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Appendix B

Adopted Safety Performance Metrics

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
1. Transmission & Distribution (T&D) Overhead Wires-Down Non-Major Event Days	Wildfire Transmission Overhead Conductor Distribution Overhead Conductor Primary	Electric	Number of wires down events	Number of instances where an electric transmission or primary distribution conductor is broken, or remains intact, and falls from its intended position to rest on the ground or a foreign object; a conductor is considered energized unless confirmed in an idle state (i.e. normally de-energized); excludes down secondary distribution wires and "Major Event Days" (typically due to severe storm events) as defined by the IEEE.[1]	Lagging	PG&E, SCE, SDG&E
2. Transmission & Distribution (T&D) Overhead Wires-Down Major Event Days	Wildfire Transmission Overhead Conductor Distribution Overhead Conductor Primary	Electric	Number of wires down events	Number of instances where an electric transmission or primary distribution conductor is broken, or remains intact, and falls from its intended position to rest on the ground or a foreign object; a conductor is considered energized unless confirmed in an idle state (i.e. normally de-energized); includes down secondary distribution wires. Includes "Major Event Days" (typically due to severe storm events) as defined by the IEEE.	Lagging	PG&E, SCE, SDG&E

[1] As defined by IEEE Standard 1366-2012, a Major Event Day is a day when the daily SAIDI exceeds a threshold value, T_{MED}, that is 2.5 standard deviations above the mean of the lognormal distribution based on daily SAIDI values for the previous five years (IEEE, Classification of Major Event Days, at 1-4, available as of August 12, 2021 at https://cmte.ieee.org/pes-drwg/wp-content/uploads/sites/61/2003-01-Major-Events-Classification-v3.pdf.).

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3. Electric Emergency Response Time	Wildfire Overhead Conductor Public Safety Worker Safety	Electric	The time in minutes that an electric crew person or a qualified first responder takes to respond after receiving a call which results in an emergency order.	Average Time in minutes to Respond On-site to an Electric Emergency Notification from the time of notification to the time a Representative (or qualified first responder) arrived onsite. The data used to determine the Average Time shall be provided in increments as defined in General Order (GO) 112-F 123.2 (c).	Lagging	PG&E, SCE, SDG&E
4. Fire Ignitions	Overhead Conductor Wildfire Public Safety Worker Safety Catastrophic Event Preparedness	Electric	Number of ignitions	The number of fire incidents annually reportable to the California Public Utilities Commission (CPUC) per Decision 14-02-015.	Lagging	PG&E, SCE, SDG&E
5. Gas Dig-in	Transmission Pipeline Failure - Rupture with Ignition Distribution Pipeline Rupture with Ignition (non-Cross Bore) Catastrophic Damage involving Gas Infrastructure (Dig-Ins)	Gas	The number of gas dig-ins by any party per 1,000 USA tags/tickets	The number of gas dig-ins per 1,000 Underground Service Alert (USA) tags/tickets for gas. A gas dig-in refers to any damage (impact or exposure) that results in a repair or replacement of underground gas facility as a result of an excavation. Excludes fiber and electric tickets.	Lagging	PG&E, SDG&E, SoCalGas

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
6. Gas In-Line Inspection	Catastrophic Damage Involving High-Pressure Pipeline Failure	Gas	Total number of miles of inspections performed and percentage inspected by ILI.	Total miles of transmission pipelines inspected annually by inline inspection (ILI) and percentage of transmission pipelines inspected annually by inline inspections.	Leading	PG&E, SDG&E, SoCalGas
7. Gas In-Line Inspection Upgrade	Catastrophic Damage Involving High-Pressure Pipeline Failure	Gas	Miles	Miles of gas transmission lines upgraded annually to permit inline inspections.	Leading	PG&E SDG&E, SoCalGas
8. Gas Shut-In Time - Mains	Distribution Pipeline Rupture with Ignition (non-Cross Bore)	Gas	Time in minutes required to stop the flow of gas for Distribution Mains	Median Time to shut-in gas when gas release occurs on a main. The data used to determine the Median Time shall be provided in increments as defined in GO 112-F 123.2 (c) as supplemental information, not as a metric.	Lagging	PG&E, SDG&E, SoCalGas
9. Gas Shut-In Time - Services	Distribution Pipeline Rupture with Ignition (non-Cross Bore)	Gas	Time in minutes required to stop the flow of gas for Distribution Services	Median Time to shut-in gas when gas release occurs on a service. The data used to determine the Median Time shall be provided in increments as defined in GO 112-F 123.2 (c) as supplemental information, not as a metric.	Lagging	PG&E, SDG&E, SoCalGas
10. Cross Bore Intrusions	Catastrophic Damage Involving Medium Pressure Pipeline Failure	Gas	Number of cross bore intrusions per 1,000 inspections	Cross bore intrusions found per 1,000 inspections, reported on an annual basis.	Lagging	PG&E, SDG&E, SoCalGas
11. Gas Emergency Response	Distribution Pipeline Rupture with Ignition	Gas	The time in minutes that a Gas Service Representative or a	Average Time to Respond On-site to a Gas Emergency Notification from the time of notification to the time a Gas Service	Lagging	PG&E, SDG&E, SoCalGas

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
			qualified first responder takes to respond after receiving a call which results in an emergency order.	Representative (or qualified first responder) arrived onsite. The data used to determine the Average Time shall be provided in increments as defined in GO 112-F 123.2 (c) as supplemental information, not as a metric.		
12. Natural Gas Storage Baseline Assessments Performed	Gas storage	Gas	Number of Assessments completed/Number scheduled or targeted.	Metric tracks the progress of completing baseline and reassessment inspections that were expected to be completed within a given year. It reports the number of storage well periodic baseline assessments completed as a percentage of the number scheduled to be completed in the period. The number scheduled will depend on any regulatory required inspections as well as any initiated by the utility.	Lagging	PG&E, SDG&E, SoCalGas
13. Gas Pipelines That Can Be Internally Inspected	Catastrophic Damage Involving High-Pressure Pipeline Failure	Gas	Percentage	Total miles and percent of system that can be internally inspected ("pigged") relative to all transmission pipelines in the system.	Leading	PG&E, SDG&E, SoCalGas
14.-Employee Days Away, Restricted and Transfer (DART) Rate	Employee Safety	Injuries	DART Cases times 200,000 divided by employee hours worked	DART Rate is calculated based on number of Occupational Safety and Health Administration (OSHA)-recordable injuries resulting in Days Away from work and/or Days on Restricted Duty or Job Transfer, and hours worked.	Lagging	PG&E, SCE, SDG&E, SoCalGas
15. Rate of SIF Actual (Employee)	Employee Safety	Injuries	Number of SIF-Actual cases among employees x 200,000/employee hours worked	Rate of SIF Actual[2] (Employee) is calculated using the formula: Number of SIF-Actual cases among employees x 200,000 / employee hours worked, where SIF Actual is counted using the methodology developed by the Edison Electrical	Lagging	PG&E, SCE, SDG&E, SoCalGas

[2] A SIF Actual case as determined using the methodology approved by the Edison Electrical Institute's Occupational Health and Safety Committee. Available here: https://app.esafetyline.net/eeisafetysurvey/Downloads/h_sif.pdf.

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
				Institute's Occupational Health and Safety Committee.		

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
16. Rate of Serious Injuries or Fatalities (SIF) Actual (Contractor)	Contractor Safety	Injuries	Number of SIF-Actual cases among contractors x 200,000/contractor hours worked	Rate of SIF Actual[3] (Contractor) is calculated using the formula: Number of SIF-Actual cases among contractors x 200,000 / contractor hours worked, where SIF Actual is counted using the methodology approved by the Edison Electrical Institute's Occupational Health and Safety Committee.	Lagging	PG&E, SCE, SDG&E, SoCalGas
17. Rate of SIF Potential (Employee)	Employee Safety	Injuries	Number of SIF-Potential cases among employees x 200,000/employee hours worked	Rate of SIF Potential (Employee) is calculated using the formula: Number of SIF Potential cases among employees x 200,000/employee hours worked, where a SIF incident, in this case would be events that could have led to a reportable SIF. Potential SIF incidents are identified using the Edison Electric Institute Safety Classification and Learning Model.[4] As a supplemental reporting requirement to the Potential SIF Rate (Employee), the utility should provide information on program area where the SIF Potential Occurred and the lesson learned from the event.	Leading	PG&E, SCE, SDG&E, SoCalGas

[3] A SIF Actual case as determined using the methodology developed by the Edison Electrical Institute's Occupational Health and Safety Committee. Available here: https://app.esafetyline.net/eeisafetysurvey/Downloads/h_sif.pdf.

[4] Edison Electric Institute Safety Classification and Learning Model by Dr. Matthew Hallowell https://esafetyline.net/eei/docs/eeiSCLmodel.pdf

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
18. Rate of SIF Potential (Contractor)	Contractor Safety	Injuries	Number of SIF-Potential cases among contractors x 200,000/contractor hours worked	Rate of SIF Potential (contractor) is calculated using the formula: Number of SIF Potential cases among employees x 200,000/contractor hours worked, where a SIF incident, in this case would be events that could have led to a reportable SIF. Potential SIF incidents are identified using the Edison Electric Institute Safety Classification and Learning Model.[5] As a supplemental reporting requirement to the Potential SIF Rate (contractor), the utility should provide information on program area where the SIF Potential occurred, and the lesson learned from the event.	Leading	PG&E, SCE, SDG&E, SoCalGas
19. Contractor Days Away, Restricted Transfer (DART)	Contractor Safety	Injuries	OSHA DART Rate.	DART Rate: Days Away, Restricted and Transfer (DART) Cases include OSHA-recordable Lost Work Day Cases and injuries that involve job transfer or restricted work activity. DART Rate is calculated as DART Cases times 200,000 divided by contractor hours worked.	Lagging	PG&E, SCE, SDG&E, SoCalGas
20. Public Serious Injuries and Fatalities	Public Safety	Injuries	Number of Serious Injuries and Fatalities	A fatality or personal injury requiring in-patient hospitalization involving utility facilities or equipment. Equipment includes utility vehicles used during the course of business.	Lagging	PG&E, SCE, SDG&E, SoCalGas

[5] Edison Electric Institute Safety Classification and Learning Model by Dr. Matthew Hallowell https://esafetyline.net/eei/docs/eeiSCLmodel.pdf

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
21. Helicopter/ Flight Accident or Incident	Aviation Safety Helicopter Operations Public Safety Worker Safety Employee Safety	Vehicle	Number 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 Federation Aviation Administration per 49-Code of Federal Regulations (CFR)-830.	Lagging	PG&E, SCE, SDG&E, SoCalGas
22. Percentage of Serious Injury and Fatality Corrective Actions Completed on Time.	Employee Safety Contractor Safety Public Safety	Injuries	Total number of SIF corrective actions completed on time (as measured by the due date accepted by Line of Business Corrective Action Review Boards (CARB)) divided by the total number of SIF corrective actions past due or completed.	The percentage of SIF corrective actions completed on time. A SIF corrective action is one that is tied to a SIF actual or potential injury or near hit.	Leading	PG&E
23. Hard Brake Rate	Motor Vehicle Safety	Vehicle	Total number of hard braking events per thousand miles driven in a given period	The total number of hard braking events (>=8 mph per second decrease in speed) per thousand miles driven in a given period.	Leading	PG&E
24. Driver Call Complaint Rate	Motor Vehicle Safety	Vehicle	Total number of driver complaint calls received per 1 million miles driven	This measures the total number of driver complaint calls received per 1 million miles driven by utility-owned vehicles.	Leading	PG&E
25. Wires-Down not resulting in Automatic De-energization	Electric Overhead, wildfire	Electric	Percentage of wires down occurrences	This metric is defined as the number of occurrences of wire down events in the past calendar year that did not result in automatic (i.e., not manually activated) de-energization by circuit protection devices such as fuses, circuit	Lagging	PG&E SCE SDG&E

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
				breakers, and reclosers, etc. on all portions of a downed conductor that rest on the ground. This metric does not consider possible energization due to induced voltages from magnetic coupling of parallel circuits. Metric excludes secondary conductors and service drops. The metric is reported as a percentage of all wires down events in the past calendar year. Separate metrics are provided for transmission and distribution systems.		
26. Missed Inspections and Patrols for Electric Circuits	Electric Overhead, wildfire	Electric	Percentage of structures that missed inspection relative to total required structures.	Metrics are calculated as annual number of overhead electric structures that did not comply with the inspection frequency requirements divided by total number of overhead electric structures with inspections due in the past calendar year. Separate metrics are provided for patrols, detailed inspections. Separate metrics are provided for primary distribution and transmission overhead circuits. "Minimum patrol frequency" refers to the frequency of patrols as specified in GO 165. "Structures" refers to electric assets such as transformers, switching protective devices, capacitors, lines, poles, etc.	Lagging and Leading	PG&E SCE SDG&E

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
27. Overhead Conductor Size in High Fire Threat District (HFTD), Tiers 2 and 3	Electric Overhead, wildfire	Electric	Percentage relative to total circuit miles	Percentage of primary overhead conductors in Tiers 2 and 3, HFTD that is #6 copper. Secondary conductors are excluded.	Leading	PG&E SCE SDG&E
28. Gas Operation Corrective Actions Backlog	Gas safety	Gas	Percentage of work orders past due for completion in the past calendar year	Total number of overdue work orders generated to correct 49 CFR Part 192 non-compliances or infractions that exceeded the maximum allowable/allotted time frame to complete the work order in the past calendar year divided by the total number of closed or still-open non-compliance or infraction-related work orders in past calendar year, evaluated at the end of the year. Maximum allowable/allotted time is based on either applicable requirement in 49 CFR Part 192, or the utility's internal standards. Separate metrics are provided for gas distribution and gas transmission.	Lagging and Leading	PG&E SDG&E SoCalGas
29. GO-95 Corrective Actions (Tiers 2 and 3, HFTD)	Electric safety and wildfire	Electric	Percentage of corrective actions completed	The number of Priority Level 2 notifications that were completed on time divided by the total number of Priority Level 2 notifications that were due in the calendar year in Tiers 2 and 3, HFTD. Consistent with GO 95 Rule 18 provisions, the proposed metric should exclude notifications that qualify for extensions under reasonable circumstances. Separate metrics are provided for distribution and transmission systems.	Lagging and Leading	PG&E SCE SDG&E

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
30.Gas Overpressure Events	Gas Transmission and Distribution	Gas	Number of occurrences	CPUC-reportable overpressure events are those that met the conditions specified in GO112-F, 122.2(d)(5), but reported on same frequency as the other SPMs. Separate metrics are provided for distribution and transmission systems. The metric measures both gas operational performance and the integrity of gas pipelines.	Lagging and Leading	PG&E SDG&E SoCalGas
31.Gas In-Line Inspections Missed	Gas Transmission	Gas	Number of Missed Inspections	The number of gas pipeline in-line inspections that missed the required reassessment interval, according to the relevant intervals established pursuant to 49 CFR, Part 192.	Leading	PG&E SDG&E SoCalGas
32.Overhead Conductor Safety Index	Wildfire Transmission Overhead Conductor Distribution Overhead Conductor Primary	Electric	Number of occurrences per circuit mile	Overhead Conductor Safety Index is the sum of all annual occurrences on overhead transmission or primary voltage distribution conductors satisfying one or more of the following conditions divided by total circuit miles in the system x 1,000: 1) A conductor or splice becomes physically broken; 2) A conductor is dislodged from its intended design position due to either malfunction of its attachment points and/or supporting structures or contact with foreign objects (including vegetation);	Lagging	PG&E SCE SDG&E

Metric Name	Risks	Category	Units	Metric Description	Leading or lagging indicator?	IOUs Required to Report
				3) A conductor falls from its intended position to rest on the ground or a foreign object; 4) A conductor comes into contact with communication circuits, guy wires, or conductors of a lower voltage; or 5) A power pole carrying normally energized conductors leans by more than 45 degrees in any direction relative to the vertical reference when measured at ground level. Separate metrics are reported for transmission and primary voltage distribution conductors. Secondary voltage conductors and service drops are not included in this metric.		