ATTACHMENT 3

(Utility Survey)

Wildfire Mitigation Maturity Utility Survey

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Survey response instructions

As outlined above, the maturity assessment will be applied by the WSD to track the utility's maturity over time. The following survey, in addition to other inputs, will be used to inform the utility's maturity level to establish a baseline maturity in 2020, as well as establish a target maturity for 2023.

Utilities complete the following survey by:

1. indicating the most appropriate response option to each question based on the **presently employed practices and capabilities of the utility**
2. indicating your **expected response to each question by January 2023** based on your expected growth in your maturity over the 3 year period of your WMP to **set a 3-year target maturity**

Importantly, utilities shall only indicate that they meet a given response option if they meet **all** of the characteristics described within that response option, across **all** instances where that question is valid.

For example, if a utility meets all criteria for answer 2 of a given question and all but one criterion for answer 3, that utility must select answer 2. Similarly, if a utility meets all criteria for answer 2 of a given question over 60% of its territory but meets all criteria for answer 1 over 100% of its territory, the utility must select answer 1.

The answers to these questions will be used as one input in assessing utility maturity. The assessment of maturity will also leverage each utility's WMP submission, other supporting documents and disclosures, and select audits of relevant inputs where deemed necessary.

A Risk mapping and simulation

A.I Climate scenario modeling and sensitivities

Capability 1

A.I.a How sophisticated is utility's ability to estimate the risk of weather scenarios?				
i. **No clear ability** to understand incremental risk under various weather scenarios	ii. Wildfire risk can be **reliably determined based on weather and its impacts**	iii. Weather scenarios can be reliably **categorized by level of risk**	iv. **Risk for various weather scenarios** can be reliably estimated	v. **Incremental risk** of foreseeable weather scenarios can be **accurately and quantitatively estimated**

A.I.b How are scenarios assessed?				
i. **No formal assessment process**	ii. **Independent expert** assessment	iii. Independent expert assessment, **supported by historical data of incidents and near misses**	iv. Independent expert assessment, supported by historical data of incidents and near misses, **and updated based on real-time learning during weather event**	

A.I.c How granular is utility's ability to model scenarios?				
1. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

A.I.d How automated is the tool?				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

A.I.e What additional information is used to estimate model weather scenarios and their risk?				
i. None	ii. **Weather, how weather effects failure modes and propagation**	iii. Weather, how weather effects failure modes and propagation, **existing hardware**	iv. Weather **measured at the circuit level**, how weather effects failure modes and propagation, existing hardware	v. Weather measured at the circuit level, how weather effects failure modes and propagation, existing hardware, **level of vegetation**

A.II Ignition risk estimation

Capability 2

A.II.a How is ignition risk calculated?				
i. **No reliable tool or process** to estimate risk across the grid based on characteristics and condition of lines, equipment, and vegetation	ii. Tools and **processes can reliably categorize the risk of ignition** across the grid into at least two categories based on characteristics and condition of lines, equipment, surrounding vegetation, **and localized weather patterns**	iii. Tools and processes **can quantitatively and accurately assess the risk of ignition** across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns	iv. Tools and processes **can quantitatively and accurately assess the risk of ignition** across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, localized weather patterns, **and flying debris probability, with probability based on specific failure modes and top contributors to those failure modes**	

A.II.b **How automated is the ignition risk calculation tool?**				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

A.II.c **How granular is the tool?**				
i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

A.II.d **How is risk assessment confirmed? Select all that apply.**				
i. By experts	ii. By historical data	iii. Through real-time learning	iv. None of the above	

A.II.e **What confidence interval, in percent, does the utility use in its risk assessment?**			
>60%	>80%	>90%	>95%

A.III Estimation of wildfire consequences for communities

Capability 3

A.III.a **How is estimated consequence of ignition relayed?**				
i .**No translation** of ignition risk estimates to potential consequences for communities	ii. Ignition events **categorized as low or high risk to communities**	iii. Ignition events **categorized with 5 or more levels of risk to communities**	iv. Consequence of ignition events **quantitatively, accurately, and precisely estimated**	

A.III.b **What metrics are used to estimate the consequence of ignition risk?**				
i. As a function of **at least one of the following:**	ii. As a function **of at least** potential fatalities, and one	iii. As a function of at least potential fatalities,		

structures burned, potential fatalities, or area burned	or both of structures burned, or area burned	structures burned, area burned, **monetary damages, impact on air quality, and impact on GHG reduction goals**		

A.III.c Is the ignition risk impact analysis available for all seasons?				
i. No	ii. Yes			

A.III.d How automated is the ignition risk estimation process?				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

A.III.e How granular is the ignition risk estimation process?				
i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

A.III.f How are the outputs of the ignition risk impact assessment tool evaluated?				
i. Outputs **not evaluated**	ii. Outputs **independently assessed by experts**	iii. Outputs independently assessed by experts **and confirmed by historical data**	iv. Outputs independently assessed by experts **and confirmed based on real time learning, for example, using machine learning**	

A.III.g What other inputs are used to estimate impact?				
i. Level and	i. Level and	iii. Level and	iv. None of the	

conditions of **vegetation and weather**	conditions of **vegetation and weather, including the vegetation specifies immediately surrounding the ignition site**	conditions of **vegetation and weather, including the vegetation specifies immediately surrounding the ignition site and up-to-date moisture content, local weather patterns**	above	

A.IV Estimation of wildfire and PSPS risk-reduction impact

Capability 4

A.IV.a How is risk reduction impact estimated?				
i. **No clear estimation** of risk reduction potential across most initiatives	ii. Approach accurately **estimates risk reduction potential of initiatives averaged across the territory** where such initiatives could be installed	iii. Approach reliably **categorizes initiatives by risk reduction potential**	iv. Approach reliably and accurately **estimates risk reduction of potential for each location**	v. Approach reliably and **quantitatively** estimates risk reduction of potential for each location

A.IV.b How automated is ignition risk reduction impact assessment tool?				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

A.IV.c How granular is the ignition risk reduction impact assessment tool?				
i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

A.IV.d How are ignition risk reduction impact assessment tool estimates assessed?				
i. **No or limited formal evidence** or support for estimates	ii. With **evidence and logical reasoning**	iii. Independent **expert** assessment	iv. Independent expert assessment, **supported by historical data of incidents and near misses**	

A.IV.e What additional information is used to estimate risk reduction impact?				
i. None	ii. **Existing hardware type and condition**	iii. Existing hardware type and condition, **including operating history**	iv. Existing hardware type and condition, including operating history; **level and condition of vegetation; weather**	v. Existing hardware type and condition, including operating history; level and condition of vegetation; weather; **and combination of initiatives already deployed**

A.V Risk maps and simulation algorithms

Capability 5

A.V.a What is the protocol to update risk mapping algorithms?				
i .No defined process for updating risk mapping algorithms	ii. Risk mapping algorithms **updated based on detected deviations of risk model** to ignitions and propagation	iii. Risk mapping algorithms **updated continuously in real time**		

A.V.b How automated is the mechanism to determine whether to update algorithms based on deviations?				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

A.V.c **How are deviations from risk model to ignitions and propagation detected?**				
i. Not currently calculated	ii. Manually	iii. Semi-automated process	iv. Fully automated process	

A.V.d **How are decisions to update algorithms evaluated?**				
i .Not currently evaluated	ii. Independently **evaluated by experts**	iii. Independently evaluated by experts **and historical data**		

A.V.e **What other data is used to make decisions on whether to update algorithms?**				
i. **Historic ignition and propagation data**	ii. **Current** and historic ignition and propagation data	iii. Current and historic ignition and propagation data; **near-miss data**	iv. Current and historic ignition and propagation data; near-miss data; **data from other utilities and other sources**	v. None of the above

B Situational awareness and forecasting

B.I Weather variables collected

Capability 6

B.I.a What weather data is currently collected?				
i. Weather data being collected is **insufficient** to properly understand risks along grid	ii. **Wind being measured** accurately along the grid	iii. **Range of accurate weather variables** that impact risk of ignition and propagation from utility assets	iv. Range of accurate weather variables that impact risk of ignition and propagation from utility assets; additional **data to measure physical impact of weather on grid collected** (e.g., sway in lines, sway in vegetation)	

B.I.b How are measurements validated?				
i. Measurements **not currently validated**	ii. **Manual** field calibration measurements	iii. **Automatic** field calibration measurements	iv. Measurements not currently validated	

B.I.c Are elements that cannot be reliably measured in real time being predicted (e.g., fuel moisture content)?				
i. No	ii. Yes			

B.I.d How many sources are being used to provide data on weather metrics being collected?				
i. None	ii. One	iii. More than one		

B.II Weather data resolution

Capability 7

B.II.a How granular is the weather data that is collected?				
i. Weather data collected **does not accurately reflect local weather conditions** across grid infrastructure	ii. Weather data has sufficient granularity to **reliably measure weather conditions in selected area**	iii. Weather data has sufficient granularity to reliably measure weather conditions in selected area, **and along the entire grid and in all areas needed to predict weather on the grid**	iv. Weather data has sufficient granularity to reliably measure weather conditions in selected area, and along the entire grid and in all areas needed to predict weather on the grid. **Also includes wind estimations at various atmospheric altitudes**	

B.II.b How frequently is data gathered				
i. Less frequently than hourly	ii. At least hourly	iii. At least four times per hour	iv. At least six times per hour	v. At least sixty times per hour

B.II.c How granular is the tool?				
i. Less granular than regional, or no tool at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

B.II.d How automated is the process to measure weather conditions?				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

B.III Weather forecasting ability

Capability 8

B.III.a How sophisticated is the utility's weather forecasting capability?				
i. **No reliable independent weather forecasting ability**	ii. Utility has independent weather forecasting ability **sufficiently accurate to fulfill PSPS requirements**	iii. Utility has the ability to **use a combination of accurate weather stations and external weather data** to make accurate forecasts	iv. Utility has the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts, **and adjusts them in real time based on a learning algorithm and updated weather inputs**	

B.III.b How far in advance can accurate forecasts be prepared?				
i. Less than two weeks in advance	ii. At least two weeks in advance	iii. At least three weeks in advance		

B.III.c At what level of granularity can forecasts be prepared?				
i. Less granular than regional, or no forecasts at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

B.III.d How are results error-checked?				
i. Results are **not error checked**	ii. Results are **error checked against historical weather patterns**	iii. **None of the above**		

B.III.e How automated is the forecast process?				
i. Not automated	ii. Partially (<50%)	iii. Mostly (>=50%)	iv. Fully	

B.IV External sources used in weather forecasting

Capability 9

B.IV.a What source does the utility use for weather data?				
i. Utility **does not use external weather data**	ii. External data used where direct measurements from **utility's own weather stations are not available**	iii. Utility **uses a combination** of accurate weather stations and external weather data	iv. Utility uses a combination of accurate weather stations and external weather data, **and elects to use the data set, as a whole or in composite, that is most accurate**	

B.IV.b How is weather station data checked for errors?				
i. Weather station data is **not checked for errors**	ii. **Mostly manual** processes for error checking weather stations with external data sources	iii. **Mostly automated** processes for error checking weather stations with external data sources	iv. **Completely automated** processes for error checking weather stations with external data sources	v. Completely automated processes for error checking weather stations with external data sources, **and where the utility builds new weather stations or calibrates existing stations, it is based on these error checking processes**

B.IV.c For what is weather data used?				
i. Weather data is **used to make decisions**	ii. Weather data is **used to produce a combined weather map** that can be used to help make decisions	iii. Weather data is **used to create a single visual and configurable live map** that can be used to help make decisions		

B.V Wildfire detection processes and capabilities

Capability 10

B.V.a Are there well-defined procedures for detecting ignitions along the grid?				
i. No	ii. Yes			

B.V.b What equipment is used to detect ignitions?				
i. **No consistent set of equipment** for detecting ignitions along grid	ii. **Well-defined equipment** for detecting ignitions along grid	iii. Well-defined equipment for detecting ignitions along grid, **including remote detection equipment** including cameras	iv. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras, **and satellite monitoring**	

B.V.c How is information on detected ignitions reported?				
i. Detected ignitions are **not reported**	ii. **Procedure exists** for notifying suppression forces	iii. Procedure exists for notifying suppression forces **and key stakeholders**	iv. Procedure **automatically, accurately, and in real time notifies** suppression forces and key stakeholders	v. Procedure automatically, accurately, and in real time notifies suppression forces and key stakeholders, and tracks and reports propagation paths

				to suppression forces in accurately and real time

B.V.d What role does ignition detection software play in wildfire detection?				
i. Ignition detection software **not currently deployed**	ii. Ignition detection software in cameras **used to augment** ignition detection procedures	iii. Ignition detection software in cameras **operates automatically** as part of ignition detection procedures		

C Grid design and system hardening

C.I Approach to prioritizing initiatives across territory

Capability 11

C.I.a How are wildfire risk reduction initiatives prioritized?				
i. Plan **does not clearly prioritize** initiatives geographically to focus on highest risk areas	ii. Plan **prioritizes** risk reduction initiatives to **within only HFTD areas**	iii. Plan prioritizes wildfire risk reduction initiatives **based on local geography and conditions** within only HFTD areas	iv. Plan priorities wildfire risk reduction initiatives across **individual circuits based on local geography and risk estimates**	v. Plan prioritizes wildfire risk reduction initiatives across individual circuits based on local geography and risk estimates, **including estimates of actual impact and taking power delivery uptime into account (e.g., PSPS, reliability, etc.)**

C.II Grid design for minimizing ignition risk

Capability 12

C.II.a **Does the grid design and architecture use higher risk equipment and grid architectures, and lead to many single points of failure?**				
i. Grid design and architecture **does use** higher risk equipment and grid architectures, which lead to many single points of failure	ii. Grid design and architecture **does not use** higher risk equipment and grid architectures, which lead to many single points of failure			

C.II.b **Redundancy exists in grid architecture for circuits of how many customers or more?**				
i. 1000 customers	ii. 500 customers	iii. 100 customers	iv. 10 customers	

C.II.c **Switches in high risk areas are designed such that individual circuits have no more than how many customers on one switch?**				
i. More than 1000 customers	ii. No more than 1000 customers	iii. No more than 500 customers	iv. No more than 100 customers	

C.II.d **What considerations are taken into accounts in grid topology?**				
i. **Egress points** taken into consideration	ii. Egress points **available and mapped** for each customer, **or potential traffic mapped** based on traffic simulation and taken into consideration	iii. Egress points available and mapped for each customer, **and** potential traffic mapped based on traffic simulation and taken into consideration	iv. Egress points available and mapped for each customer, and potential traffic mapped based on traffic simulation and taken into consideration; **microgrids or other means included in architecture to**	v. None of the above

			reduce impact for customers at frequent risk of PSPS	

C.III Grid design for resiliency and minimizing PSPS

Capability 13

C.III.a What level of redundancy does the utility's transmission architecture have?				
i. **Many single points of failure**	ii. **n-1 redundancy** for all circuits subject to PSPS			

C.III.b What level of redundancy does the utility's distribution architecture have?				
i. **Many single points of failure**	ii. **n-1 redundancy** covering at least 50% of customers in HFTD	iii. **n-1 redundancy** covering at least 70% of customers in HFTD	iv. **n-1 redundancy** covering at least 85% of customers in HFTD	

C.III.c What level of sectionalization does the utility's distribution architecture have?				
i. **Many single points of failure**	ii. **Switches** in HFTD areas to individually isolate circuits	ii. **Switches** in HFTD areas to individually isolate circuits, such that no more than 2000 customers sit within one switch	ii. **Switches** in HFTD areas to individually isolate circuits, such that no more than 1000 customers sit within one switch	ii. **Switches** in HFTD areas to individually isolate circuits, such that no more than 200 customers sit within one switch

C.III.d How does the utility consider egress points in its grid topology?				
i. **Does not consider**	ii. Egress points used as an **input** for grid topology design	iii. Egress points **available** and **mapped** for each customer, with potential traffic	iv. Egress points available and mapped for each customer, with potential traffic	

		mapped based on **traffic simulation** and taken into consideration for grid topology design	simulated and taken into consideration for grid topology design, and **microgrids** or other means to reduce consequence for customers at frequent risk of PSPS	

C.IV Risk-based grid hardening and cost efficiency

Capability 14

C.IV.a Does the utility have an understanding of the risk spend efficiency of hardening initiatives?				
i. Utility has no clear understanding of the relative risk spend efficiency of hardening initiatives	ii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives	iii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid		

C.IV.b At what level can estimates be prepared?				
i. Less granular than regional, or not at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

C.IV.c How frequently are estimates updated?				
i. Never	ii. Less frequently than annually	iii. Annually or more frequently		

C.IV.d **What grid hardening initiatives does the utility include within its evaluation?**				
i. None	ii. Some	iii. Most	iv. All	v. All, supported by independent testing

C.IV.e **Can the utility evaluate risk reduction synergies from combination of various initiatives?**				
i. No	ii. Yes			

C.V Grid design and asset innovation

Capability 15

C.V.a **How are new hardening solution initiatives evaluated?**				
i. **No established program** for evaluating the risk spend efficiency of new hardening initiatives	ii. **New initiatives evaluated based** on installation into grid and measuring direct reduction in ignition events	iii. New initiatives evaluated based on installation into grid and measuring direct reduction in ignition events, **and measuring reduction impact on near-miss metrics**	iv. New initiatives **independently** evaluated, **followed by field testing** based on installation into grid and measuring direct reduction in ignition events, and measuring reduction impact on near-miss metrics	

C.V.b **Are results of initiatives shared?**				
i. No	ii. **Yes, with limited partners**	iii. Yes, **extensively with industry, academia, and other utilities**		

C.V.c Is performance of new initiatives independently audited?				
i. No	ii. Yes			

D Asset management and inspections

D.I Asset inventory and condition assessments

Capability 16

D.I.a What information is captured in the equipment inventory database?				
i. There is **no service territory-wide inventory** of electric lines and equipment including their state of wear or disrepair	ii. There is an **accurate inventory of equipment** that may contribute to wildfire risk, including age, state of wear, and expected lifecycle	iii. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, **including records of all inspections and repairs**	iv. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs **and up-to-date work plans on expected future repairs and replacements**	v. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs and up-to-date work plans on expected future repairs and replacements **wherein repairs and sensor outputs are independently audited**

D.I.b How frequently is the condition assessment updated?				
i. Never	ii. Annually	iii. Quarterly	iv. Monthly	v. Hourly

D.I.c **Does all equipment in HFTD areas have the ability to detect and respond to malfunctions?**				
i. **No system and approach are in place** to detect or respond to malfunctions	ii. A system and approach **are in place to reliably detect incipient malfunctions** likely to cause ignition	iii. **Sensorized, continuous monitoring equipment** is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition	iv. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, **with the ability to de-activate electric lines and equipment exhibiting such failure**	

D.I.d **How granular is the inventory?**				
i. There is **no inventory**	ii. At the **span** level	iii. At the **asset** level		

D.II Asset inspection cycle

Capability 17

D.II.a **How frequent are your patrol inspections?**				
i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk equipment		

D.II.b **How are patrol inspections scheduled?**				
i. Based on annual or periodic **schedules**	ii. Based on **up-to-date static maps** of equipment types and environment	iii. **Risk, as determined by predictive modeling** of equipment failure probability and risk causing ignition	iv. Risk, **independently determined** by predictive modeling of equipment failure probability and risk causing ignition	

D.II.c **What are the inputs to scheduling patrol inspections?**				
i. At least annually updated or verified **static maps** of equipment and environment	ii. **Predictive modeling** of equipment failure probability and risk	iii. Predictive modeling **supplemented with continuous monitoring by sensors**	iv. Outdated static maps	

D.II.d **How frequent are detailed inspections?**				
i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk equipment		

D.II.e **How are detailed inspections scheduled?**				
i. Based on annual or periodic **schedules**	ii. Based on **up-to-date static maps** of equipment types and environment	iii. **Risk, as determined by predictive modeling** of equipment failure probability and risk causing ignition	iv. Risk, **independently determined** by predictive modeling of equipment failure probability and risk causing ignition	

D.II.f **What are the inputs to scheduling detailed inspections?**				
i. At least annually updated or verified **static maps** of equipment and environment	ii. **Predictive modeling** of equipment failure probability and risk	iii. Predictive modeling **supplemented with continuous monitoring by sensors**	iv. Outdated static maps	

D.II.g **How frequent are your other inspections?**				
i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk equipment		

D.II.h **How are other inspections scheduled?**				
i. Based on annual or periodic **schedules**	ii. Based on **up-to-date static maps** of equipment types and environment	iii. **Risk, as determined by predictive modeling** of equipment failure probability and risk causing ignition	iv. Risk, **independently determined** by predictive modeling of equipment failure probability and risk causing ignition	

D.II.i **What are the inputs to scheduling other inspections?**				
i. At least annually updated or verified **static maps** of equipment and environment	ii. **Predictive modeling** of equipment failure probability and risk	iii. Predictive modeling **supplemented with continuous monitoring by sensors**	iv. Outdated static maps	

D.III Asset inspection effectiveness

Capability 18

D.III.a What items are captured within inspection procedures and checklists?				
i. Patrol, detailed, enhanced, and other inspection procedures and checklists **do not include all items required** by statute and regulations	ii. Patrol, detailed, enhanced, and other inspection procedures and checklists **include all items required** by statute and regulations	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, **and includes lines and equipment typically responsible for ignitions and near misses**		

D.III.b How are procedures and checklists determined?				
i. Based on s**tatute and regulatory guidelines** only	ii. Based on **predictive modeling** based on vegetation and equipment type, age, and condition	iii. Based on predictive modeling based on equipment type, age, and condition **and validated by independent experts**	iv. Based on predictive modeling based on equipment type, age, and condition and validated by independent experts, **with dynamic adjustments in real time based on deficiencies found during inspection**	

D.III.c At what level of granularity are the depth of checklists, training, and procedures customized?				
i. Across the	ii. Across a **region**	iii. At the **circuit**	iv. At the **span**	v. At the **asset**

service territory		level	level	level

D.IV Asset maintenance and repair

Capability 19

D.IV.a What level are electrical lines and equipment maintained at?				
i. Electric lines and equipment **not consistently maintained** at required condition over multiple circuits	ii. Electrical lines and equipment **maintained as required by regulation**	iii. Electrical lines and equipment maintained as required by regulation, **and additional maintenance done in areas of grid at highest wildfire risk based on detailed risk mapping**		

D.IV.b How are service intervals set?				
i. Based on wildfire risk in relevant **area**	ii. Based on wildfire risk in relevant **circuit**	iii. Based on wildfire risk in relevant circuit, **as well as real-time monitoring from sensors**	iv. None of the above	

D.IV.c What do maintenance and repair procedures take into account?				
i. Wildfire risk	ii. Wildfire risk, **performance history, and past operating conditions**	iii. None of the above		

D.V QA/QC for asset management

Capability 20

D.V.a **How is contractor activity audited?**				
i. **Lack of controls** for auditing work completed, including inspections, for employees or subcontractors	ii. Through an established and functioning audit process to manage and confirm work completed by subcontractors	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, **where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)	iv. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to **automated** audits **using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)	

D.V.b **Do contractors follow the same processes and standards as utility's own employees?**				
i .No	ii. Yes			

D.V.c **How frequently is QA/QC information used to identify deficiencies in quality of work performance and inspections performance?**				
i. Never	ii. Sporadically	iii. On an ad hoc basis	iv. Regularly	v. Real-time

D.V.d **How is work and inspections that do not meet utility-prescribed standards remediated?**				
i **.Lack of effective**	ii. **QA/QC**	iii. QA/QC	iv. QA/QC	

remediation for ineffective inspections or low-quality work	**information is used to identify systemic deficiencies** in quality of work and inspections	information is used to identify systemic deficiencies in quality of work and inspections, **and recommend training based on weaknesses**	information is used to identify systemic deficiencies in quality of work and inspections, **grade individuals**, and recommend **specific pre-made and tested** training based on weaknesses	

D.V.e **Are workforce management software tools used to manage and confirm work completed by subcontractors?**				
i. No	ii. Yes			

E Vegetation management and inspections

E.I Vegetation inventory and condition assessments

Capability 21

E.I.a **What information is captured in the inventory?**				
i. There is **no vegetation inventory** sufficient to determine vegetation clearances across the grid at the time of the last inspection	ii. **Centralized inventory** of vegetation clearances based on most recent inspection	iii. Centralized inventory of vegetation clearances, **including predominant vegetation species and individual high risk-trees across grid**	iv. Centralized inventory of vegetation clearances, including **individual** vegetation species **and their expected growth rate**, as well as individual high risk-trees across grid	v. Centralized inventory of vegetation clearances, including individual vegetation species and their expected growth rate, as well as individual high risk-trees across grid. **Includes up-to-date tree health and moisture**

				content to determine risk of ignition and propagation

E.I.b	**How frequently is inventory updated?**			
i. Never	ii. Annually	iii. Within 1 month of collection	iv. Within 1 week of collection	v. Within 1 day of collection

E.I.c	**Are inspections independently verified by third party experts?**			
i. No	ii. Yes			

E.I.d	**How granular is the inventory?**			
i. Regional	ii. Circuit-based	iii. Span-based	iv. Asset-based	

E.II Vegetation inspection cycle

Capability 22

E.II.a	**How frequent are all types of vegetation inspections?**			
i. **Less frequent** than regulations require	ii. **Consistent** with minimum regulatory requirements	iii. **Above** minimum regulatory requirements, with more frequent inspections for highest risk areas		

E.II.b **How are vegetation inspections scheduled?**				
i. Based on annual or periodic **schedules**	ii. Based on up-to-date **static maps** of predominant vegetation species and environment	iii. **Risk, as determined by predictive modeling** of vegetation growth and growing conditions	iv. **Need, as independently determined by predictive modeling** of vegetation growth and growing conditions	

E.II.c **What are the inputs to scheduling vegetation inspections?**				
i. At least annually-updated **static maps** of vegetation and environment	ii. Up to date, static maps of vegetation and environment, **as well as data on annual growing conditions**	iii. **Predictive modeling** of vegetation growth	iv. Predictive modeling of vegetation growth **supplemented with continuous monitoring by sensors**	iv. Predictive modeling of vegetation growth supplemented with continuous monitoring by sensors and **considering tree health and other vegetation risk factors for more frequent inspections in less healthy areas**

E.III Vegetation inspection effectiveness

Capability 23

E.III.a **What items are captured within inspection procedures and checklists?**				
i. Patrol, detailed, enhanced, and other inspection procedures and checklists **do not include all items required** by statute and regulations	ii. Patrol, detailed, enhanced, and other inspection procedures and checklists **include all items required** by statute and regulations	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, **and includes vegetation types**		

		typically responsible for ignitions and near misses		

E.III.b How are procedures and checklists determined?				
i. Based on s**tatute and regulatory guidelines** only	ii. Based on **predictive modeling** based on vegetation and equipment type, age, and condition	iii. Based on predictive modeling based on vegetation and equipment type, age, and condition **and validated by independent experts**	iv. Based on predictive modeling based on vegetation type, age, and condition and validated by independent experts, **with dynamic adjustments in real time based on deficiencies found during inspection**	

E.III.c At what level of granularity are the depth of checklists, training, and procedures customized?				
i. Across the **service territory**	ii. Across a **region**	iii. At the **circuit** level	iv. At the **span** level	v. At the **asset** level

E.IV Vegetation grow-in mitigation

Capability 24

E.IV.a How does utility clearance around lines and equipment perform relative to expected standards?				
i. Utility often **fails to maintain minimum** statutory and regulatory clearances around all lines and	ii. Utility **meet minimum** statutory and regulatory clearances around all lines and equipment	iii. Utility **exceeds minimum** statutory and regulatory clearances around all lines and equipment		

equipment				

E.IV.b **Does utility meet or exceed minimum statutory or regulatory clearances during all seasons?**				
i. No	ii. Yes			

E.IV.c **What modeling is used to guide clearances around lines and equipment?**				
i. Ignition risk modeling	ii. Ignition and propagation risk modeling	iii. None of the above		

E.IV.d **What biological modeling is used to guide clearance around lines and equipment**				
i. Species growth rates and species limb failure rates	ii. Species growth rates and species limb failure rates, cross referenced with local climatological conditions	iii. None of the above		

E.IV.e **Are community organizations engaged in setting local clearances and protocols?**				
i. No	ii. Yes			

E.IV.f **Does the utility remove vegetation waste along its right of way across the entire grid?**				
i. No	ii. Yes			

E.IV.g **How long after cutting vegetation does the utility remove vegetation waste along right of way?**				
i. Not at all	ii. Longer than 1	iii. Within 1 week	iv. On the same	

	week	or less	day	

E.IV.h Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?				
i. No	ii. Yes			

E.IV.i Does the utility work with partners to identify new cost-effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste?				
i. No	ii. Yes			

E.V Vegetation fall-in mitigation

Capability 25

E.V.a Does the utility have a process for treating vegetation outside of right of ways?				
i. Utility **does not remove** vegetation outside of right of way	ii. Utility **removes some** vegetation outside of right of ways	iii. Utility **systematically removes** vegetation outside of right of way		

E.V.b How is potential vegetation that may pose a threat identified?				
i. **No specific process** in place to systematically identify trees likely to pose a risk	ii. **Based on the height of trees** with potential to make contact with electric lines and equipment	iii. **Based on the probability and consequences of impact** on electric lines and equipment as **determined by risk modeling**	iv. Based on the probability and consequences of impact on electric lines and equipment as determined by risk modeling, **as well as regular and accurate systematic inspections for high-risk trees outside the right of way or environmental and climatological conditions contributing to increased risk**	

E.V.c Is vegetation removed with cooperation from the community?				
i. No	ii. Yes			

E.V.d	**Does the utility remove vegetation waste outside its right of way across the entire grid?**			
i. No	ii. Yes			

E.V.e	**How long after cutting vegetation does the utility remove vegetation waste outside its right of way?**			
i. Not at all	ii. Longer than 1 week	iii. Within 1 week or less	iv. On the same day	

E.V.f	**Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?**			
i. No	ii. Yes			

E.V.g	**Does the utility work with partners to identify new cost-effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste?**			
i. No	ii. Yes			

E.VI QA/QC for vegetation management

Capability 26

E.VI.a **How is contractor activity audited?**				
i. **Lack of controls** for auditing work completed, including inspections, for employees or subcontractors	ii. Through an established and functioning audit process to manage and confirm work completed by subcontractors	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, **where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)	iv. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to **automated** audits **using technologies capable of sampling the contractor's work** (e.g., LiDAR scans, photographic evidence)	

E.VI.b **Do contractors follow the same processes and standards as utility's own employees?**				
i .No	ii. Yes			

E.VI.c **How frequently is QA/QC information used to identify deficiencies in quality of work performance and inspections performance?**				
i. Never	ii. Sporadically	iii. On an ad hoc basis	iv. Regularly	v. Real-time

E.VI.d **How is work and inspections that do not meet utility-prescribed standards remediated?**				
i **.Lack of effective**	ii. **QA/QC**	iii. QA/QC	iv. QA/QC	

remediation for ineffective inspections or low-quality work	**information is used to identify systemic deficiencies** in quality of work and inspections	information is used to identify systemic deficiencies in quality of work and inspections, **and recommend training based on weaknesses**	information is used to identify systemic deficiencies in quality of work and inspections, **grade individuals**, and recommend **specific pre-made and tested** training based on weaknesses	

E.VI.e Are workforce management software tools used to manage and confirm work completed by subcontractors?				
i. No	ii. Yes			

F Grid operations and protocols

F.I Protective equipment and device settings

Capability 27

F.I.a How are grid elements adjusted during high threat weather conditions?				
i. Utility **does not make changes to adjustable equipment** in response to high wildfire threat conditions	ii. Utility **increases sensitivity of risk reduction elements** during high threat weather conditions	iii. Utility increases sensitivity of risk reduction elements during high threat weather conditions **and monitors near misses**	iv. Utility increases sensitivity of risk reduction elements during high threat weather conditions **based on risk mapping** and monitors near misses	

F.I.b Is there an automated process for adjusting sensitivity of grid elements and evaluating effectiveness?				
i. No automated	ii. Partially	iii. Fully automated		

process	automated process	process		

F.I.c **Is there a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements?**				
i. No	ii. Yes			

Processes to incorporate

F.II Incorporating ignition risk factors in grid control

Capability 28

F.II.a **Does the utility have a clearly explained process for determining whether to operate the grid beyond current or voltage designs?**				
i. No	ii. Yes			

F.II.b **Does the utility have systems in place to automatically track operation history including current, loads, and voltage throughout the grid at the circuit level?**				
i. No	ii. Yes			

F.II.c **Does the utility use predictive modeling to shorten the expected life of equipment based on grid operating history, and is that model reviewed?**				
i. **Modeling is not used**	ii. **Modeling is used**, but not evaluated by external experts	iii. Modeling is used, **and the model is evaluated by external experts**		
F.II.d **When does the utility operate the grid above rated voltage and current load?**				
i. During any conditions	ii. Only in conditions that are unlikely to cause	iii. Never		

	wildfire			

F.III PSPS op. model and consequence mitigation

Capability 29

F.III.a How effective is PSPS event forecasting?				
i. PSPS event **frequently forecasted incorrectly**	ii. PSPS event **generally forecasted accurately** with **fewer than 50% of predictions being false positives**	iii. PSPS event generally forecasted accurately with **fewer than 33%** of predictions being false positives	iv. PSPS event generally forecasted accurately with **fewer than 25%** of predictions being false positives	

F.III.b What share of customers are communicated to regarding forecasted PSPS events?				
i. Affected customers are **poorly communicated to,** with a significant portion not communicated to at all	ii. PSPS event are communicated to **>95% of affected customers and >99% of medical baseline** customers in advance of PSPS action	iii. PSPS event are communicated to **>98% of affected customers and >99.5% of medical baseline** customers in advance of PSPS action	iv. PSPS event are communicated to **>99% of affected customers and >99.9% of medical baseline customers** in advance of PSPS action	v. PSPS event are communicated to **>99.9% of affected customers and 100% of medical baseline customers** in advance of PSPS action

F.III.c During PSPS events, what percent of customers complain?				
i. 1% or more	ii. Less than 1%	iii. Less than 0.5%		

F.III.d During PSPS events, does the utility's website go down?				
i. No	ii. Yes			

F.III.e During PSPS events, what is the average downtime per customer?				
i. More than 1 hour	ii. Less than 1 hour	iii. Less than 0.5 hours	iv. Less than 0.25 hours	v. Less than 0.1 hours

F.III.f Are specific resources provided to customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)?				
i. No	ii. Yes			

F.IV Protocols for PSPS initiation

Capability 30

F.IV.a Does the utility have explicit thresholds for activating a PSPS?				
i. Utility has **no clearly explained threshold** for PSPS activation	ii. Utility **has explicit policies and explanation** for the thresholds above which PSPS is activated	iii. Utility has explicit policies and explanation for the thresholds above which PSPS is activated, **but maintains grid in sufficiently low risk condition to not require any PSPS activity, though may de-energize specific circuits upon detection of damaged condition of electrical lines and equipment, or contact with foreign objects**		

F.IV.b	**Has the utility provided resources to mitigate PSPS impact, including providing water, phone charging, and other resources to all those affected by PSPS?**			
i. No	ii. Yes			

F.IV.c	**What is total PSPS duration for those customers affected?**			
i. More than 48 hours on average per year	ii. Less than 48 hours on average per year	iii. Less than 36 hours on average per year	iv. Less than 24 hours on average per year	

F.IV.d	**What share of customers are effect by PSPS events in a given year?**			
i. Greater than 5 %	ii. Less than 5%	iii. Less than 1%	iv. Less than 0.5%	

F.V Protocols for PSPS re-energization

Capability 31

F.V.a	**Is there a process for inspecting de-energized sections of the grid prior to re-energization?**			
i. **Inadequate process** for inspecting de-energized sections of the grid prior to re-energization	ii. **Existing process** for accurately inspecting de-energized sections of the grid prior to re-energization	iii. Existing process for accurately inspecting de-energized sections of the grid prior to re-energization, **augmented with sensors and aerial tools**		

F.V.b	**How automated is the process for inspecting de-energized sections of the grid prior to re-energization?**			
i. Manual process, not automated at all	ii. Partially automated (<50%)	iii. Mostly automated (>=50%)	iv. Primarily automated, minimal manual inputs	

F.V.c	How long after de-energization weather has subsided can the grid be returned to service?			
i. Longer than 24 hours	ii. Within 24 hours	iii. Within 12 hours	iv. Within 4 hours	v. Within 2 hours

F.V.d	Are any after-event ignitions caused following re-energization of de-energized sections?			
i. No	ii. Yes			

F.VI Ignition prevention and suppression

Capability 32

F.VI.a	Does the utility have defined policies around the role of workers in suppressing ignitions?			
i. Utility has **no policies** governing what crews' roles are in suppressing ignitions	ii. Utilities have **explicit policies** about the role of crews at the site of ignition	iii. Utilities have explicit policies about the role of crews, **including contractors and subcontractors**, at the site of ignition		

F.VI.b	What training and tools are provided to workers?			
i. Crews are **untrained**	ii. **Training and communications tools** are provided to **immediately report ignitions** caused by workers or in immediate vicinity of workers	iii. Training, **suppression tools**, and communication tools, are provided to **suppress small ignitions** caused by workers or in immediate vicinity of workers, and to immediately report ignitions are provided	iv. Training **by suppression professionals**, suppression tools, and communication tools, to suppress small ignitions caused by workers or in immediate vicinity of workers, and to immediately report ignitions are	

			provided	

F.VI.c In the event workers encounter an ignition, do any major injuries or fatalities occur?				
i. No	ii. Yes			

F.VI.d Does the utility provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report and suppress ignitions?				
i. No	ii. Yes			

G Data governance

G.I Data collection and curation

Capability 33

G.I.a Does the utility have a centralized database of situational, operational, and risk data?				
i. No	ii. Yes			

G.I.b Is the utility able to use advanced analytics on its centralized database of situational, operational, and risk data to make operational and investment decisions?				
i. No	ii. **Yes, but only for short term decision making**	iii. Yes, **for both short term and long-term decision making**		

G.I.c Does the utility collect data from all sensored portions of electric lines, equipment, weather stations, etc.?				
i. No	ii. Yes			

G.I.d	**Is the utility's database of situational, operational, and risk data able to ingest and share data using real-time API protocols with a wide variety of stakeholders?**			
i. No	ii. Yes			

G.I.e	**Can the utility's database of situational, operational, and risk data identify new sources of data needed for decision making?**			
i. No	ii. Yes			

G.I.f	**Is the utility's database of situational, operational, and risk data able to share best practices with other utilities in California and beyond?**			
i. No	ii. Yes			

G.II Data transparency and analytics

Capability 34

G.II.a	**Is there a single document cataloguing all fire-related data and algorithms, analyses, and data processes?**			
i. No	ii. Yes			

G.II.b	**Is there an explanation of the sources, cleaning processes, and assumptions made in the single document catalog?**			
i. No	ii. Yes			

G.II.c	**Are all analyses, algorithms, and data processing explained and documented?**			
i. Analyses, algorithms, and data processing **are not**	ii. Analyses, algorithms, and data processing **are** documented	iii. Analyses, algorithms, and data processing are documented	iv. Analyses, algorithms, and data processing are documented	

documented		**and explained**	and explained, **including sensitivities for each type of analysis and data**	

G.II.d **Is there a system for sharing data in real time across multiple levels of permissions?**				
i. No system capable of sharing data in real time across multiple levels of permissions	ii. System is capable of sharing across at least two levels of permissions, including a.) utility-regulator permissions, and b.) first responder permissions	iii. System is capable of sharing across at least three levels of permissions, including a.) utility-regulator permissions, b.) first responder permissions, and c.) public data sharing		

G.II.e **Are the most relevant wildfire related data algorithms disclosed?**				
i. No	ii. **Yes, disclosed to regulators and other relevant stakeholders**	iii. Yes, **disclosed publicly in WMP**		

G.III Near-miss tracking

Capability 35

G.III.a **Does the utility track near miss data for all near misses with wildfire ignition potential?**				
i. No	ii. Yes			

G.III.b **Based on near miss data captured, is the utility able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture?**				
i. No	ii. Yes			

G.III.c **Does the utility capture data related to the specific mode of failure when capturing near-miss data?**				
i. No	ii. Yes			

G.III.d **Is the utility able to predict the probability of a near miss in causing an ignition based on a set of event characteristics?**				
i. No	ii. Yes			

G.III.e **Does the utility use data from near misses to change grid operation protocols in real time?**				
i. No	ii. Yes			

G.IV Data sharing with the research community

Capability 36

G.IV.a **Does the utility make disclosures and share data?**				
i. Utility **fails to make disclosures**	ii. Utility **makes required disclosures**, but does not share data beyond what is required	iii. Utility makes required disclosures **and shares data beyond what is required**		

G.IV.b **Does the utility in engage in research?**				
i. Utility **does not participate** in	ii. Utility **participates** in	iii. Utility **funds** and participates in	iv. Utility funds and participates in	

collaborative research	collaborative research	both independent and collaborative research	both independent and collaborative research, **and ensures that research, where possible, is abstracted and applied to other utilities**	

G.IV.c What subjects does utility research address?				
i. Utility ignited wildfires	ii. Utility ignited wildfires **and risk reduction initiatives**	iii. None of the above		

G.IV.d Does the utility promote best practices based on latest independent scientific and operational research?				
i. No	ii. Yes			

H Resource allocation methodology

H.I Scenario analysis across different risk levels

Capability 37

H.I.a For what risk scenarios is the utility able to provide projected cost and total risk reduction potential?				
i. Utility does not project proposed initiatives or costs across different levels of risk scenarios	ii. Utility provides an accurate high-risk reduction and low risk reduction scenario, and the projected cost and total risk reduction	iii. Utility provides an accurate high-risk reduction and low risk reduction scenario, in addition to their proposed scenario,		

	potential	and the projected cost and total risk reduction potential		

H.I.b **For what level of granularity is the utility able to provide projections for each scenario?**				
i. Territory-level or greater	ii. Region level	iii. Circuit level	iv. Span level	v. Asset level

H.I.c **Does the utility include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios?**				
i. No	ii. Yes			

H.I.d **Does the utility provide an estimate of impact on reliability factors in its scenarios?**				
i. No	ii. Yes			

H.II Presentation of relative risk spend efficiency for portfolio of initiatives

Capability 38

H.II.a **Does the utility present accurate qualitative rankings for its initiatives by risk spend efficiency?**				
i. No	ii. Yes			

H.II.b **What initiatives are captured in the ranking of risk spend efficiency?**				
i. Common commercial initiatives	ii. All commercial initiatives	iii. All commercial initiatives and emerging initiatives	iv. None of the above	

H.II.c **Does the utility include figures for PV cost and project risk reduction impact of each initiative?**				
i. No	ii. Yes			

H.II.d **Does the utility provide an explanation of their investment in each particular initiative?**				
i. No	ii. **Yes, including the expected overall reduction in risk**	iii. Yes, including the expected overall reduction in risk **and estimates of impact on reliability factors**		

H.II.e **At what level of granularity is the utility able to provide risk efficiency figures?**				
i. Territory-level or greater	ii. Region level	iii. Circuit level	iv. Span level	v. Asset level

H.III Process for determining risk spend efficiency of vegetation management initiatives

Capability 39

H.III.a **How accurate of a risk spend efficiency calculation can the utility provide?**				
i. Utility has **no clear understanding** of the relative risk spend efficiency of various clearances and types of vegetation management initiatives	ii. Utility has **an accurate relative understanding** of the cost and effectiveness to **produce a reliable risk spend efficiency estimate**	iii. Utility has accurate **quantitative** understanding of cost and effectiveness to produce a reliable risk spend efficiency estimate	iv. Utility has accurate quantitative understanding of cost**, including sensitivities** and effectiveness to produce a reliable risk spend efficiency estimate	

H.III.b At what level can estimates be prepared?				
i. Less granular than regional, or not at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

H.III.c How frequently are estimates updated?				
i. Never	ii. Less frequently than annually	iii. Annually or more frequently		

H.III.d What vegetation management initiatives does the utility include within its evaluation?				
i. None	ii. Some	iii. Most	iv. All	v. All, supported by independent testing

H.III.e Can the utility evaluate risk reduction synergies from combination of various initiatives?				
i. No	ii. Yes			

H.IV Process for determining risk spend efficiency of system hardening initiatives

Capability 40

H.IV.a How accurate of a risk spend efficiency calculation can the utility provide?				
i. Utility has **no clear understanding** on the relative risk spend efficiency of hardening initiatives	ii. Utility has accurate **relative understanding** of cost and effectiveness to **produce a reliable risk spend efficiency estimate**	iii. Utility has accurate **quantitative** understanding of cost and effectiveness to produce a reliable risk spend efficiency estimate	iv. Utility has accurate quantitative understanding of cost, **including sensitivities**, and effectiveness to produce a reliable risk spend efficiency estimate	

H.IV.b **At what level can estimates be prepared?**				
i. Less granular than regional, or not at all	ii. Regional	iii. Circuit-based	iv. Span-based	v. Asset-based

H.IV.c **How frequently are estimates updated?**				
i. Never	ii. Less frequently than annually	iii. Annually or more frequently		

H.IV.d **What grid hardening initiatives are included in the utility risk spend efficiency analysis?**				
i. None	ii. **Some commercially available** grid hardening initiatives	iii. **Most** commercially available grid hardening initiatives	iv. **All** commercially available grid hardening initiatives	v. All commercially available grid hardening initiatives, **as well as those initiatives that are lab tested**

H.IV.e **Can the utility evaluate risk reduction effects from the combination of various initiatives?**				
i. No	ii. Yes			

H.V Portfolio-wide innovation in new wildfire initiatives

Capability 41

H.V.a **How does the utility develop and evaluate the risk spend efficiency of new wildfire initiatives?**				
i. No program in place	ii. Utility uses **total cost of ownership**			

H.V.b **Are the risk spend efficiency estimates verified by experimental data confirmed by innovation specialists?**				
i. No	ii. Yes			

H.V.c	**Are the reviews of innovative initiatives audited by independent parties?**			
i. No	ii. Yes			

H.V.d	**Does the utility share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public?**			
i. No	ii. Yes			

H.V.e	**Are the risk spend efficiency estimates verified by experimental data confirmed by experts and other utilities in California or abroad?**			
i. No	ii. Yes			

H.VI Portfolio-wide innovation in new wildfire initiatives

Capability 42

H.VI.a	**How does the utility develop and evaluate the efficacy of new wildfire initiatives?**			
i. No program in place	ii. Utility uses **pilots** and **measures** direct reduction in ignition events	iii. Utility uses **pilots** and **measures** direct reduction in ignition events and near-misses.	iii. Utility uses pilots, followed by in-field testing, measuring reduction in ignition events and near-misses.	

H.VI.b	**How does the utility develop and evaluate the risk spend efficiency of new wildfire initiatives?**			
i. No program in place	ii. Utility uses **total cost of ownership**			

H.VI.c At what level of granularity does the utility measure the efficacy of new wildfire initiatives?				
i. None	ii. Entire territory	iii. Circuit	iv. Span	v. Asset

H.VI.d Are the reviews of innovative initiatives audited by independent parties?				
i. No	ii. Yes			

H.VI.e Does the utility share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public?				
i. No	ii. Yes			

I Emergency planning and preparedness

I.I Wildfire plan integrated with overall disaster/ emergency plan

Capability 43

I.I.a Is the wildfire plan integrated with overall disaster and emergency plans?				
i. No	ii. **Wildfire plan is a component of overall plan**	iii. Wildfire plan is an **integrated component** of overall plan		

I.I.b Does the utility run drills to audit the viability and execution of its wildfire plans?				
i. No	ii. Yes			

I.I.c Is the impact of confounding events or multiple simultaneous disasters considered in the planning process?				
i. No	ii. Yes			

I.I.d	**Is the plan integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.)?**			
i. No	ii. Yes			

I.I.e	**Does the utility take a leading role in planning, coordinating, and integrating plans across stakeholders?**			
i. No	ii. Yes			

I.II Plan to restore service after wildfire related outage

Capability 44

I.II.a	**Are there detailed and actionable procedures in place to restore service after a wildfire related outage?**			
i. No	ii. Yes			

I.II.b	**Are employee and subcontractor crews trained in, and aware of, plans?**			
i. No	ii. Yes			

I.II.c	**To what level are procedures to restore service after a wildfire-related outage customized?**			
i. Territory-wide	ii. Region level	iii. Circuit level	iv. Span level	v. Asset level

I.II.d	**Is the customized procedure to restore service based on topography, vegetation, and community needs?**			
i. No	ii. Yes			

I.II.e	**Is there an inventory of high risk spend efficiency resources available for repairs?**			
i. No	ii. Yes			

I.III Emergency community engagement during and after wildfire

Capability 45

I.III.a Does the utility provide clear and substantially complete communication of available information?				
i. No	ii. Yes	iii. Yes, **along with referrals to other agencies**		

I.III.b What percent of affected customers receive complete details of available information?				
i. <=95% of customers	ii. >95% of customers	iii. >98% of customers	iv. >99% of customers	v. >99.9% of customers

I.III.c What percent of affected medical baseline customers receive complete details of available information?				
i. <=99%	ii. >99% of medical baseline customers	iii. >99.5% of medical baseline customers	iv. >99.9% of medical baseline customers	v. >99.9% of medical baseline customers

I.III.d How does the utility assist where helpful with communication of information related to power outages to customers?				
i. Through availability of relevant evacuation information and links on website and toll-free telephone number	ii. Through availability of relevant evacuation information and links on website and toll-free telephone number, **and assisting disaster response professionals as requested**	iii. None of the above		

I.III.e **How does the utility engage other agencies in the process?**				
i. Utility does not engage with other agencies	ii. **Utility engages with other agencies in an ad hoc manner**	iii. Utility **has detailed and actionable established protocols for engaging** with emergency management organizations		

I.III.f **Does the utility provide resources to communities during emergencies (e.g., shelters, supplies, transportation, etc.)?**				
i. No	ii. Yes			

I.IV Protocols in place to learn from wildfire events

Capability 46

I.IV.a **Is there a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements?**				
i. No	ii. Yes			

I.IV.b **Is there a defined process and staff responsible for incorporating learnings into emergency plan?**				
i. No	ii. Yes			

I.IV.c **Once updated based on learnings and improvements, is the updated plan tested using "dry runs" to confirm its effectiveness?**				
i. No	ii. Yes			

I.IV.d	**Is there a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan?**			
i. No	ii. Yes			

I.V Processes for continuous improvement after wildfire and PSPS

Capability 47

I.V.a	**Does the utility conduct an evaluation or debrief process after a wildfire?**			
i. No	ii. Yes			

I.V.b	**Does the utility conduct a customer survey and utilize partners to disseminate requests for stakeholder engagement?**			
i. No	ii. One or the other	iii. Both		

I.V.c	**In what other activities does the utility engage?**			
i. None	ii. Public listening sessions	iii. Debriefs with partners	iv. Other	

I.V.d	**Does the utility share with partners findings about what can be improved?**			
i. No	ii. Yes			

I.V.e	**Are feedback and recommendations on potential improvements made public?**			
i. No	ii. Yes			

I.V.f	**Does the utility conduct proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved?**			
i. No	ii. Yes			

I.V.g	**Does the utility have a clear plan for post-event listening and incorporating lessons learned from all stakeholders?**			
i. No	ii. Yes			

I.V.h	**Does the utility track the implementation of recommendations and report upon their impact?**			
i. No	ii. Yes			

I.V.i	**Does the utility have a process to conduct reviews after wildfires in other the territory of other utilities and states to identify and address areas of improvement?**			
i. No	ii. Yes			

J Stakeholder cooperation and community engagement

J.I Cooperation and best practice sharing with other utilities

Capability 48

J.I.a	**Does the utility actively work to identify best practices from other utilities through a clearly defined operational process?**			
i. No	ii. Yes, from other California utilities	iii. Yes, from other global utilities		

J.I.b	**Does the utility successfully adopt and implement best practices identified from other utilities?**			
i. No	ii. Yes			

J.I.c	**Does the utility seek to share best practices and lessons learned in a consistent format?**			
i. No	ii. Yes			

J.I.d	**Does the utility share best practices and lessons via a consistent and predictable set of venues/media?**			
i. No	ii. Yes			

J.I.e	**Does the utility participate in annual benchmarking exercises with other utilities to find areas for improvement?**			
i. No	ii. Yes			

J.I.f	**Has the utility implemented a defined process for testing lessons learned from other utilities to ensure local applicability?**			
i. No	ii. Yes			

J.II Engagement with communities on utility wildfire mitigation initiatives

Capability 49

J.II.a	**Does the utility have a clear and actionable plan to develop or maintain a collaborative relationship with local communities?**			
i. No	ii. Yes			

J.II.b	**Does the utilities' plan to develop or maintain a collaborative relationship with local communities enable the utility to implement initiatives (e.g., vegetation management)?**			
i. No	ii. Yes			

J.II.c	**What percent of landowners are non-compliant with utility initiatives (e.g., vegetation management)?**			
i. More than 5%	ii. Less than 5%	iii. Less than 2%	iv. Less than 1 %	v. Less than 0.5%

J.II.d	**What percent of landowners complain about utility initiatives (e.g., vegetation management)?**			
i. More than 5%	ii. Less than 5%	iii. Less than 2%	iv. Less than 1 %	

J.II.e	**Does the utility have a demonstrably cooperative relationship with local communities?**			
i. No	ii. Yes			

J.II.f	**Do landowners periodically reach out to the utility to notify it of risks, dangers, or issues?**			
i. No	ii. Yes			

J.III Engagement with LEP and AFN populations

Capability 50

J.III.a	**Can the utility provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities?**			
i. No	ii. Yes			

J.III.b	**Can the utility outline how these partnerships create pathways for implementing suggested activities to address the needs of these communities?**			
i. No	ii. Yes			

J.III.c	**Can the utility point to clear examples of how those relationships have driven the utility's ability to interact with and prepare LEP & AFN communities for wildfire mitigation activities?**			
i. No	ii. Yes			

J.III.d	**Does the utility have a specific annually-updated action plan further reduce wildfire and PSPS risk to LEP & AFN communities?**			
i. No	ii. Yes			

J.IV Collaboration with emergency response agencies

Capability 51

J.IV.a	**What is the cooperative model between the utility and suppression agencies?**			
i. Utility **does not sufficiently cooperate** with suppression agencies	ii. Utility **cooperates with suppression agencies** by notifying them of ignitions	iii. Utility cooperates with suppression agencies by **working cooperatively with them to detect ignitions**, in addition to notifying them of ignitions as needed		

J.IV.b	**In what areas is the utility cooperating with suppression agencies**			
i. High risk areas	ii. All areas under utility control	iii. Throughout utility service areas	iv. None of the above	

J.IV.c Does the utility accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data?				
i. No	ii. Yes			

J.IV.d Does the utility communicate fire paths to the community as requested?				
i. No	ii. Yes			

J.IV.e Does the utility work to assist suppression crews logistically, where possible?				
i. No	ii. Yes			

J.V Collaboration on wildfire mitigation planning with stakeholders

Capability 52

J.V.a Where does the utility conduct substantial fuel management?				
i. Utility **does not conduct** fuel management	ii. Utility conducts fuel management **along rights of way**	iii. Utility conducts fuel management throughout **service area**		

J.V.b Does the utility engage with other stakeholders as part of its fuel management efforts?				
i. Utility **does not coordinate** with broader fuel management efforts by other stakeholders	ii. Utility **shares fuel management plans** with other stakeholders	iii. Utility shares fuel management plans with other stakeholders **and works with other stakeholders conducting fuel management concurrently**	iv. Utility shares fuel management plans with other stakeholders, **and coordinates fuel management activities, including adjusting plans, to cooperate with other stakeholders state-wide to focus on areas**	v. Utility shares fuel management plans with other stakeholders, and **pro-actively** coordinates fuel management activities, including adjusting plans, to cooperate with other stakeholders state-wide to focus on areas that

			that would have the biggest impact in reducing wildfire risk	would have the biggest impact in reducing wildfire risk

J.V.c Does the utility cultivate a native vegetative ecosystem across territory that is consistent with lower fire risk?				
i. No	ii. Yes			

J.V.d Does the utility fund local groups (e.g., fire safe councils) to support fuel management?				
i. No	ii. Yes			

(END OF ATTACHMENT 3)