Southern California Edison

WSD-011 – Resolution implementing the requirements of Public Utilities Code Sections 8389(d)(1), (2) and (4) related to catastrophic wildfire caused by electrical corporations subject to the Commission's regulatory authority

DATA REQUEST SET M G R A - S C E - 0 0 7

To: MGRA
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Job Title: Sr. Manager
Received Date: 3/16/2021

Response Date: 3/18/2021

Question 004:
Please provide a table of all Utility Maturity Survey responses that have changed since 2020, how they have changed, and a description of why.

Response to Question 004:
The table below provides an explanation regarding differences in the 2021 and 2020 starting points, or differences in our anticipated end point for 2022. The table only includes questions that reflect such changes.

SCE included an identification of key initiatives and associated progress in sections 7.1 and 7.2 of our WMP. The table below does not repeat this information, but instead offers a summary representation of how and why our responses evolved. In many cases, the response changes are a reflection of the successful execution of WMP activities in the time intervals between the two survey responses. SCE had significant focus on our WMP activities throughout 2020 and as a result made a significant amount of progress on many of our capabilities. The time elapsed since the last survey and progress made are reflected in the difference in starting point between 2020 and 2021, denoted by "achieved capabilities through activities completed in 2020". We also updated our expected maturity level in 2022 based on the progress made from 2020 to 2021 as denoted by statements including "… than originally anticipated…".

Cap.	Sub-Question	Maturity Level by Year				How	Why
		2020 WMP		2021 Update			
		2020	2022	2021	2022		
A.I	a. How sophisticated is utility's ability to estimate the risk of weather scenarios?	ii	iv	iv	iv	Improvements in weather modeling and risk understanding	Achieved capabilities through activities completed in 2020
	d. How automated is the tool?	i	ii	ii	ii	Improvements in automation	Achieved capabilities through activities completed in 2020
A.II	a. How is ignition risk calculated	ii	iii	iv	iv	Improvements in risk tool inputs and granularity	Achieved more risk modeling enhancements than originally anticipated through activities completed in 2020
	b. How automated is the ignition risk calculation tool?	ii	ii	ii	iii	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated
A.III	d. How automated is the ignition risk estimation process?	i	ii	ii	iii	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated
	f. How are the outputs of the ignition risk impact assessment tool evaluated?	iii	iv	iii	iii	N/A	Do not expect machine learning will be achieved in this timeframe
	g. What other inputs are used to estimate impact?	i	iii	iii	iii	Additional inputs incorporated	Achieved capabilities through activities completed in 2020
A.IV	a. How is risk reduction impact estimated?	ii	iv	iv	iv	Achieved interval scale for risk estimation	Achieved capabilities through activities completed in 2020
	b. How automated is ignition risk reduction impact assessment tool?	ii	ii	ii	iii	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated
	c. How granular is the ignition risk reduction impact assessment tool?	ii	v	v	v	Achieved greater granularity	Achieved capabilities through activities completed in 2020
A.V	b. How automated is the mechanism to determine whether to update algorithms based on deviations?	i	i	i	ii	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated
	c. How are deviations from risk model to ignitions and propagation detected?	ii	ii	ii	iii	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated

	e. What other data is used to make decisions on whether to update algorithms?	iii	iv	iv	iv	Additional inputs incorporated	Achieved capabilities through activities completed in 2020
B.I	b. How are measurements validated?	ii	ii	ii	iii	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated
	a. How granular is the weather data that is collected?	ii	ii	iv	iv	Improvements in weather data collection	Achieved greater degree of weather collection than originally anticipated through activities completed in 2020
B.II	c. How granular is the tool?	iii	iii	iii	iv	Improvements in granularity	Expect to achieve greater degree of granularity than originally anticipated
	c. At what level of granularity can forecasts be prepared?	iii	iii	iii	iv	Improvements in granularity	Expect to achieve greater degree of granularity than originally anticipated
B.III	e. How automated is the forecast process?	iii	iii	iv	iv	Improvements in automation	Achieved greater degree of automation than originally anticipated through activities completed in 2020
	b. What equipment is used to detect ignitions?	iii	iii	iv	iv	Additional equipment used for detecting ignitions	Incorporated equipment beyond what was originally anticipated through activities completed in 2020
	c. How is information on detected ignitions reported?	iii	iii	iii	iv	Improvements in automation	Expect to achieve higher degree of automation than originally anticipated
B.V	d. What role does ignition detection software play in wildfire detection?	i	i	i	ii	Use of cameras in detection	Expect to incorporate cameras to a greater extent than was originally anticipated
	a. Does grid design meet minimum G095 requirements and loading standards in HFTD areas?	ii	ii	iii	iii	Grid design standards updated	Achieved greater degree of improvement to grid designs than originally anticipated through activities completed in 2020
	b. Does the utility provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high?	i	ii	ii	ii	Incorporation of additional grid designs	Achieved capabilities through activities completed in 2020
C.II	c. Does routing of new portions of the grid take wildfire risk into account?	ii	ii	i	i	Incorporation of wildfire risk into routing considerations	SCE better understands this question to mean wildfire risk is a consideration, but not the sole

							consideration, changing our response from last time.
	b. What level of redundancy does the utility's distribution architecture have?	ii	ii	iii	iii	Improvements in distribution architecture redundancy	Achieved greater degree of redundancy than originally anticipated through activities completed in 2020
C.III	d. How does the utility consider egress points in its grid topology?	i	i	i	ii	Incorporation of additional factors into grid topology	Expect to incorporate egress points to a greater degree than originally anticipated
	a. Does the utility have an understanding of the risk spend efficiency of hardening initiatives?	ii	iii	iii	iii	Improvements in risk modeling (relative vs quantitative)	Achieved capabilities through activities completed in 2020
C.IV	b. At what level can estimates be prepared?	ii	v	iii	v	Improvements in risk modeling granularity	Progressing to target expected for 2022 through activities completed in 2020
C.V	b. Are results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. shared in sufficient detail to inform decision making at other utilities?	ii	ii	iii	iii	Greater information sharing	Sharing with stakeholders beyond what was originally anticipated
	b. How are patrol inspections scheduled?	i	i	ii	iii	Improvements to updates and risk incorporation of inspection schedules	Achieved, and expect to continue to achieve, greater improvements in scheduling through activities completed in 2020 and planned for 2021/22
	c. What are the inputs to scheduling patrol inspections?	i	i	i	ii	Incorporation of predictive modeling	Expect to incorporate predictive modeling into inspections more than originally anticipated
D.II	i. What are the inputs to scheduling other inspections?	i	i	ii	ii	Incorporation of predictive modeling	Expect to incorporate predictive modeling into inspections more than originally anticipated
D.III	c. At what level of granularity are the depth of checklists, training, and procedures customized?	i	i	v	v	Improvements in granularity	Achieved greater degree of granularity than originally expected through activities completed in 2020

D.IV	b. How are service intervals set?	i	ii	ii	ii	Improvements in granularity	Achieved capabilities through activities completed in 2020
E.III	c. At what level of granularity are the depth of checklists, training, and procedures customized?	ii	ii	v	v	Improvements in granularity	Achieved greater degree of granularity than originally expected through activities completed in 2020
	h. Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?	i	i	ii	ii	Greater collaboration with customers	SCE better understands this question to mean this option is available to customers, not necessarily utilized, changing our response from last time.
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	i	ii	ii	Greater collaboration with partners	SCE better understands this question to mean this option is available to partners, not necessarily utilized, changing our response from last time.
	f. Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?	i	i	ii	ii	Greater collaboration with customers	SCE better understands this question to mean this option is available to customers, not necessarily utilized, changing our response from last time.
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	i	ii	ii	Greater collaboration with partners	SCE better understands this question to mean this option is available to partners, not necessarily utilized, changing our response from last time.
E.VI	a. How is contractor and employee activity audited?	ii	ii	ii	iii	Demonstrable functioning of audit process	Expect to be able to demonstrate this functionality by end of 2022 more than originally anticipated
	a. Is there a process for inspecting de-energized sections of the grid prior to re-energization?	ii	iii	ii	ii	N/A	Do not believe augmentation with sensors and aerial tools will be accomplished in this timeframe
F.V	c. What is the average amount of time that it takes you to re-energize your grid from a PSPS once weather has subsided to below your de-energization threshold?	iv	v	v	v	Increase in re-energization time	Achieved capabilities through activities completed in 2020

	d. Is there a system for sharing data in real time across multiple levels of permissions?	i	i	i	iii	Increased levels of permission for data sharing	Expect to have permission sharing across a greater degree of levels than originally anticipated
G.II	e. Are the most relevant wildfire related data algorithms disclosed?	ii	ii	iii	iii	Disclosure of wildfire data algorithms	Experience with WMP disclosures led us to a higher capability than originally expected
	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	ii	ii	ii	Wildfire ignition modeling improvements	Achieved capabilities through activities completed in 2020
	c. Does the utility capture data related to the specific mode of failure when capturing near miss data?	i	ii	ii	ii	Mode of failure data capture	Achieved capabilities through activities completed in 2020
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	ii	ii	ii	Wildfire ignition modeling improvements	Achieved capabilities through activities completed in 2020
H.I	b. For what level of granularity is the utility able to provide projections for each scenario?	ii	v	iv	v	Improvements in granularity	Progressing to target expected for 2022 through activities completed in 2020
H.II	e. At what level of granularity is the utility able to provide risk efficiency figures?	ii	v	iv	iv	Improvements in granularity	Do not believe asset level is possible during this timeframe, but have already advanced to span level through activities completed in 2020
	b. At what level can estimates be prepared?	ii	iii	iii	iii	Improvements in granularity	Achieved capabilities through activities completed in 2020
	d. What vegetation management initiatives does the utility include within its evaluation?	ii	iii	iii	iii	Incorporation of more initiatives into evaluation	Achieved capabilities through activities completed in 2020
H.III	e. Can the utility evaluate risk reduction synergies from combination of various initiatives?	i	ii	ii	ii	Ability to evaluate risk reduction of various initiatives	Achieved capabilities through activities completed in 2020
	a. How accurate of a risk spend efficiency calculation can the utility provide?	ii	iii	iii	iii	Risk spend efficiency accuracy improvements	Achieved capabilities through activities completed in 2020
H.IV	b. At what level can estimates be prepared?	ii	v	v	v	Improvements in granularity	Achieved capabilities through activities completed in 2020

	a. To what extent does the utility allocate capital to initiatives based on risk-spend efficiency (RSE)?	ii	iii	iii	iv	Expanded use of risk spend efficiency in capital allocation	Achieved capabilities through activities completed in 2020, and expect to improve beyond original anticipated level of maturity
	b. What information does the utility take into account when generating RSE estimates?	i	iii	iii	iii	Improvements in granularity	Achieved capabilities through activities completed in 2020
H.V	c. How does the utility verify RSE estimates?	ii	ii	ii	iii	Additional data used for verification	Increasing historical data facilitates a greater level of maturity for 2022 than originally anticipated
I.III	a. Does the utility provide clear and substantially complete communication of available information relevant to affected customers?	ii	iii	iii	iii	Incorporated referrals to other agencies	Achieved capabilities through activities completed in 2020
J.I	f. Has the utility implemented a defined process for testing lessons learned from utilities to other ensure local applicability?	i	i	ii	ii	Established process	Process established in 2020 to share lessons learned
J.III	d. Does the utility have a specific annually-updated action plan further reduce wildfire and PSPS risk to LEP & AFN communities?	i	ii	ii	ii	Incorporation of LEP & AFN communities into plan	Achieved capabilities through activities completed in 2020
J.IV	c. Does the utility accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data?	i	i	ii	ii	Communication of fire forecasts	Achieved capabilities through activities completed in 2020