk-4-C5	Storage Field Maintenance	Does not change risk score
SCG-Risk-4-C6	Compressor Overhauls	Changes risk score, but predominately only affects asset addressed
SCG-Risk-4-C7	Upgrade to Purification Equipment	Changes risk score, but predominately only affects asset addressed

The activities of C1 and C5 are on-going in nature and, as explained above, are required to maintain risk at current levels.

SDG&E/SoCalGas Response 01 Continued:

The Storage Incident risk also includes a capital project designed to replace assets or components of assets specific to underground storage well abandonment and replacement. C2, Well Abandonment and Replacement, which focuses on the abandonment of identified wells and drilling of new wells, only provides benefits until the next well is drilled.

C7, Upgrade to Purification Equipment, addresses replacing components of the storage field's various tank farms and dehydration units, which are made up of numerous components and need to be maintained to safely and reliably provide natural gas to customers. Due to the complexity of these systems and the on-going nature of the work required to maintain these systems, this activity can be viewed similar to routine O&M where the risk reduction is realized on a shorter timeframe than traditional capital replacement programs. This is because the system as whole is dependent on the upkeep of this large amalgam of components. That said, a modest change in the risk score was calculated for C7. Additionally, SoCalGas assumed for this data request that the risk addressed remains unchanged at 2%. It should be noted that since the risk addressed is relatively small (*i.e.,* compared to 100%), any assumed changes in risk addressed will have minimal impact of RSE values.

For C6, Compressor Overhauls, SoCalGas made assumptions in this analysis related to the risk addressed metric used in its RSE calculation. Presumably, as more work is completed, the risk addressed metric should decrease for activities that are risk reducing rather than routine maintenance type of work. As mentioned in the August 11, 2021 RAMP workshop, SoCalGas's risk addressed metric was determined for many risk categories as a percentage of incidents that have historically occurred both within and outside the Company. Therefore, the determination of the decrease in risk addressed for the purposes of applying it for this data request requires the assumption of a decrease in the number of incidents in the future.

For purposes of this analysis, to illustrate the concept of changing the risk addressed metric, SoCalGas assumed for C6 that the reduction in the number of incidents was proportional to the ratio of compressors addressed. This reduction then realizes the risk reduction benefits and results in a change in the RSE value. Further, because of the five-year cycle of this activity, the risk addressed is anticipated to eventually return to previous, unmitigated levels; however, this is not demonstrated in this analysis as the timeframe is limited to 2024, the GRC test year. Another item to note regarding this activity, which was mentioned in the August 11, 2021 workshop, is that SoCalGas has not had any reportable compressor incidents; therefore, national data was used to determine impacts and likelihood associated with compressor units. The lack of SoCalGas-specific event data, although beneficial from an operational standpoint, presents another level of uncertainty as the national data can only be seen as a proxy. National data is useful when using recorded information. However, forecasting and adjusting national data presents a challenge. This is applicable to all risk areas for which internal data is not sufficient to fully represent the possible risk likelihood and consequences that can occur.

Wildfire Risk:
As described above, for the Wildfire risk analysis for this data request, SDG&E categorizes its wildfire mitigations in several relevant ways. These categories are: mitigations that are centered around maintenance of capital equipment and are assumed to keep risk levels stable, and mitigations that are intended to lower overall wildfire risk. Within the category of mitigations that lower overall wildfire risk, there are two sub-categories: those mitigations that only change the risk specifically for the asset being mitigated, and those mitigations that affect the risk for multiple assets.

To answer the data request, SDG&E placed each mitigation for which an RSE was calculated into those three categories and undertook its analysis with those assumptions in place. The table below summarizes each mitigation and which category they were placed.

ID	Control/Mitigation Name	Category
SDG&E-Risk-1-C22-T1	Distribution System Inspection – CMP – 5 Year Detailed Inspections (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C22-T2	Distribution System Inspection – CMP – 5 Year Detailed Inspections (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C24-T2	Distribution System Inspection – IR/Corona (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C25-T2	Distribution System Inspection – CMP – 10 Year Intrusive (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C27-T1	Distribution System Inspection – HFTD Tier 3 Inspections (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C27-T2	Distribution System Inspection – HFTD Tier 3 Inspections (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C28-T1	Distribution System Inspection – Drone Inspections (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C28-T2	Distribution System Inspection – Drone Inspections (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C29-T1	Distribution System Inspection – Circuit Ownership (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C29-T2	Distribution System Inspection – Circuit Ownership (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C30-T1	Distribution System Inspection – CMP – Annual Patrol (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C30-T2	Distribution System Inspection – CMP – Annual Patrol (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C31-T1	Tree Trimming (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C31-T2	Tree Trimming (HFTD Tier 2)	Does not change risk score

SDG&E-Risk-1-C34-T1	Pole Brushing (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C34-T2	Pole Brushing (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C35-T1	Aviation Firefighting Program (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C35-T2	Aviation Firefighting Program (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C35-T3	Aviation Firefighting Program (Non-HFTD)	Does not change risk score
SDG&E-Risk-1-C36-T1	Wildfire Infrastructure Protection Teams (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C36-T2	Wildfire Infrastructure Protection Teams (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C37-T1	PSPS Events and Mitigation of PSPS Impacts (HFTD Tier 3)	Does not change risk score
SDG&E-Risk-1-C37-T2	PSPS Events and Mitigation of PSPS Impacts (HFTD Tier 2)	Does not change risk score
SDG&E-Risk-1-C3-T3	Wireless Fault Indicators (Non-HFTD)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C6/M1-T2	SCADA Capacitors (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C7/M2-T1	Overhead Distribution Fire Hardening – Covered Conductor (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C7/M2-T2	Overhead Distribution Fire Hardening – Covered Conductor (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C8/M3-T2	Expulsion Fuse Replacement (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C11/M6-T1	Advanced Protection (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C12/M7-T1	Hotline Clamps (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C12/M7-T2	Hotline Clamps (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C16/M11-T1	Strategic Undergrounding (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C16/M11-T2	Strategic Undergrounding (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed

SDG&E-Risk-1-C17/M12-T1	Overhead Distribution Fire Hardening – Bare Conductor (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C18/M13-T1	Overhead Transmission Fire Hardening – Distribution Underbuilt (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C18/M13-T2	Overhead Transmission Fire Hardening – Distribution Underbuilt (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C21/M14-T1	Lightning Arrestor Removal/Replacement Program (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C32/M15-T1	Fuels Management Program (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C33/M16-T1	Enhanced Vegetation Management (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C33/M16-T2	Enhanced Vegetation Management (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C9/M4-T1	PSPS Sectionalizing (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C9/M4-T2	PSPS Sectionalizing (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C10/M5-T2	Microgrids (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C13/M8-T1	Resiliency Grant Programs (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C13/M8-T2	Resiliency Grant Programs (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C14/M9-T1	Standby Power Programs (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C15/M10-T1	Resiliency Assistance Programs (HFTD Tier 3)	Changes risk score, but predominately only affects asset addressed

SDG&E-Risk-1-C15/M10-T2	Resiliency Assistance Programs (HFTD Tier 2)	Changes risk score, but predominately only affects asset addressed
SDG&E-Risk-1-C11/M6-T1	Advanced Protection (HFTD Tier 3)	Changes risk score, and has impact on many assets/mitigations

One should note that although the Total Wildfire Risk Score is forecasted to decrease from 2021 to 2023, most RSE values are unchanged. This is due to the fact that nearly all mitigations target specific assets and therefore results in little impact from other mitigations. The following is an example using a generator program that is used to mitigate some of the effects of PSPS. If a generator is provided to a customer, that customer receives a reduction of risk which is shown in the RSE for the generator program, but that generator program does not reduce risk for any other customer or asset. And to look at the issue from the other direction, SDG&E analyzed if there were other mitigations that would reduce the PSPS impact to the customers receiving the generators, and therefore reducing the benefit that the generators provide. The conclusion by SDG&E is that no other programs significantly reduce PSPS impacts to those specific customers to the degree that it would change the RSE for the generator program. Candidates that could affect the PSPS impact are: 1) system hardening programs that could reduce the likelihood for the need for PSPS, and 2) PSPS sectionalizing which adds switches to reduce the amount of customers who might experience a PSPS. But both 1) and 2) are very unlikely to be performed on the same circuits as the customers receiving the generators so the benefit is not received. In short, there would be no duplicative reduction of PSPS impacts to those same customers.

With those assumptions, SDG&E demonstrates in the separately attached Wildfire spreadsheet the RSEs for its Wildfire program as if 2023 were the baseline for risk analysis.