

Safety Policy Division Review of San Diego Gas & Electric's 2020 Safety Performance Metrics Submittal Pursuant to Decision 19-04-020

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I. Purpose

On April 1, 2020, pursuant to Ordering Paragraph 2 in Decision (D.)19-04-020 of the Safety Model Assessment Phase (S-MAP) proceeding, A.15-05-002 et al, San Diego Gas and Electric (SDG&E) filed with the California Public Utilities Commission (CPUC or Commission) a Safety Performance Metrics Report. SDG&E also concurrently distributed the report to members on the service list in A.15-05-002.

D.19-04-020 also directed Safety and Enforcement Division staff to review the submitted safety performance metrics reports. Since the Risk Assessment staff section that is responsible for the evaluation of these reports has migrated from the Safety Enforcement Division to the Safety Policy Division (SPD), this letter summarizes SPD staff's evaluation results on SDG&E's Safety Performance Metrics Report.

II. Overview of SDG&E Report

SDG&E submitted data on 18 metrics as required by D.19-04-02 (Table 1). Their report is divided into five sections:

- I. Introduction/ Overview:** provides a narrative overview of SDG&E's safety organizational structure and compliance with S-MAP Phase Two Decision Directives.
- II. Metrics Overview:** provides a summary of how metrics were used to inform improved training and corrective actions, and how safety performance metrics data is used to support risk-based decision making.
- III. Executive Compensation and Bias Controls Overview:** summarizes executive compensation and bias controls.
- IV. Interim Risk Mitigation Accountability Report (RMAR) Requirements:** provides summary of how safety metrics reflect progress against SDG&E's RAMP and GRC safety goals and total estimated risk mitigation funding.
- V. Approved Safety Performance Metrics:** includes a narrative overview and analysis of each of SDG&E's 18 metrics, along with required reporting information on executive compensation.

Table 1. Overview of Metric Data Submitted.

Category	Safety Performance Metric	Unit
Electric	1 Transmission and Distribution (T&D) Overhead Wires Down	Number of wire down events
	2 T&D Overhead Wires Down – Major Event Days (MED)	Number of wire down events
	3 Electric Emergency Response (911)	Percentage of time response is within 60 mins
	4 Fire Ignitions	Number of ignitions
Gas	5 Gas Dig-in	The number of 3rd party gas dig-ins per 1,000 USA tags/tickets
	6 Gas In-Line Inspection	Miles inspected
	8 Shut in the Gas Average Time – Mains	Average (median) time in minutes required to stop the flow of gas
	9 Shut in the Gas Average Time – Services	Average (median) response time in minutes required to stop the flow of gas during incidents involving services
	10 Cross Bore Intrusions	Number of cross bore intrusions per 1,000 inspections
	11 Gas Emergency Response	Average response time in minutes (mean)
	13 Percentage of the Gas System that can be Internally Inspected	Percentage
14 Employee Serious Injuries and Fatalities (SIF)	Number of Serious Injuries/ Fatalities	

Category	Safety Performance Metric	Unit
	15 Employee Days Away, Restricted, or Transferred (DART) Rate	DART Cases times 200,000 divided by employee hours worked
	18 Contractor OSHA Recordables Rate	OSHA recordable times 200,000 divided by contractor hours worked associated with work for the reporting utility
	20 Contractor SIF	Number of Work related serious injuries or fatalities associated with work for the reporting utility
	21 Contractor Lost Work Day (LWD) Case Rate	Number of LWD cases incurred for contractors per 200,000 hours worked Associated with work for the reporting utility
	22 Public SIF	Number of Serious Injuries/ Fatalities
Vehicles	23 Helicopter/ Flight Accident or Incident	Number of accidents or incidents (as defined in 49 CFR Section 830.5 “Immediate Notification”)

Observations: In their report, SDG&E includes 10 years of data on seven metrics; eight years of data on two metrics; six years of data on three metrics; five years of data on one metric; three years of data on four metrics; and one year of data on one metric. A summary of the number of years of data provided for each metric is in Figure 1.

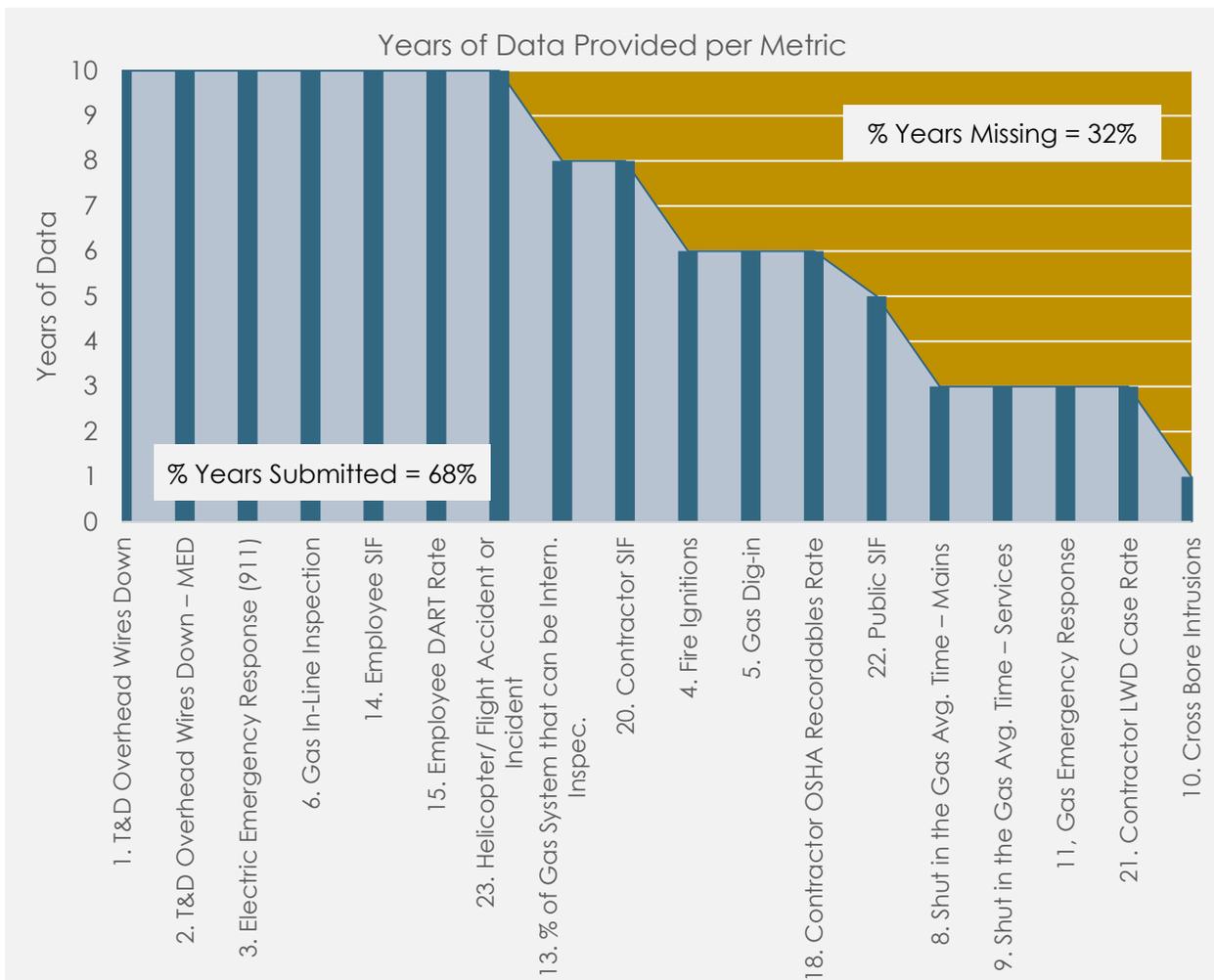


Figure 1. Years of Data per Metric. The shaded area in the top right of Figure 1 corresponds to the additional years of data needed for SDG&E to have 10 years of data for all metrics.

SDG&E additionally provides information on which metrics were tied to executive compensation through SDG&E's Incentive Compensation Plans, reporting that in 2019, 10 of 18 metrics (approximately 56%) were tied to executive compensation (Figure 2). SDG&E also describes bias controls in place for their 18 metrics and provides a narrative description of what some metrics are used for. An evaluation of SDG&E's bias controls is displayed in Figure 3.

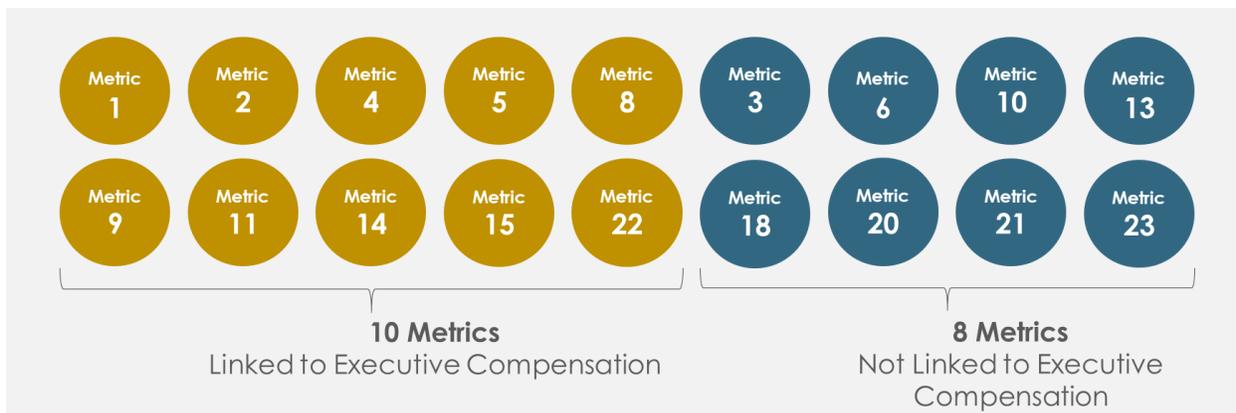


Figure 2. SDG&E Metrics Linked to Executive Compensation.

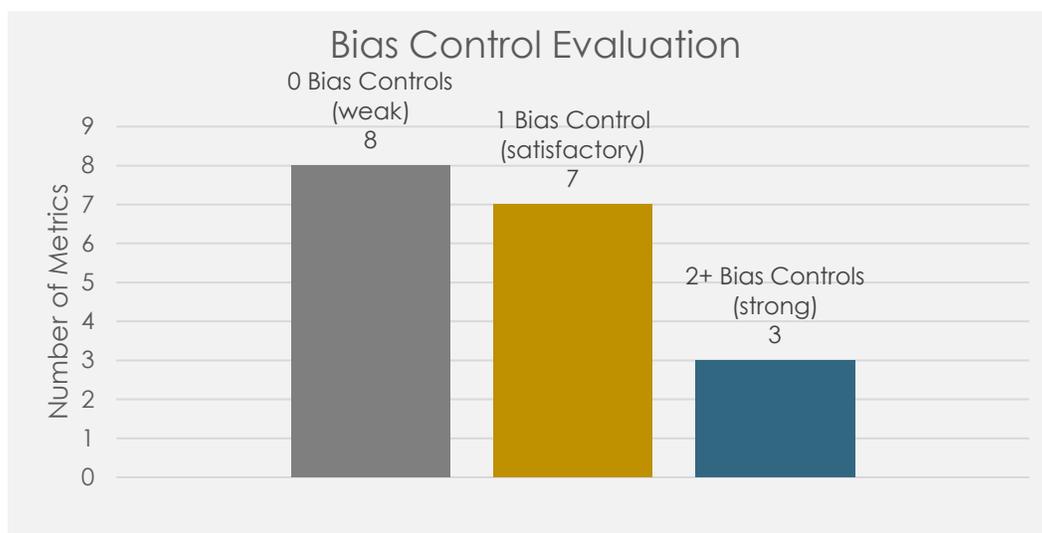


Figure 3. Evaluation of SDG&E's Bias Controls. Eight metrics had 0 bias controls (weak), 7 had one bias control (satisfactory), and 3 had 2+ bias controls (strong).

Overall, the SDG&E's Safety Performance Metrics data shows that for nine out of 18 tracked metrics, SDG&E performed better in 2019 than the average of preceding years, and for four metrics, SDG&E performed worse in 2019 than the average of preceding years. For five metrics (Metrics 8, 9, 10, 11, and 21), there were five or fewer years of data, which prevented an accurate historical average for benchmarking 2019 performance. SDG&E's metric performance is summarized in Figure 4, which shows the percent change in SDG&E's 2019 performance compared to the historical average for each metric (excluding Metrics 8, 9, 10, 11, and 21). Positive values show an improvement in metric performance compared to the historic average and negative values show a decline in performance.

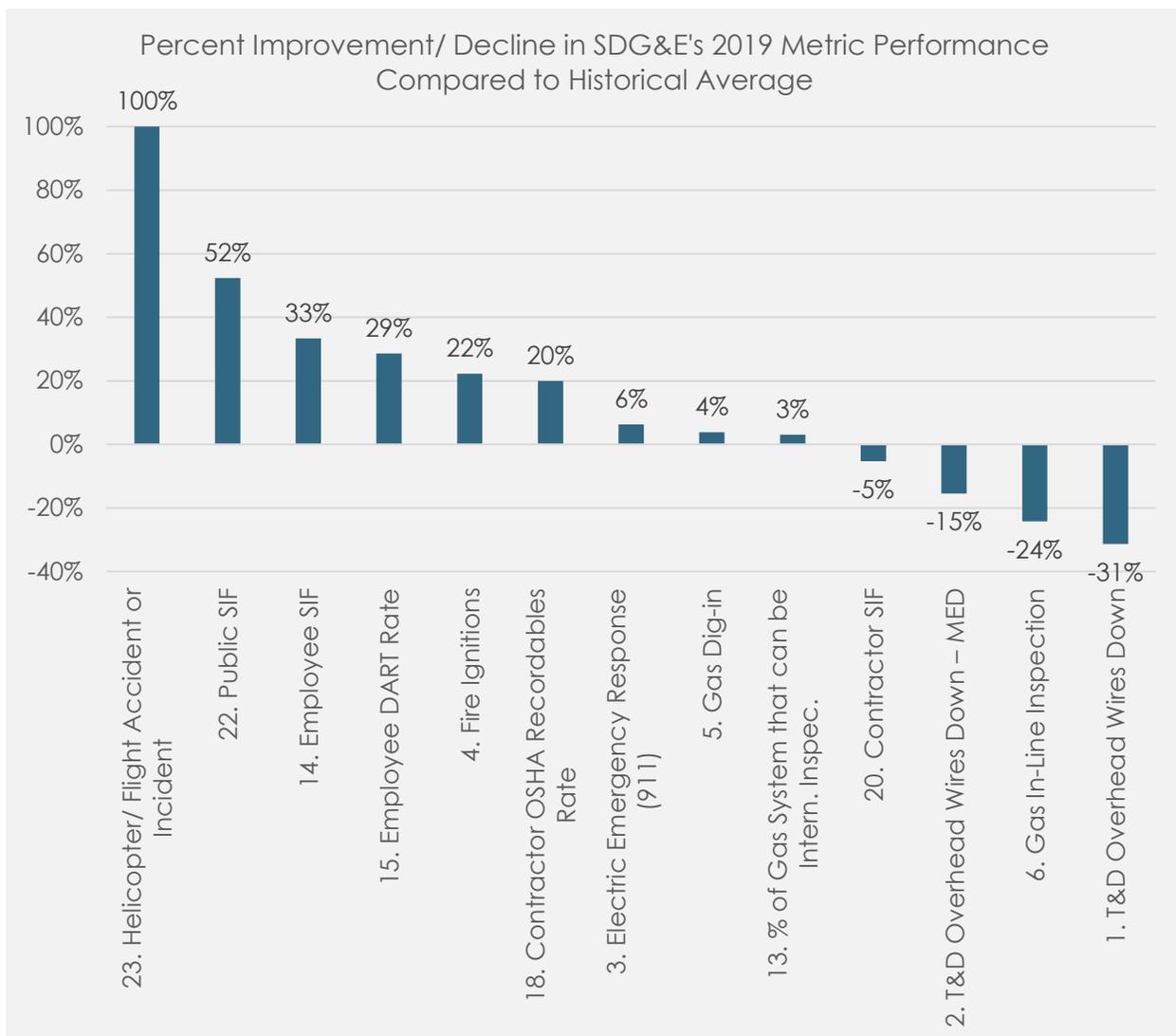


Figure 4. Evaluation of SDG&E's 2019 Metric Performance. For metrics where a higher value is better, positive values show a percent increase in the metric's performance in the graph; for metrics where a lower value is better, (e.g., fire ignitions, wires down, SIF, etc.), positive values show a percent decrease in the metric's performance.

III. Compliance with Requirements in D.19-04-20

This section reviews SDG&E's compliance with requirements within D.19-04-20.

Ordering Paragraph 2 requires data for the last ten years for all safety performance metrics for which such data exist.

SDG&E reports that they included data for the last ten years when possible.

Observations: For seven of their 18 metrics, SDG&E included data for the last ten years.

Ordering Paragraph 3 requires the utility to submit current year data on public serious injuries and fatalities (SIF).

Pursuant to Ordering Paragraph 3 of D.19-04-020, SDG&E provided SED staff with its data on Public Serious Injuries and Fatalities sixty days prior to the due date for this report on January 31, 2020, fulfilling this requirement.

Observations: SDG&E complies with the requirement in this ordering paragraph.

Ordering Paragraph 6 (a) requires the utility to identify all metrics linked to or used in any way for the purpose of determining executive compensation levels and/or incentives, regardless of whether or not systems are in place to control bias, and including all metrics linked to individual and group performance goals; executive compensation.

SDG&E emphasizes employee and operational safety in their variable pay plans, referred to as the Incentive Compensation Plans (ICP). Within the narrative accompanying each metric, SDG&E states whether the metric was linked to executive compensation or incentives in 2019.

SDG&E's executive compensation focuses on SDG&E's key priorities, the most important of which is safety. Executive compensation is determined by Base Pay, Variable Pay, and Sempra Energy's Long-term Incentive Plan. SDG&E has increased the weighting of safety measures in variable pay plans in recent years, such that safety-related measures composed 59% of SDG&E's Executive Incentive Compensation Plan in 2019. Pursuant to Assembly Bill AB 1054 (2019), SDG&E's incentive compensation is based on meeting performance metrics that are measurable and enforceable for all executive officers. There are sixteen performance goals within the category of "Public & Employee Safety Operations" for Executive and non-executive Incentive Compensation Plans, which create incentives to meet specified safety goals. SDG&E's Board of Directors review and approve the results of each year's ICP and have discretion to reduce or withhold Variable Pay if safety performance goals are not met.

SDG&E reports that 10 of the 18 Safety Performance Metrics were linked to executive compensation in 2019 for all director-level and higher positions through their Executive and non-executive Incentive Compensation Plans in 2019.

Observations: SDG&E provides helpful context for understanding the extent to which safety performance is linked to Variable Pay for executive officers. In the future, it may be beneficial to have a more detailed and quantitative understanding of how much Variable Pay affects overall compensation. We also do not know whose specific compensation is tied to various metrics beyond that it affects all executive officers. Further, we do not have information on if and how the Board of Directors has reduced executive compensation in years in response to SDG&E not meeting its safety performance goals. Without this information, it is not possible for the CPUC to analyze whether decreasing executive compensation in a given year results in the executive taking action to correct safety performance in subsequent years, or if increasing/ maintaining executive compensation encouraged continued good safety behavior. There seems to be a link missing between the basic information tracked with this requirement and its observed effect on safety performance.

Ordering Paragraph 6 (b) requires the utility to identify the Director-level or higher executive positions to which the metric(s) is linked. SDG&E states that the metrics are linked to all executive officers.

Observations: No additional explanation is given to show how many individuals this applies to or which positions were implicated. A more specific response could provide additional context for evaluating this information. .

Ordering Paragraph 6 (c) requires the utility to describe the bias controls that the utility has in place to ensure that reporting of the metric(s) has not been gamed or skewed to support a financial incentive goal.

SDG&E reports that regularly scheduled internal audits are performed by Sempra Energy Audit Services. Audit Services investigates whether SDG&E's processes and business controls are adequate; in compliance with plans, procedures, laws, and contracts; and reflect reliability and integrity of operating and financial information. They report that this independent audit function allows Audit Services to identify if appropriate business controls are in place and designed and functioning properly. SDG&E states having a range of 16 separate safety-related performance measures in their Executive and non-executive ICP serves as a bias control because the company must perform on all 16 measures to achieve target goals, so it is unlikely that all 16 metrics could be gamed.

Observations: While some other utilities included quality assurance/controls as bias controls for metrics, SDG&E only included bias controls related to auditing the results of their ICPs. Therefore, if a metric was not linked to executive compensation, no bias controls were listed for that metric. While this complies with the ordering paragraph, it would be beneficial to know other bias controls in place for all metrics that help assure data quality and accuracy.

Ordering Paragraph 6 (d) requires the utility to Provide three to five examples of how the utility has used Safety Performance Metrics (metrics) data to improve staff and/or contractor training, and/or to take corrective actions to minimize top risks or risk drivers; and, provide three to five examples of how the utility is using metrics data to support risk-based decision-making as required in the Safety Model Assessment Proceeding and Risk Assessment Mitigation Phase (RAMP) processes.

SDG&E notes that they were tracking safety metrics, taking corrective actions, and implementing and improving safety training in years prior to the S-MAP Phase Two Decision. They frame their SPM work as a part of their broader effort to create an enterprise-wide Safety Management System to drive continuous safety improvement for their gas and electric operations. Their goal is to mitigate risk based on predictive analysis rather than on experience of incidents or near-misses.

To illustrate their work towards safety improvement, SDG&E provides three recent examples of improvements to trainings or corrective actions:

1. **Additional Fire Prevention and Safety Training for SDG&E Field Employees – Metric 4:** SDG&E notes that they recently implemented a Wildfire Fire Prevention Training and have a Wildfire Smoke Protection Program training for all employees who have field-related duties.
2. **Enhanced Safe Driving Training – Metric 14, 15, 18, 20, 21, and 22:** To further reduce Controllable Motor Vehicle Incidents, SDG&E is expanding its safe driving program through emerging vehicle technologies, safety equipment, and additional training.
3. **Enhanced “Safety in Action” Program – Metric Nos. 14, 20, and 22:** This initiative will train site level leaders and front-line workers with the data and skills needed to execute Serious Injury and Fatality (SIF) prevention activities. It will also develop tools to measure, evaluate, and eliminate or mitigate SIF exposures.

Additionally, SDG&E provides three examples of how the SPM data is used to support risk-based decision-making:

1. **Capital Planning Process and Resource Allocation Methodology:** Through its annual capital planning process, SDG&E evaluates projects based on metrics including safety. Reprioritizations are made as necessary throughout the year to address new safety concerns, and SDG&E continues to work towards the goal of determining quantitatively the risk reduction per dollar invested.
2. **Monitoring and Auditing Wildfire Mitigation Plan Metrics:** Each year, as a part of the Wildfire Mitigation Plan process, SDG&E managers update their risk assessments and report

- information to senior leadership and SDG&E's Board of Directors. This involves collecting and reporting on risk scores, metrics related to risk drivers and consequences, and other metrics related to progress towards mitigation activities. Additionally, SDG&E implemented a weekly executive WMP dashboard in 2019 that depicts seven key WMP metrics and monitors and reports on WMP progress. SDG&E also began developing a data collection program to collect progress data and metrics for WMP programs and initiatives.
3. **Electric Infrastructure Programs Targeting At-Risk Equipment:** SDG&E uses data and metrics on equipment failure, reliability, and ignitions to inform replacement programs for high-risk equipment.

Observations: SDG&E's six examples fulfill the requirement to show how they use SPM in action. To better understand when they implemented these initiatives and track their progress, SDG&E should include the year in which all efforts were initiated. This would help the CPUC analyze whether the Safety Performance Metrics inform new safety efforts or decision-making. For the three risk mitigation-related examples, it would also be helpful to know which specific metric(s) each example initiative is linked to.

Ordering Paragraph 6 (e) requires the utility to explain how the safety metrics reflect progress against the utility's RAMP and General Rate Case safety goals.

SDG&E describes their goal of further expanding the use of probabilistic models, data, and quantification in addressing enterprise-level risks. They are developing risk registries, a tool that will provide each operating unit with a way to identify and manage risks that occur more frequently at the operating unit level. This will help SDG&E align risks with asset management practices. SDG&E notes that they continually integrate metrics into their risk-based decision-making to evaluate and monitor asset health and inform and demonstrate progress related to investments. Finally, SDG&E is committed to developing an enterprise-wide SMS, which will integrate risk, safety, and asset management under one framework and make progress towards RAMP and GRC safety goals.

Observations: This response provides a clear understanding of how each of the 18 metrics relates to their existing risk-informed decision-making structure and the RAMP process.

Ordering Paragraph 6 (f) requires the utility to provide a high-level summary of their total estimated risk mitigation spending level as approved in their most recent GRC.

SDG&E summarizes total estimated risk spending levels as approved in their most recent GRC for their Operations and Maintenance budget and Capital budget. They provide actual and authorized funding for each RAMP Risk.

Observations: SDG&E's response provides the information required in this ordering paragraph.

Overall Compliance: SDG&E submitted metrics report complies with all the required elements listed in Question 1 above.

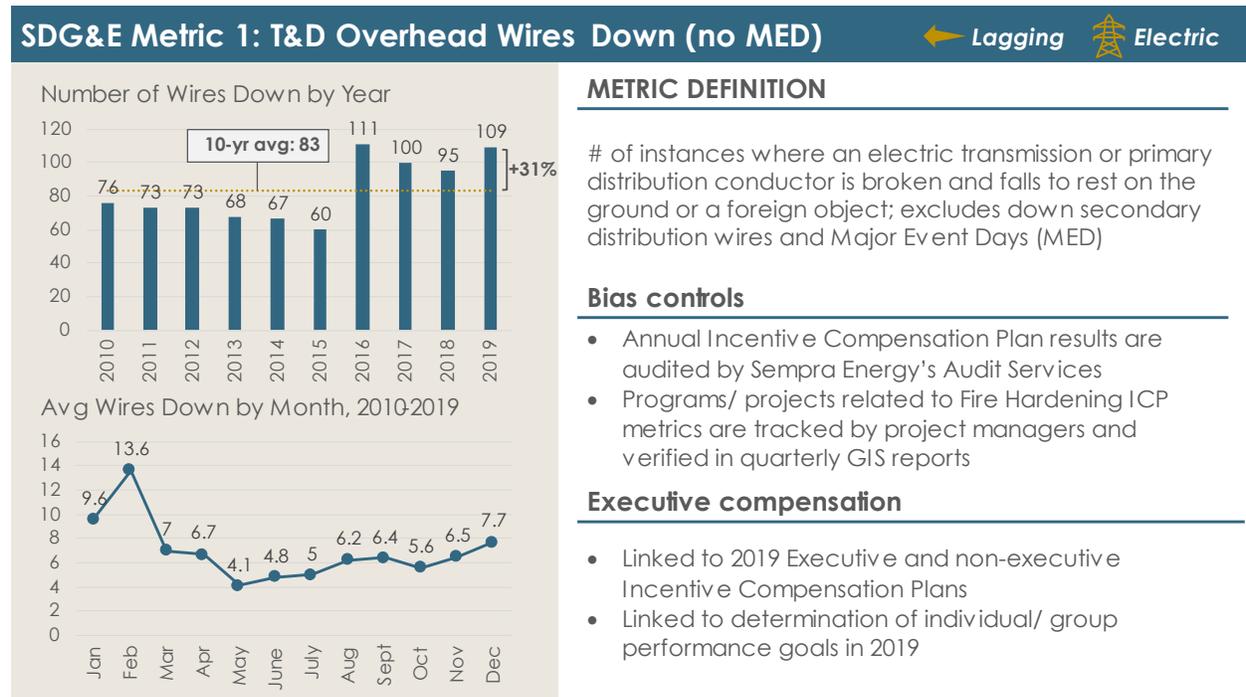
IV. Summary of 2019 Metrics

This section provides an overview of information submitted for each of SDG&E's 18 metrics. The graphic for each metric shows:

- Whether the metric is a leading or lagging indicator: per D.19-04-020, lagging metrics typically indicate safety performance after safety incidents (for example, the number of explosions due to cross bore intrusions), whereas the related leading metric would anticipate potential future safety incidents (in this example, the number of cross bore intrusions found);

- Data reported by the utility: data is plotted in graphs with the historical average, where relevant, to compare 2019 performance to past performance for the metric.
- The definition of the metric from D.19-04-020, associated bias controls, and executive compensation linkages listed for the metric.

To caveat the metric reviews in the following pages, note that the smaller the number of reported occurrences (relative to the exposure), the higher is the uncertainty associated with the reported metric numbers. For example, Serious Injury and Fatality (SIF) values are so few (relative to the total exposure) in any given year that the reported variations from year to year do not necessarily represent improvements or worsening of safety records. For these metrics with few occurrences relative to exposures, observed trends over a much longer period may be necessary to reach credible conclusions based on the data.

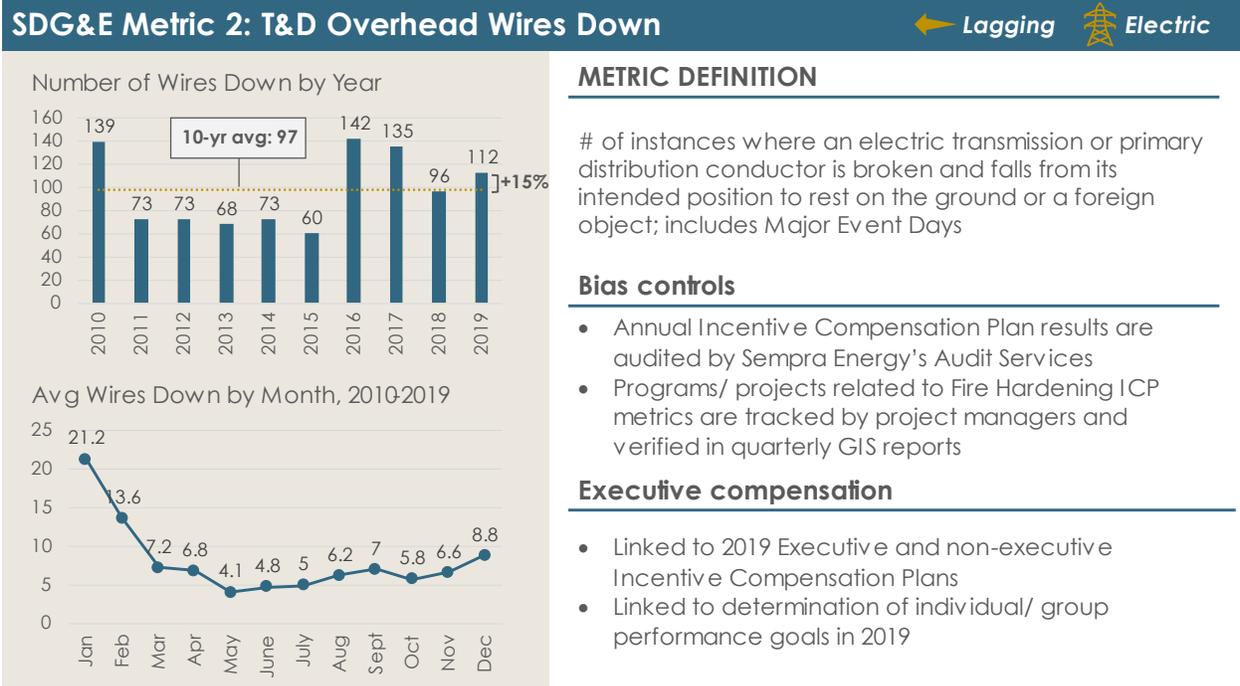


Metric 1 Summary: SDG&E uses data analysis and engineering to identify the drivers of wire-down events and inform program development. They use risk modeling to determine which segments of circuits have the greatest risk of energized wire down events, and to target mitigations such as installing larger conductor, covered conductor, reconfiguring the system, and/or deploying advanced protection schemes through programs such as SDG&E's Fire Risk Mitigation (FiRM), Overhead Public Safety (OPS), and Wire Safety Enhancement (WiSE).

SDG&E notes that this metric is linked to 2019 Executive and non-executive Incentive Compensation Plans through "System and Customer Safety" performance measures including "Fire Hardening: Wood-to-Steel Pole Replacements." This metric is weighted at 3% of the 59% overall safety weighting for Executive ICP and 2% of 34% overall safety weighting for SDG&E's 2019 non-executive ICP. Programs to change out wood poles help mitigate the risk of wire-down events.

Observations: SDG&E provides a detailed summary of how this metric is linked to risk mitigation measures. However, they do not acknowledge the substantial and sustained increase in wire down events since 2016 and the potential causes for this increase. They also do not provide context on the seasonality of wire down

events, which seem to peak in January and February. There are no metric-specific bias controls in place beyond an audit of Incentive Compensation Plan results and tracking in monthly reports.



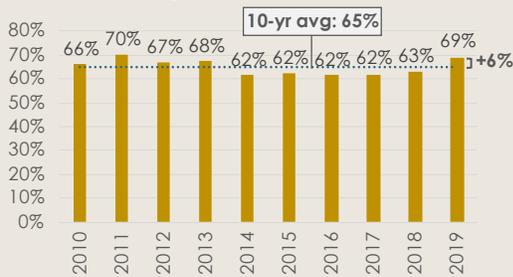
Metric 2 Summary: SDG&E notes that this metric is also linked to 2019 Executive and non-executive Incentive Compensation Plans through “System and Customer Safety” performance measures including “Fire Hardening: Wood-to-Steel Pole Replacements.” This metric is weighted at 3% of the 59% overall safety weighting for Executive ICP and 2% of 34% overall safety weighting for SDG&E’s 2019 non-executive ICP. Programs to change out wood poles help mitigate the risk of wire-down events.

Observations: Secondary distribution wires are not included in SDG&E’s reporting because SDG&E did not track secondary distribution wires prior to 2020, so the data for this metric is incomplete. As with the previous metric, there is a notable increase in wire-down events including Major Event Days beginning in 2016, and SDG&E does not provide context to explain this increase. SDG&E also did not provide context to explain the seasonality of wire down events, which seem to peak in January and February of each year. There are no metric-specific bias controls in place beyond an audit of Incentive Compensation Plan results and tracking in monthly reports.

SDG&E Metric 3: Electric Emergency Response

← Lagging  Electric

Annual Average Response Rate



Monthly Average Response Rate, 2010-2019



METRIC DEFINITION

% of time utility personnel respond (are on-site) within one hour after receiving a 911 (electric related) call, with on-site defined as arriving at the premises to which the 911 call relates

Bias controls

- No bias controls listed

Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

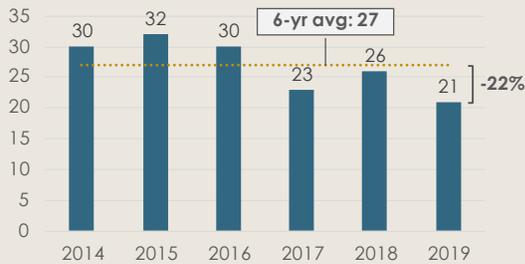
Metric 3 Summary: SDG&E notes that their performance on this metric has improved in recent years, but they had not previously reported this data publicly. Since June 2019, SDG&E reports that they have implemented data collection and auditing enhancements to reflect on-site arrival times more accurately. In previous years, SDG&E noticed instances of delayed reporting of actual on-scene arrival times, so they state that they adjusted their pre-2019 values to correct for anomalies due to human error. SDG&E is evaluating other ways to improve data collection for this metric in future years.

Observations: Part of the improvement in response time observed in 2019 is likely from the data collection changes that SDG&E notes. SDG&E did not state how they determined which pre-2019 values might be erroneous and how they adjusted them. Additionally, SDG&E did not provide context to help explain the seasonality in this metric. This metric is not linked to executive compensation and does not include any bias controls.

SDG&E Metric 4: Fire Ignitions

← Lagging  Electric

Number of Ignitions Per Year



Avg Ignitions Per Month, 2014-2019



METRIC DEFINITION

of powerline-involved fire incidents annually reportable to the CPUC per D. 14-02-015. A reportable ignition meets all these criteria: 1) Ignition is associated with a utility's powerlines and 2) something other than the utility's facilities burned and 3) the resulting fire traveled more than one meter from the ignition point

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services
- Programs/ projects related to this metric are tracked by project managers and verified in quarterly GIS reports

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 4 Summary: SDG&E reports that they implement protocols to reduce the risk of ignition to the system when operating conditions reach elevated or extreme levels. They note that climate projections trend towards continued warmer and dryer conditions, leading to fuels being more receptive to ignition. SDG&E's Wildfire Mitigation Plan aims to reduce the likelihood of an ignition and its consequences if it occurs; through this effort, they will track data to inform and adapt mitigation activities to the highest areas of risk. The major ignition drivers that SDG&E has observed are contact from an outside source and equipment failure. In 2019, SDG&E implemented an Ignition Management Program to track and analyze ignitions and potential ignitions to detect patterns. They also continue to implement grid hardening efforts.

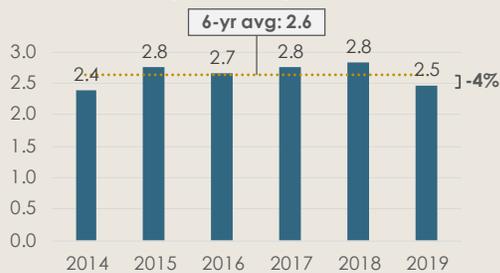
This metric is linked to SDG&E's 2019 Executive and non-executive ICP plans through two "Fire and Public Safety" performance measures: Wood to Steel Pole Replacements and Wildfire Safety Communications. Wildfire Safety Communications measures the percent of fire safety messages confirmed as received by customers sent prior to a Public Safety Power Shutoff Event. These metrics are each weighted at 3% of the 59% safety weighting for SDG&E's 2019 Executive ICP and 2% (Fire Hardening) and 1% (Wildfire Safety Communications) of the 34% safety weighting for SDG&E's 2019 non-executive ICP.

Observations: SDG&E's narrative context for this metric thoroughly describes how they track risk drivers for this metric and implement necessary mitigation measures. They describe recent efforts to improve performance for this metric and address the highest-risk drivers. SDG&E could explain the seasonality of this metric, and how seasonality is affecting the climate projections they describe in their narrative. There are no metric-specific bias controls in place beyond an audit of Incentive Compensation Plan results and tracking in monthly reports.

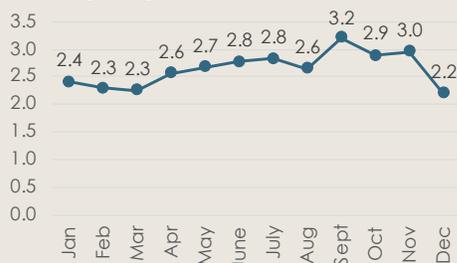
SDG&E Metric 5: Gas Dig -In

← Lagging 🔥 Gas

Annual Average Gas Dig-Ins per Month



Average Dig-Ins Per Month, 2014-2019



METRIC DEFINITION

of 3rd party gas dig-ins per 1,000 Underground Service Alert (USA) tags/tickets for gas; excludes fiber and Electric tickets. Any damage (impact or exposure) that results in a repair or replacement of underground gas facility as a result of an excavation, caused by someone other than the utility or a utility contractor

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 5 Summary: SDG&E notes that third party gas dig-ins is identified as a RAMP risk for SDG&E. SDG&E analyzed the drivers of third-party dig in incidents and found that 50% were due to lack of notifications to 811 USA for locate and mark ticket and approximately 34% were due to insufficient excavation practices. They promote safe digging through their Public Awareness Program and stakeholder outreach.

This metric is linked to SDG&E's 2019 Executive and non-executive Incentive Compensation Plans through a gas safety metric for "Damage Prevention (Damages per USA Ticket Rate)." This metric is weighted at 3% of the 59% safety weighting for SDG&E's 2019 Executive ICP and 2% of the 34% safety weighting for SDG&E's 2019 non-executive ICP.

Observations: SDG&E's inclusion of data on risk drivers for this metric is informative. In future years, the CPUC can track whether SDG&E's programs aimed at reducing the risk of specific drivers was effective at reducing third party gas dig-ins. There are no metric-specific bias controls for this metric beyond the Annual ICP results being audited by Sempra Energy's Audit Services

SDG&E Metric 6: Gas In-Line Inspection

← Leading Gas

Annual Miles Inspected by In-Line Inspection



Miles inspected in 2019



Average annual miles inspected, 2010-2019

METRIC DEFINITION

Total miles of transmission pipe inspected by in-line inspection

Bias controls

- No bias controls listed

Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

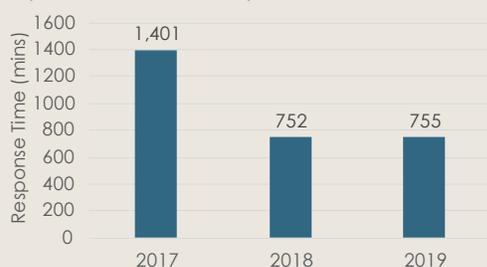
Metric 6 Summary: SDG&E notes that through the federally-mandated Transmission Integrity Management Program (TIMP), they identify threats to transmission lines, determine the risk posed by those threats, schedule prescribed assessments to evaluate threats, collect information about the condition of pipelines, and take actions to minimize risks.

Observations: While SDG&E notes that the numbers of assessment and mitigation activities planned under TIMP varies from year to year, and that transmission pipelines are required to be assessed at least once every seven years, it is unclear how many or what percent of transmission miles utilities should strive to inspect each year. Given that the total miles of transmission pipelines vary from utility to utility, this metric cannot be easily compared across utilities. To compare this metric across utilities, it would need to be converted to a ratio of miles inspected to total miles in the service territory. There are no bias controls included for this metric.

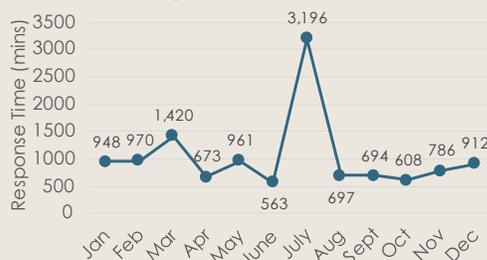
SDG&E Metric 8: Shut in the Gas Average Time – Mains

← Lagging Gas

Reported Median Response Time



Monthly Average Response Time, 2017-2019



METRIC DEFINITION

The average time (in minutes) required for the utility to stop the flow of gas during incidents involving mains when responding to any unplanned/uncontrolled release of gas.

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 8 Summary: SDG&E reports that they survey their gas distribution system for leakage at intervals of one, three, or five years depending on characteristics including pipe material, operating pressure, and proximity of the pipe to population densities. If a leak is found, SDG&E either remediates it or monitors it. Data from surveys feeds into risk models for pipeline replacement. SDG&E is implementing its Leak Compliance Plan and 26 Mandatory Practices required through SB 1371. SDG&E attributes the decrease in shut in time between 2017 and 2018 to the establishment of the Gas Emergency Response Crews on shift 24-hours a day to address emergencies. SDG&E notes that this data is considered preliminary because this is the first time they have broken down this information between Mains and Services. They are evaluating their data collection process to determine its validity, accuracy, and completeness.

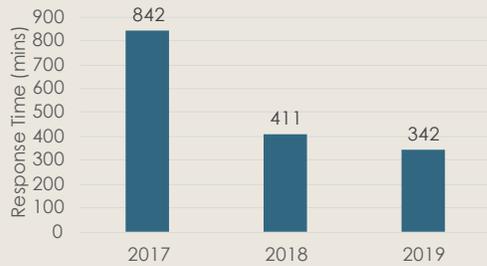
This metric is linked to SDG&E's 2019 Executive and non-executive Compensation Plans through gas safety metric for "P1 Gas Response Time (Minutes)." This metric is weighted at 2% of the 59% safety weighting for SDG&E's 2019 Executive ICP and 1% of the 34% safety weighting for SDG&E's 2019 non-executive ICP. This metric is linked to all SDG&E director level or higher positions, covered in either the 2019 Executive or 2019 non-executive ICP.

Observations: It appears that SDG&E may be interpreting this metric differently than PG&E, as SDG&E's response time was substantially higher than PG&E's average of 118 minutes for 2012-2019. PG&E may have only included incidents where a gas dig-in occurred, measuring how quickly the gas operator responds to stop the flow of gas in their reporting. In contrast, SDG&E may be including the response times for uncontrolled releases found during routine gas surveys, in addition to incidents where a gas dig-in occurred. The metric definition should be clarified to ensure that all utilities are reporting analogous information. There are no metric-specific bias controls listed for this metric beyond annual audits of ICP results.

SDG&E Metric 9: Shut in the Gas Average Time – Services

← Lagging Gas

Reported Median Response Time



Monthly Average Response Time, 2017-2019



METRIC DEFINITION

The average time (minutes) that a Gas Service Representative (GSR) or qualified first responder (Gas Crew, Leak Surveyor, etc.) takes to respond and stop gas flow during incidents involving services.

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 9 Summary: Again, SDG&E notes that they survey its gas distribution system for leakage at frequencies determined based on the pipe material involved, the operating pressure, whether the pipe is under cathodic protection, and the proximity of the pipe to various population densities. This metric is linked to SDG&E's 2019 Executive and non-executive Compensation Plans through gas safety metric for "P1 Gas Response Time (Minutes)." This metric is weighted at 2% of the 59% safety weighting for SDG&E's 2019 Executive ICP and 1% of the 34% safety weighting for SDG&E's 2019 non-executive ICP. It is linked to all SDG&E director level or higher positions, covered in either the 2019 Executive or 2019 non-executive ICP.

Observations: As with the previous metric, SDG&E's average response time was substantially higher than PG&E's eight-year average of 51 minutes. This may indicate that the utilities are including different information in their reporting for this metric. There are no metric-specific bias controls listed for this metric beyond annual audits of ICP results.

SDG&E Metric 10: Cross Bore Intrusions

← Leading  Gas

Cross Bore Intrusions– 2012

Month	Cross bore intrusions per 1,000 inspections
January 2012	0
February 2012	0
March 2012	0
April 2012	0
May 2012	0
June 2012	0
July 2012	0
August 2012	0.2
September 2012	0.1
October 2012	0.1
November 2012	0.1
December 2012	0.1
2012 Average	0.05

METRIC DEFINITION

of cross bore intrusions found per 1,000 inspections

Bias controls

- No bias controls listed

Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

Metric 9 Summary: SDG&E reports that they completed all sewer lateral inspections by 2012 through its Sewer Lateral Inspection Project; one cross bore intrusion was found and repaired. They state that sewer laterals will be inspected “as they are identified,” and cross bore intrusions will be remediated if found.

Observations: It is unclear if SDG&E will complete another round of sewer lateral inspections in future years. Other utilities completed inspections each year. What is the recommended frequency of these inspections? There are no bias controls listed for this metric.

SDG&E Metric 11: Gas Emergency Response – Mean

← Lagging 

Reported Median Response Time



Monthly Average Response Time, 2017-2019



METRIC DEFINITION

The average time that a Gas Service Representative or a qualified first responder takes to respond after receiving a call which results in an emergency order

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 11 Summary: SDG&E reports that their Customer Service Field technicians respond to calls of gas leaks or odors and performs gas leak investigations. Their Emergency Management organization provides planning and guidance for responding before, during, and after an incident. SDG&E attributes improvement in response times in part to the addition of dedicated emergency response staff. They are evaluating strategies to improve gas emergency crew locational responsibilities and initiatives to improve the accuracy of data collection and resolve technical issues.

This metric is linked to SDG&E's 2019 Executive and non-executive Compensation Plans through gas safety metric for "P1 Gas Response Time (Minutes)." This metric is weighted at 2% of the 59% safety weighting for SDG&E's 2019 Executive ICP and 1% of the 34% safety weighting for SDG&E's 2019 non-executive ICP. This metric is linked to all SDG&E director level or higher positions, covered in either the 2019 Executive or 2019 non-executive ICP.

Observations: There are not enough years of data to draw conclusions about trends for this metric. SDG&E does not describe why there is so much monthly variation in average response time. There are no metric-specific bias controls listed for this metric beyond annual audits of ICP results.

SDG&E Metric 13: % of Gas System that can be Internally Inspected

← Leading Gas

Percent of Gas System that can be Internally Inspected



2019 ratio



2012-2019 average ratio

METRIC DEFINITION

The ratio of transmission pipe miles that can be inspected internally to all transmission pipe miles

Bias controls

- No bias controls listed

Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

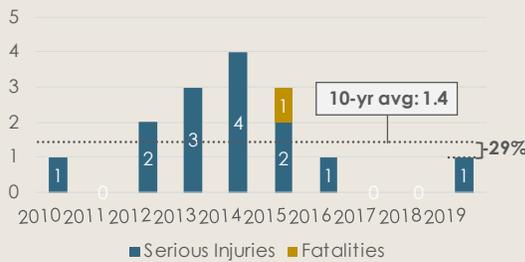
Metric 13 Summary: As described within the narrative context for Metric 6, SDG&E's Transmission Integrity Management Program identifies and addresses threats to transmission pipelines, and pipelines are assessed at a minimum of every seven year. SDG&E notes that this metric represents the ratio of two metrics that are tracked and reported to PHMSA: (1) transmission miles that can be inspected internally, and (2) the number of transmission miles. This is the first time SDG&E has used these two metrics to calculate and report this percentage.

Observations: The percent of the gas system that can be internally inspected has increased gradually since 2012. SDG&E does not state whether they anticipate that this trend will continue in future years. There are no bias controls listed for this metric.

SDG&E Metric 14: Employee Serious Injuries and Fatalities

← Lagging + Injuries

Number of Serious Injuries and Fatalities



Number of serious injuries/fatalities in 2019



Average number of serious injuries/fatalities, 2010-2019

METRIC DEFINITION

of employee work-related injuries or illnesses annually that result in a fatality, inpatient hospitalization for more than 24 hours (other than for observation purposes), a loss of any member of the body, or any serious degree of permanent disfigurement

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 14 Summary: SDG&E reports an extensive range of initiatives related to employee safety including the Injury and Illness Prevention Program, Safety Training, Inspections, Stop Work Authority, Close Call/Near Miss Program, Job Observations, Incident Investigations, Safe Driving Program, Executive Safety Council Team Meeting Dialogs, Field and Office Safety Committees, Electric Safety Subcommittees, Gas Safety Subcommittee, Safety Tailgates, Safety Meetings, Safety Stand-downs, Safety Congress and Leadership Awards. The Close Call/ Near Miss Program encourages SDG&E employees to report close calls that had the potential to result in injury, illness, or damage (but did not). Through their Safety in Action Program, SDG&E will measure and design steps to mitigate SIF exposures.

This metric is linked to SDG&E's 2019 Executive and non-executive Compensation Plans through five employee safety related metrics: Zero Employee Electric Contacts (no employee makes direct electrical contact with any part of their body that results in a disfigurement, dismemberment, or extended hospitalization requiring substantial medical treatment); Lost Time Incident Rate (measures the number of OSHA Recordable Illnesses or Injuries resulting in Days Away from Work, per 100 full-time employees); Controllable Motor Vehicle Incidents; Environmental Safety Compliance Management Program (ESCMP) Findings Mediated; and Field Observations. These metrics are each weighted 3% - 4% of the overall 59% public and employee safety operations measures in the 2019 Executive ICP and applies to all SDG&E executives covered by the plan and are weighted at 1% - 4% of the overall 34% of public and employee safety operations measures of the 2019 non-executive ICP and applies to all SDG&E employees covered by the plan. All of SDG&E director level or higher positions are covered in either the 2019 Executive or 2019 non-executive ICP.

Observations: SDG&E thoroughly describes their various programs aimed at eliminating workforce injuries and fatalities, which appear to have contributed to SDG&E's low SIF numbers in recent years. SDG&E has reported zero or one SIF for the past four years. However, as previously stated, the smaller the number of reported occurrences (relative to the exposure) for a metric, the higher is the uncertainty associated with the reported metric numbers. There are no metric-specific bias controls included for this metric beyond annual audits of ICP results.

SDG&E Metric 15: Employee DART Rate

← Lagging + Injuries



METRIC DEFINITION

Rate is calculated based on number of OSHA - recordable injuries resulting in Days Away from work and/or Days on Restricted Duty or Job Transfer, and hours worked

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 15 Summary: SDG&E reports that in 2019, they achieved their lowest year-end DART case rate on record, and the DART rate has fallen nearly 60% in the last 10 years. SDG&E attributes this trend to strong injury case management and evaluation of initiatives to eliminate or mitigate exposure to workplace injuries, as well as the efforts listed for Metric 14.

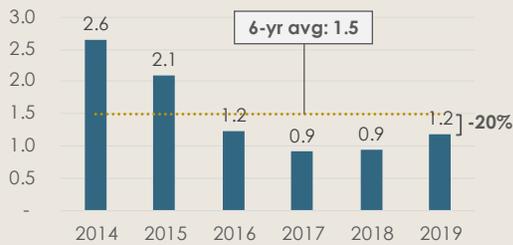
This metric is linked to SDG&E's 2019 Executive and non-executive Compensation Plans through the Lost Time Incident (LTI) Rate, expressed as the number of OSHA Recordable Injuries or Illnesses resulting in Days Away from Work, per 100 full-time employees. This measure is weighted at 4% of the overall 59% public and employee safety operations measures in the 2019 Executive ICP and at 4% of the overall 34% public and employee safety operations measures in the 2019 non-executive ICP.

Observations: As SDG&E reports, there has been a progressive decrease in employee DART rate since 2010. The only bias control for this metric is that annual ICP results, including all safety-related performance metrics, are audited by Sempra Energy's Audit Services.

SDG&E Metric 18: Contractor OSHA Recordable Rate

← Lagging + Injuries

Annual Average OSHA Recordable Rate



Monthly Average OSHA Recordable Rate, 2014-2019



METRIC DEFINITION

Rate is calculated as # of OSHA recordable incidents times 200,000 divided by contractor hours worked, where an OSHA recordable incident is an occupational (job-related) injury or illness that requires medical treatment beyond first aid, or results in work restrictions, death or loss of consciousness

Bias controls

- No bias controls listed

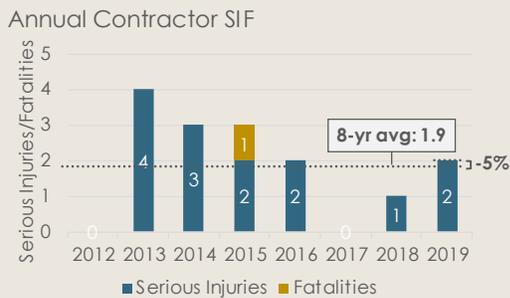
Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

Metric 18 Summary: SDG&E reports that they implemented a Contractor Safety Oversight Program to standardize their approach to contractor safety. Contractor Safety Services provides oversight to Class 1 Contractors to verify that program requirements are being followed through field safety observations. In 2019, SDG&E notes that they expanded the contractor businesses reporting to the third-party contractor safety program, resulting in many contractor businesses reporting for the first time with increased oversight and scrutiny. SDG&E is evaluating new contractor safety initiatives such as updating the Class 1 Contractor Safety Manual and holding contractor quarterly and monthly meetings to educate and increase communication.

Observations: The metric definition does not state which contractors are required to be included in reporting. As stated by SDG&E, they expanded the contractors included in this metric in 2019, which may have affected metric performance. To compare this metric more accurately across utilities, the same types of contractors should be accounted for across utilities. There are no bias controls listed for this metric.

SDG&E Metric 20: Contractor Serious Injuries and Fatalities ← Lagging + Injuries



2/0

Number of serious injuries/fatalities in 2019

**1.8/
0.1**

Average number of serious injuries/fatalities, 2012-2019

METRIC DEFINITION

of contractor workrelated injuries or illnesses annually that result in a fatality, inpatient hospitalization for more than 24 hours (other than for observation purposes), a loss of any member of the body, or any serious degree of permanent disfigurement

Bias controls

- No bias controls listed

Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

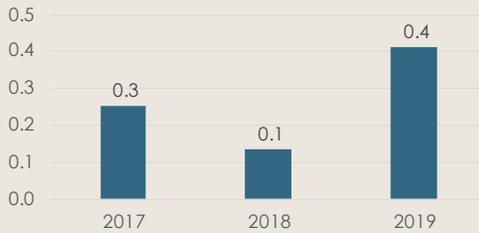
Metric 20 Summary: In addition to the contractor safety efforts listed for Metric 18, SDG&E reports that their programs including “Stop the Job” and “Near Miss Reporting” aim to further reduce the risk of SIF to Class 1 contractors. Contractors are required to report all incidents including near miss/close calls immediately and in a monthly report, per the Class 1 Contractor Safety Manual. This manual will be updated annually or as needed to accommodate new requirements. SDG&E also plans to develop a manual for Class 2 contractors, and to streamline the process for Class 1 Contractors to submit their near miss/ close call incidents.

Observations: There are no bias controls listed for this metric. It does not appear that SDG&E has any strategies for validating the information that Class 1 contractors report to them. Additionally, we do not know if the same types of contractors were included in reporting for this metric from 2012 to 2019, or if SDG&E expanded the businesses required to report in recent years as with the previous metric.

SDG&E Metric 21: Contractor Lost Work Day Case Rate

← Lagging + Injuries

Annual Avg. Contractor LWD Case Rate



Avg. Contractor LWD Monthly Case Rate, 2017-2019



METRIC DEFINITION

Rate = # of LWD cases / productive hours worked % 200,000; measures the # of Lost Workday (LWD) cases incurred for contractors per 200,000 hours worked, where a Lost Workday Case is a current year OSHA Recordable incident that has resulted in at least one lost workday

Bias controls

- No bias controls listed

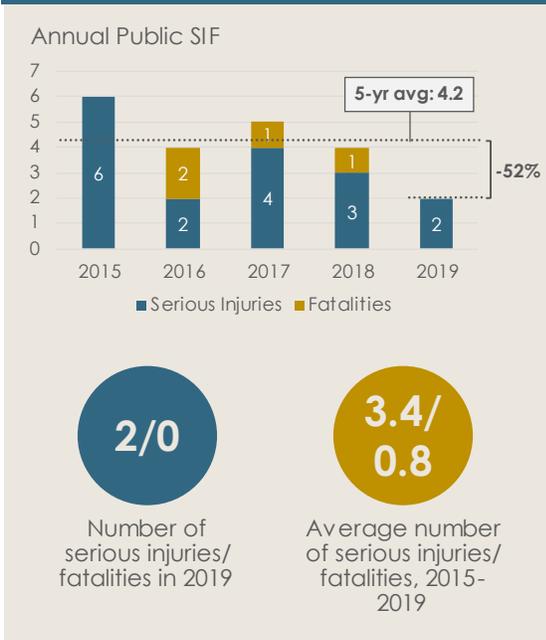
Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

Metric 21 Summary: SDG&E reports that they have a third-party administrator, ISNetwork, to verify the pre-qualification requirements for Class 1 Contractors. In 2019, SDG&E's Contractor Safety increased the scope of contractors that report to the third-party data management system. SDG&E states that as a result of this expansion, they saw an increase in contractor recordable rates.

Observations: To compare this metric across utilities, it would be helpful to know which contractors are included in reporting for the metric for each utility. SDG&E does not explain the potential reasons for seasonality for this metric. Additional years of reporting will be needed to comment on trends in contractor LWD case rate. There are no bias controls listed for this metric.

SDG&E Metric 22: Public Serious Injuries and Fatalities (SIF) ← Lagging + Injuries



METRIC DEFINITION

of public work-related injuries or illnesses annually that result in a fatality, inpatient hospitalization for more than 24 hours (other than for observation purposes), a loss of any member of the body, or any serious degree of permanent disfigurement

Bias controls

- Annual Incentive Compensation Plan results are audited by Sempra Energy's Audit Services

Executive compensation

- Linked to 2019 Executive and non-executive Incentive Compensation Plans
- Linked to determination of individual/ group performance goals in 2019

Metric 22 Summary: SDG&E describes that they conduct public awareness efforts related to company facilities, Public Safety Power Shut Off program, gas line locations, downed power lines, safe digging practices, and other topics. These communication efforts help customers identify and prevent hazardous situations and safety issues. They note that while this metric includes incidents caused by utility vehicles used during business activities, it does not include vehicle contact with stationary equipment.

This metric is linked to SDG&E's 2019 Executive and non-executive Compensation Plans through "public and employee safety operations" system and customer safety performance goals. These goals include Replacement of "Do Not Operate Energized" Switches, Fire Hardening: Wood-to-Steel Pole Replacements, Wildfire Safety Communications, Distribution System Integrity – Miles Vintage Replacement, Damage Prevention (Damages per USA Ticket Rate), Mobile Home Park Retrofit Program (Spaces with To-the-Meter Installed), P1 Gas Response Time (Minutes), PSES Line 1600 – Projected Advanced to Late State Design, System Average Interruption Duration Index (SAD), Worst Circuit: SAIDI, and Worst Circuit: SAFI. Collectively, these system and customer safety performance goals compose 24% of the overall 59% public and employee safety operations measures in the 2019 Executive ICP and 21% of the overall 34% public and employee safety operations measures in the 2019 non-executive ICP.

Observations: SDG&E did not provide context on the most significant drivers for public SIF. Without knowing the major causes of incidents, it is difficult to anticipate the impact of programs they described in their narrative, such as public communication campaigns. As previously stated, the smaller the number of reported occurrences (relative to the exposure) for a metric, the higher is the uncertainty associated with the reported metric numbers. Additional years of data may be needed to understand trends in performance for this metric. The only bias control for this metric is that annual ICP results, including all safety-related performance metrics, are audited by Sempra Energy's Audit Services.

SDG&E Metric 23: Helicopter/Flight Accident or Incident

← Lagging 🚗 Vehicles

Number of Helicopter/ Flight Accident or Incidents per 100,000 Flight Hours



METRIC DEFINITION

of accidents or incidents (as defined in 49 CFR Section 830.5 "Immediate Notification") per 100,000 flight hours, defined by Federal Aviation Regulations (FARs), reportable to FAA per 49-CFR-830.

Bias controls

- No bias controls listed

Executive compensation

- Not linked to executive compensation
- Not linked to determination of individual/ group performance goals
- Not linked to executive positions

Metric 23 Summary: SDG&E reports that their Aviation Services Department (ASD) has an Aviation Operations Manual that provides guidance and instructions on how flight operations must be conducted for all SDG&E and contractor flight personnel. Additionally, ASD periodically reviews safety policies and objectives, conducts onsite observations of helicopter/ flight personnel, briefings by all contracted operators to pilots and ground support crew on any incident, and programs targeted to mitigate the risk created by increased numbers of drone and helicopter contractor flights.

Observations: There are no bias controls listed for this metric.

V. Conclusion & Recommendations

SDG&E's first SPM Report provides helpful context for each metric beyond what was required by D.19-04-02. They describe recent initiatives to improve data collection for each metric, and efforts to improve metric performance. In future reports, SDG&E may consider the following:

- State which executive-level positions are covered by the Executive ICP and which are covered by the non-executive ICP, and the number of executive positions that are affected.
- In the narrative context for metrics, provide information on whether performance for that metric was above or below the historic average, and if possible, provide context to explain performance in the most recent year. SDG&E should also provide context on potential risk drivers for the metric.
- Include metric-specific bias controls for metrics where possible, in addition to the general statement that executive incentives can be audited by Sempra Audit Services.
- If there are few years of data on any particular metric, describe why that is the case and what future data tracking will consist of (for example, there was only 2012 data for Metric 10, cross bore intrusions).
- There was significant overlap between the responses and examples provided for SDG&E and SoCalGas, which is expected given that they are both Sempra utilities; however, SDG&E should ensure that the information they provide is SDG&E-specific.

The CPUC will meet with SDG&E to better understand these issues and other gaps in the metric information they reported, which were noted throughout this document.

CPUC is considering the development of Safety and Operational Metrics as part of the S-MAP proceeding (R.20-07-013) that could supersede these Safety Performance Metrics. Such a framework could include requiring utilities to compare their metrics to short and long-term trends and requiring utilities to set targets for metrics where appropriate.

Finally, some metrics such as wires down would be more useful for comparison and contextual purposes if they were expressed as rates rather than raw numbers. For example, SDG&E's wires down are not comparable to PG&E's because SDG&E has substantially fewer miles of line and thus lower exposure.