



## Appendix A

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## Adopted Safety and Operational Metrics for Application to Pacific Gas and Electric Company

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
<b>1</b>	Serious Injuries and Fatalities (SIF) related Safety and Operational Metrics (SOMs)		
<b>1.1</b>	Rate of SIF Actual (Employee)	Rate of SIF Actual <sup>1</sup> (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 Institute's Occupational Health and Safety Committee.	√ Safety Performance Metrics (SPM) #15 (Previously SPM #17)
<b>1.2</b>	Rate of SIF Actual (Contractor)	Rate of SIF Actual (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 developed by the Edison Electrical Institute's Occupational Health and Safety Committee.	√ SPM #16 (Previously SPM #18)

<sup>1</sup> A SIF Actual case as determined using the methodology developed by the Edison Electrical Institute's Occupational Health and Safety Committee.

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
1.3	SIF Actual (Public)	A fatality or personal injury requiring in-patient hospitalization for other than medical observations that an authority having jurisdiction has determined resulted directly from incorrect operation of equipment, failure or malfunction of utility-owned equipment, or failure to comply with any Commission rule or standard. Equipment includes utility or contractor vehicles and aircraft used during the course of business.	√ SPM #20 (Previously SPM #22)
2	Reliability Related SOMs		
Sustained interruption is defined as: “Any interruption not classified as a part of a momentary event. That is, any interruption that lasts more than five minutes.” <sup>2</sup>			
2.1	System Average Interruption Duration (SAIDI) (Unplanned)	SAIDI (Unplanned) = average duration of sustained interruptions per metered customer due to all unplanned outages, excluding on Major Event Days, in a calendar year. <sup>3</sup> “Average duration” is defined as: Sum of (duration of interruption * # of customer interruptions) / Total number of customers served. “Duration” is defined as: Customer hours of outages.	N/A

<sup>2</sup> [IEEE 1366- Reliability Indices Presentation](#), February 19, 2019, at 6.

<sup>3</sup> January 15, 2021 Response of Pacific Gas and Electric Company to Assigned Commissioner’s Ruling Regarding Development of Safety and Operational Metrics available as of September 2, 2021 here: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M359/K864/359864708.PDF>

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
		Includes all transmission and distribution outages.	
2.2	System Average Interruption Frequency (SAIFI) (Unplanned)	SAIFI (Unplanned) = average frequency of sustained interruptions due to all unplanned outages per metered customer, except on Major Event Days, in a calendar year. “Average frequency” is defined as: Total # of customer interruptions / Total # of customers served. Includes all transmission and distribution outages.	N/A
<p><b>System Average Outages due to Vegetation and Equipment Damage in High Fire Thread District (HFTD) Areas</b></p> <p>Report <i>System Average Outages due to Vegetation and Equipment Damage</i> SOMs specific to Tier 2 and 3 High Fire Threat Districts.<sup>4</sup></p> <p>For Vegetation and Equipment Damage in HFTD (<i>Major Event Days</i> &amp; (<i>Non-Major Event Days</i>) SOMs, PG&amp;E should delineate outages due to contact with vegetation versus outages caused by equipment, and distribution versus transmission assets. For equipment damage-related outages, the metrics should also be segregated by overhead versus underground.</p>			
2.3	System Average Outages due to Vegetation and Equipment Damage in HFTD Areas	Average number of sustained outages on Major Event Days per 100 circuit miles in HFTD per metered customer, in a calendar year, where each sustained outage is defined as:	N/A

<sup>4</sup> D.17-01-009 Adopting the Work Plan for the Development of Fire Map 2, as modified by D.17-06-024 Amending the Work Plan for the Development of Fire Map 2.

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
	(Major Event Days)	total number of customers interrupted / total number of customers served.	
2.4	System Average Outages due to Vegetation and Equipment Damage in HFTD Areas (Non-Major Event Days)	Average number of sustained outages on Non-Major Event Days per 100 circuit miles in HFTD per metered customer, in a calendar year, where each sustained outage is defined as: total number of customers interrupted / total number of customers served	N/A
3	Electricity Related SOMs		
Wires Down Related SOMs A <i>Wires Down</i> event is defined as follows: A Wires Down event occurs when a normally energized overhead primary or transmission conductor is broken and falls from its intended position to rest on the ground or a foreign object. This definition applies to all Wires Down related metrics.			
3.1	Wires Down Major Event Days in HFTD Areas (Distribution)	Number of Wires Down events on Major Event Days involving overhead primary or secondary distribution circuits divided by total circuit miles of overhead primary distribution lines x 1,000, in HFTD Areas in a calendar year.	√ SPM #2 (Except that SPM #2 does not specify HFTD and is reported as number instead of rate of Wires Down events)
3.2	Wires Down Non-	Number of Wires Down events on Non-Major Event Days involving overhead primary	√

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
	Major Event Days in HFTD Areas (Distribution)	distribution circuits divided by total circuit miles of overhead primary distribution lines x 1,000, in HFTD Areas, in a calendar year.	SPM #1 (Except that SPM #1 does not specify HFTD and is reported as number instead of rate of Wires Down events)
3.3	Wires Down Major Event Days in HFTD Areas (Transmission)	Number of Wires Down events on Major Event Days involving overhead transmission circuits divided by total circuit miles of overhead transmission lines x 1,000, in HFTD Areas in a calendar year.	√ SPM #2 (Except that SPM #2 does not specify HFTD and is reported as number instead of rate of Wires Down events)
3.4	Wires Down Non-Major Event Days in HFTD Areas (Transmission)	Number of Wires Down events on Non-Major Event Days involving overhead transmission circuits divided by total circuit miles of overhead transmission lines x 1,000, in HFTD Areas, in a calendar year.	√ SPM #1 (Except that SPM #1 does not specify HFTD and is reported as number instead of rate of Wire Down events)
3.5	Wires Down Red Flag Warning Days in HFTD Areas (Distribution)	Number of Wires Down events in HFTD Areas on Red Flag Warning Days involving overhead primary distribution circuits divided by Red Flag Warning Distribution Circuit-Mile Days in HFTD Areas, in a calendar year.	N/A
3.6	Wires Down Red Flag Warning Days in HFTD	Number of Wires Down events in HFTD Areas on Red Flag Warning Days involving overhead transmission circuits	N/A

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
	Areas (Transmission)	divided by Red Flag Warning Transmission Circuit-Mile Days in HFTD Areas, in a calendar year.	
<b>Patrols &amp; Inspections Related SOMs</b>			
<b>3.7</b>	Missed Overhead Distribution Patrols in HFTD Areas	<p>Overhead Distribution Patrols in HFTD:</p> <p>Total number of overhead electric distribution structures that fell below the minimum patrol frequency requirements divided by the total number of overhead electric distribution structures that required patrols, in HFTD area in past calendar year.</p> <p>where,</p> <p>“Minimum patrol frequency” refers to the frequency of patrols as specified in General Order (GO) 165.</p> <p>“Structures” refers to electric assets such as transformers, switching protective devices, capacitors, lines, poles, etc.</p>	<p>√</p> <p>SPM #26</p> <p>(Except that the previous SPM #33 includes all areas)</p>
<b>3.8</b>	Missed Overhead Distribution Detailed Inspections in HFTD Areas	<p>Overhead Distribution Detailed Inspections in HFTD:</p> <p>Total number of structures that fell below the minimum inspection frequency requirements divided by the total number of structures that required inspection, in HFTD area in past calendar year.</p> <p>where,</p> <p>“Minimum inspection frequency” refers to the frequency of scheduled inspections as specified in GO 165.</p>	<p>√</p> <p>SPM #26</p> <p>(Except that the previous SPM #33 includes all areas)</p>

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		“Structures” refers to electric assets such as transformers, switching protective devices, capacitors, lines, poles, etc.	
<b>3.9</b>	Missed Overhead Transmission Patrols in HFTD Areas	<p>Same as SOM #3.4 definition, except for Transmission instead of Distribution.</p> <p>Overhead Transmission Patrols in HFTD: Total number of structures that fell below the minimum patrol frequency requirements divided by the total number of structures that required patrols, in HFTD area in past calendar year.</p> <p>where, “Minimum patrol frequency” refers to the frequency of patrols requirements, as applicable.</p> <p>“Structures” refers to electric assets such as transformers, switching protective devices, capacitors, lines, poles, etc.</p>	<p>√</p> <p>SPM #26 (Except that the previous SPM #33 includes all areas)</p>
<b>3.10</b>	Missed Overhead Transmission Detailed Inspections in HFTD Areas	<p>Overhead Transmission Detailed Inspections in HFTD: Total number of structures that fell below the minimum inspection frequency requirements divided by the total number of structures that required inspection, in HFTD area in past calendar year.</p> <p>where, “Minimum inspection frequency” refers to the frequency of scheduled inspections requirements, as applicable.</p> <p>“Structures” refers to electric assets such as transformers, switching protective devices, capacitors, lines, poles, etc.</p>	<p>√</p> <p>SPM #26 (Except that the previous SPM #33 includes all areas)</p>

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3.11	GO-95 Corrective Actions in HFTDs	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 HFTD. Consistent with GO 95 Rule 18 provisions, the proposed metric should exclude notifications that qualify for extensions under reasonable circumstances.	√ SPM #29 (Previously SPM #43)
3.12	Electric Emergency Response Time	<p>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 GO 112-F 123.2 (c).</p> <p>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.</p>	√ SPM #3



Number Index	Staff Proposed SOMs	Definition	Included as SPM?
<b>Ignitions &amp; Wildfires Related SOMs</b> “Ignition” refers to the number of CPUC-Reportable ignitions and any other ignitions determined by the Authority Having Jurisdiction to originate from utility infrastructure. <sup>5</sup>			
<b>3.13</b>	Number of CPUC-Reportable Ignitions in HFTD Areas (Distribution)	Number of CPUC-reportable ignitions involving overhead distribution circuits in HFTD Areas	√ SPM #4 (Except that SPM #4 in all areas and does not include the updated SOM definition)
<b>3.14</b>	Percentage of CPUC-Reportable Ignitions in HFTD (Distribution)	Number of CPUC-reportable ignitions involving overhead distribution circuits divided by circuit-miles of overhead primary distribution lines x 1,000 in HFTD Areas.	N/A
<b>3.15</b>	Number of CPUC-Reportable Ignitions in HFTD (Transmission)	Number of CPUC-reportable ignitions involving overhead transmission circuits in HFTD Areas.	√ SPM #4 (Except that SPM #4 in all areas and does not include the updated SOM definition)
<b>3.16</b>	Percentage of CPUC-Reportable Ignitions in HFTD (Transmission)	Number of CPUC-reportable ignitions involving overhead transmission circuits divided by circuit-miles of overhead transmission lines x 1,000 in HFTD Areas.	N/A

<sup>5</sup>The number of powerline-involved fire incidents annually reportable to the CPUC per Decision 14-02-015. A reportable fire incident includes all of the following: 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.

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4	Natural Gas Related SOMs		
4.1	Number of Gas Dig-Ins per 1000 USA tickets on Transmission and Distribution pipelines	The number of gas dig-ins per 1,000 Underground Service Alert (USA) tickets received for gas. A gas dig-in refers to damage (impact or exposure) which occurs during excavation activities and results in a repair or replacement of an underground gas facility. Excludes fiber and electric tickets.	√ SPM #5
4.2	Number of Overpressure Events	Overpressure events as reportable under GO112-F 122.2(d)(5).	√ SPM #30 Previously SPM #44
4.3	Time to Respond On-site to Emergency Notification	Average time to respond on-site to a Gas Emergency Notification from the time of notification to the time a Gas Service 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.	√ SPM #11
4.4	Gas Shut-In Time, 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.	√ SPM #8

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
4.5	Gas Shut-In Time, 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.	√ SPM #9
4.6	Uncontrolled Release of Gas on Transmission Pipelines	The number of leaks, ruptures, or other loss of containment on transmission lines for the reporting period, including gas releases reported under Title 49 CFR Part 191.3	N/A
4.7	Time to Resolve Hazardous Conditions	Median response time to resolve Grade 1 leaks. Time starts when the utility first receives the report and ends when a utility's qualified representative determines, per the utility's emergency standards, that the reported leak is not hazardous or the utility's representative completes actions to mitigate a hazardous leak and render it as being non-hazardous (i.e., by shutting-off gas supply, eliminating subsurface leak migration, repair, etc.) per the utility's standards.  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	N/A
5	Clean Energy Goals		

Number Index	Staff Proposed SOMs	Definition	Included as SPM?
5.1	Clean Energy Goals Compliance Metrics	Progress toward PG&E bundled and direct access (aggregated) individual load serving entity zero-emitting resource minimum procurement obligations (net qualifying capacity amounts) as adopted in Decision (D.) 21-06-035, D.19-11-016 and any subsequent decision(s) in Rulemaking.20-05-003, or a successor proceeding, updating these requirements.	N/A
6	Quality of Service <sup>6</sup>		
6.1	Quality of Service Metrics	The Average Speed of Answer for Emergencies metric is a safety measure relating to multiple risks, as well as a quality of service and management measure, and is defined as follows:  Average Speed of Answer in seconds for Emergency calls handled in Contact Center Operations.	N/A

<sup>6</sup> The Staff SOMs Proposal (Appendix C) inadvertently omitted this SOM but it was discussed and proposed in Section 9 of the Staff Proposal.