Southern California Edison
2022-WMPs – 2022 Wildfire Mitigation Plan Updates

DATA REQUEST SET C a l A d v o c a t e s - S C E - 2 0 2 2 W M P - 0 4

To: Cal Advocates
Prepared by: Jeff Berson
Job Title: Consultant
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Response Date: 2/24/2022

Question 004:
For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for each circuit or circuit-segment influence where you plan to perform work in 2022.
a) EVM
b) Hazard Tree Mitigation Program
c) Dead and Dying Tree Removal
d) Covered conductor installation
e) Undergrounding
f) Pole replacement
g) Grid sectionalization
h) Detailed inspections of distribution assets
i) Detailed inspections of transmission assets
j) Aerial inspections of transmission assets
k) Aerial inspections of distribution assets
l) LiDAR inspections of distribution assets
m) LiDAR inspections of transmission assets

Response to Question 004:
Please see below for information on how modeled Wildfire Risk Scores for each circuit or circuit-segment influenced where work will be performed /sequenced in 2022:

a) EVM - Vegetation management activities to maintain clearance distances from transmission and distribution lines and equipment are conducted throughout SCE's entire service area on an annual basis. Because inspections are performed annually, region prioritization is only performed to help ensure inspections and required trimming can be performed in consideration of certain access conditions (e.g., snow).

b) Hazard Tree Mitigation Program: Hazard Tree Mitigation Program is focused in HFRA. SCE prioritizes locations within HFRA based on HFRA tier and density of vegetation surrounding SCE's facilities.

SCE plans to transition the basis of circuit prioritization from Reax consequence scores to the Tree Risk Index (TRI) in 2022, which is informed by inputs from the Wildfire Risk Reduction Model (WRRM). The TRI will be used for vegetation management inspections prioritization for line

clearing, hazard trees, and quality control. The TRI includes risk areas for both HFRA and non-HFRA. Within the TRI model, there are four risk classes A, B, C and D, with A being the highest. TRI model factors in both the probability of a fire starting from an SCE asset, in this case, vegetation contact, and Technosylva consequence values.

c) Dead and Dying Tree Removal: SCE patrols HFRAs several times a year as conditions warrant to identify and remove compromised trees. For example, insect infestation can move quickly, and trees within strike distance of SCE overhead facilities that are dead or expected to die within a year are removed. SCE selects the scope of work for the Dead and Dying Tree Program to focus on areas historically impacted by bark beetle infestations and drought.

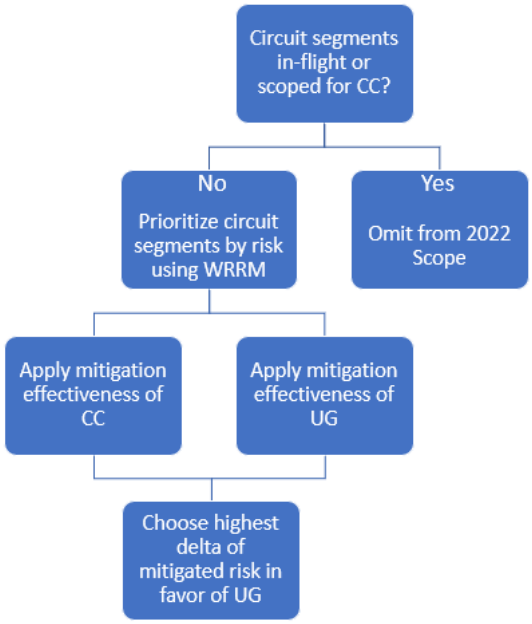
d) Covered conductor installation: The underlying POI and consequence score models have undergone several refinements, and SCE continues to incorporate these enhanced risk scores into its deployment strategy to the extent practicable. Given that the general lead time for progressing from scoping to construction takes approximately 16 to 24+ months, the scope to be completed in 2022 necessarily relies on the risk-prioritized scope selection that was previously performed and released to the execution team based on the best available information and modeling at that time. For the purpose of future scope release, SCE's practice is to incorporate the results of its most up-to-date risk model. To the extent that previously less risky miles now present as relatively riskier, they are prioritized for scoping. For details on future scope prioritization, please refer to the integrated grid hardening strategy in Section 7.1.2.1 of SCE's 2022 WMP Update.

While SCE's POI and consequence models are a critical component in dictating which miles of distribution HFRA to address first, there are other operational factors to consider when deploying covered conductor. These include extending the construction to the next structure with appropriate guying, or to a natural dead-end structure that the covered conductor can transition to bare wire, or to a structure with an isolatable sectionalizing device that can provide PSPS mitigation benefits.

With specific regard to PSPS mitigation benefits, in 2022 the covered conductor scope will include miles performed under PSPS considerations. SCE will continue with the remaining covered conductor scope from the FICs list as described in the PSPS Action Plan and implement the covered conductor scope as outlined in SH-7 in order to reduce the likelihood of PSPS by enabling the ability to increase windspeed thresholds for PSPS de-energization.

e) Undergrounding: For 2022 scoping, SCE evaluated circuit segments based on multiple criteria including the wildfire risk score from the WRRM, PSPS impacts (including circuits that have experienced multiple PSPS events), terrain, grid topography, construction complexity associated with undergrounding, and cost. SCE also consulted with local districts and reviewed egress in areas where poles and overhead facilities may make it challenging to evacuate should a fire occur.

The figure below shows the prioritization process performed in 2020 for the targeted undergrounding 2022 plan year. The 2022 scoping analysis reviewed circuit segments that were not in-flight or scoped for covered conductors. SCE arrived at the 2022 scope by leveraging SCE's WRRM-produced FLOC level risk, broken down by sub-driver risks, and applied SCE's established mitigation effectiveness values for covered conductor and undergrounding. Applying the mitigation effectiveness of covered conductor and undergrounding to each unique FLOC allowed SCE to generate "mitigated risk" values for both options for each circuit segment. Each circuit segment was then assessed to determine the highest delta of mitigated risk between both mitigation options of undergrounding versus covered conductor.



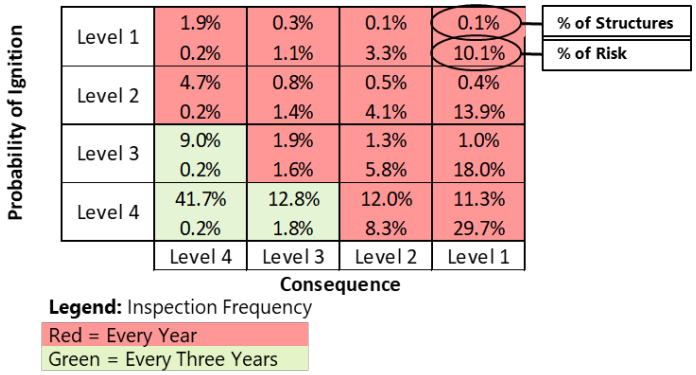
f) Pole replacement: Poles replaced in conjunction with the installation of covered conductor followed the method described above for CC. Poles replaced through inspection programs are prioritized and sequenced to meet compliance requirements set forth in our inspection and maintenance programs.

g) Grid sectionalization: For sectionalizing work targeting PSPS, SCE will prioritize the circuits that experienced a PSPS de-energization in 2021.

h) Detailed inspections of distribution assets: Starting in 2022 SCE will inspect each structure within HFRA once every three years through the distribution ODI program which exceeds the GO 165 requirement of once every five years. These inspections meet the compliance requirements and timelines of GO 165 requirements. Standard ODI inspections continue to be performed in SCE's non-HFRA.

SCE also supplements its GO 165 compliance inspections of the overhead distribution system with

risk-informed inspections. As risk levels vary across SCE's HFRA, a targeted quantitative approach is being deployed to balance risk reduction, resource availability and costs. Structures are prioritized for inspection based on POI and consequence. In determining the 2022 inspection scope, SCE incorporated the latest risk modelling as well as the need to reserve execution capacity for emergent AOCs. For the 2022 scope, SCE has updated its 4 x 4 matrix, with one dimension of the matrix representing four levels of POI risk and the other dimension representing four levels of consequence, using the output of WRRM Version 6.0. SCE's overall methodology from 2021 remains the same, where each structure was scored and mapped to a box in the matrix based on its POI and consequence. The highest risk structures (i.e., those mapped to the red boxes) will be inspected in 2022 as shown in the figure below.



Probability of Ignition	Level 4	Level 3	Level 2	Level 1
Level 1	1.9% 0.2%	0.3% 1.1%	0.1% 3.3%	0.1% 10.1%
Level 2	4.7% 0.2%	0.8% 1.4%	0.5% 4.1%	0.4% 13.9%
Level 3	9.0% 0.2%	1.9% 1.6%	1.3% 5.8%	1.0% 18.0%
Level 4	41.7% 0.2%	12.8% 1.8%	12.0% 8.3%	11.3% 29.7%
	Level 4	Level 3	Level 2	Level 1

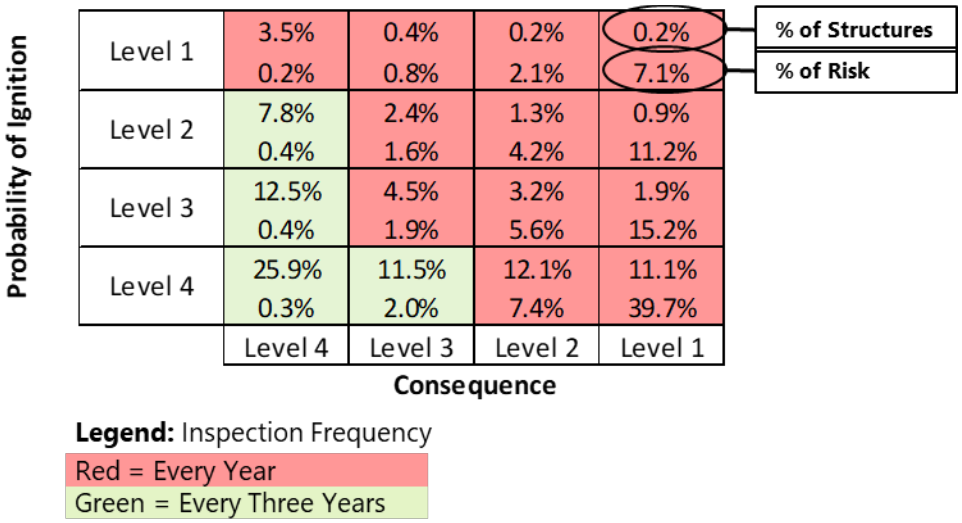
% of Structures
% of Risk

Consequence

Legend: Inspection Frequency
Red = Every Year
Green = Every Three Years

i) Detailed inspections of transmission assets: SCE inspects its entire service area over the span of three years. Resource allocation and work prioritization is driven by GO 165 compliance requirements. Circuits are selected for inspection when they are due based on the last inspection date.

SCE also conducts HFRI inspections for its overhead transmission system in HFRA. Structures are prioritized for inspection based on POI and consequence. The 2022 scope for inspections was based on the Technosylva WRRM 6.0 consequence model. The POI models for transmission and subtransmission assets that were developed in 2021 have been updated and were utilized to determine the 2022 scope. SCE created a 4 x 4 matrix with one dimension of the matrix representing four levels of POI risk and the other dimension representing four levels of consequence. Each structure was scored and mapped to a box in the matrix based on its POI and consequence. The highest risk structures (i.e., those mapped to the red boxes) will be inspected in 2022 as shown in the figure below.



Probability of Ignition	Level 4	Level 3	Level 2	Level 1
Level 1	3.5% 0.2%	0.4% 0.8%	0.2% 2.1%	0.2% 7.1%
Level 2	7.8% 0.4%	2.4% 1.6%	1.3% 4.2%	0.9% 11.2%
Level 3	12.5% 0.4%	4.5% 1.9%	3.2% 5.6%	1.9% 15.2%
Level 4	25.9% 0.3%	11.5% 2.0%	12.1% 7.4%	11.1% 39.7%

Legend: Inspection Frequency
Red = Every Year
Green = Every Three Years

j) Aerial inspections of transmission assets: Same as the method used for transmission detailed inspections.

k) Aerial inspections of distribution assets: Same as the method used for distribution detailed inspections.

l) LiDAR inspections of distribution assets: Risk prioritization was not performed for LiDAR inspections. At this time, SCE does not directly collect LiDAR for the purpose of inspecting distribution lines and equipment.

m) LiDAR inspections of transmission asset: At this time, SCE does not directly collect LiDAR for the purpose of inspecting transmission lines and equipment.