*Southern California Edison*
*2025-WMPs – 2025-WMPs*

**DATA REQUEST SET C a l A d v o c a t e s - S C E - 2 0 2 5 W M P - 0 5**

**To: Cal Advocates**
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**Job Title: Senior Advisor – Enterprise Risk Management**
**Received Date: 4/9/2024**

**Response Date: 4/12/2024**

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**Question 02:**
Area of Continued Improvement (ACI) SCE-23-02, Required Progress Item #1 states that SCE must "provide a plan with milestones for transitioning from using maximum consequence values to probability distributions in its 2026-2028 Base WMP when aggregating risk scores" for mitigation evaluation, cost/benefit calculations, and risk ranking."^7

SCE states in response to this item:

SCE does not anticipate transitioning from using maximum consequence values to probability distributions in its 2026-2028 Base WMP when aggregating risk scores for the items listed above. Maximum consequence values are necessary to identify catastrophic wildfires, as catastrophic wildfires occur infrequently (yet have severe consequences when they do) and are difficult to predict using a normal probability distribution. In the sections below, SCE demonstrates that its current methodologies are providing accurate outputs for calculating known risk.^8

a) Did SCE "provide a plan with milestones for transitioning from using maximum consequence values to probability distributions in its 2026-2028 Base WMP when aggregating risk scores" for mitigation evaluation, cost/benefit calculations, and risk ranking" as directed in ACI SCE-23-02?

b) If the answer to (a) is "no," explain why not.

c) Please explain how the above statement from SCE is in compliance with required progress item #1 and ACI SCE-23-02.

d) Explain why catastrophic wildfires are "difficult to predict using a normal probability distribution."

e) Does the use of maximum consequence values for predicting catastrophic wildfires align with electric utility industry standards? Please explain your response.

f) Is the use of maximum consequence values for predicting catastrophic wildfires supported by academic research on wildfire risk or wildfire science? Please explain your response.

g) Explain why using maximum consequence values is SCE's chosen method of predicting catastrophic wildfires.

h) Does SCE anticipate the use of maximum consequence values for predicting catastrophic

wildfires indefinitely? If no, under what conditions does SCE anticipate changing this method?

i) How does selection of a maximum consequence method (as opposed to a probability distribution approach) for predicting catastrophic wildfires affect SCE's chosen mitigation approach?

j) Has SCE compared its chosen maximum consequence approach with a probability distribution approach in terms of their results and effects on SCE's mitigation portfolio?

k) If the answer to part (j) is yes, please provide all available results (e.g. reports, workpapers, etc.) of such analysis.

l) If the answer to part (j) is no, please explain why.

[7] SCE 2025 WMP Update at 35; Office of Energy Infrastructure Safety, *Decision on 2023-2025 Wildfire Mitigation Plan: Southern California Edison Company*, October 24, 2023.

[8] SCE's 2025 WMP Update at 35

**Response to Question 02:**

*a) Did SCE "provide a plan with milestones for transitioning from using maximum consequence values to probability distributions in its 2026-2028 Base WMP when aggregating risk scores" for mitigation evaluation, cost/benefit calculations, and risk ranking" as directed in ACI SCE-23-02?*

The recitation of ACI SCE-23-02 in the question above is incomplete. In addition to the language quoted above in this data request, ACI SCE-23-02 alternatively provided SCE an opportunity to "propose an alternative strategy or demonstrate that its current methodologies are providing accurate outputs for calculating known risk." In its response to the ACI, SCE explained that its current methodologies are providing accurate outputs, as permitted.

*b) If the answer to (a) is "no," explain why not.*

Please see the response in part a.

*c) Please explain how the above statement from SCE is in compliance with required progress item #1 and ACI SCE-23-02.*

Please see the response in part a.

*d) Explain why catastrophic wildfires are "difficult to predict using a normal probability distribution."*

A normal probability distribution does not sufficiently represent the consequences of a catastrophic wildfire. Catastrophic wildfires, by their very nature, are low-probability, high-consequence events, dominated by extreme results (e.g., tails). These types of events are better represented by power law distributions.

These patterns are well supported by academic literature, some of which were presented by SCE and U.S. Forest Service (USFS) in OEIS-sponsored Risk Modeling Working Groups (RMWG). *See* SCE and USFS OEIS responses from July 2023 entitled "Long Duration High Intensity Wildfires" and SCE OEIS RMWG responses from September 2023 entitled "Avoiding Bias in Wildfire Modeling."

Furthermore, in Decision (D.) 21-11-009 in the Risk Informed Decision-Making Proceeding (R.20-07-013), Finding of Fact 12, the Commission recognized that "a distinguishing feature of wildfire size and consequences following power law behavior is that extreme events dominate the results, which is consistent with the recent California wildfires of historical proportions." Finding of Fact 13 in the same Decision goes on to state that it "is essential that the modeling methods used by IOUs in their RDFs, WMPs, and RAMPs produce a set of consequences for wildfire that sufficiently incorporate high-end losses."

*e) Does the use of maximum consequence values for predicting catastrophic wildfires align with electric utility industry standards? Please explain your response.*

Yes. Please see the response to part d.

*f) Is the use of maximum consequence values for predicting catastrophic wildfires supported by academic research on wildfire risk or wildfire science? Please explain your response.*

Yes. Please see the response to part d. Additionally, please see the academic literature and supporting data, below:

Li, S., Banerjee, T. Spatial and temporal pattern of wildfires in California from 2000 to 2019. Sci Rep 11, 8779 (2021). https://doi.org/10.1038/s41598-021-88131-9

CalFire Past Wildfire Activity Statistics (Redbooks) https://www.fire.ca.gov/our-impact/statistics

Keeley, J. E. & Syphard, A. D. Historical Patterns of Wildfire Ignition Sources in California Ecosystems. Int. J. Wildland Fire 27, 781–799 (2018). https://lpfw.org/wp-content/uploads/2018/12/2018_Keeley-and-Syphard_Historical-patterns-of-wildfire-ignition-sources-in-California.pdf

Short, K. C. Spatial Wildfire Occurrence Data for the United States, 1992–2015, U.S, Forest Service, (2017). https://www.fs.usda.gov/rds/archive/catalog/RDS-2013-0009.4

Schoenberg, F. P., Peng, R. & Woods, J. On the Distribution of Wildfire Sizes. Environmetrics 14, 583–592 (2003). https://onlinelibrary.wiley.com/doi/10.1002/env.605

*g) Explain why using maximum consequence values is SCE's chosen method of predicting catastrophic wildfires.*

Please see SCE's response to ACI SCE-23-02 in SCE's 2025 WMP Update, as well as the response to part d.

*h) Does SCE anticipate the use of maximum consequence values for predicting catastrophic wildfires indefinitely? If no, under what conditions does SCE anticipate changing this method?*

Not necessarily. In addition to the response to part d, SCE also notes that we have advocated for the Commission and OEIS to define catastrophic wildfire events. We also note that the issue of risk tolerance, risk scaling (formerly risk attitude), and tail risk are open items before for the Commission. We look forward to additional discussions on these topics before making any plans to modify our approach.

*i) How does selection of a maximum consequence method (as opposed to a probability distribution approach) for predicting catastrophic wildfires affect SCE's chosen mitigation approach?*

SCE objects to this question as vague and ambiguous. Subject to those objections, SCE does not have data to provide a response to this question.

*j) Has SCE compared its chosen maximum consequence approach with a probability distribution approach in terms of their results and effects on SCE's mitigation portfolio?*

No.

*k) If the answer to part (j) is yes, please provide all available results (e.g. reports, workpapers, etc.) of such analysis.*

N/A.

*l) If the answer to part (j) is no, please explain why.*

SCE uses deterministic, physics-based models, rather than probabilistic based models, and does not have the data to form the basis of a comparison. While potentially of academic interest, SCE does not have the resources to perform the level of analysis that would be necessary for a "compare and contrast" of SCE's current method relative to a probabilistic method. SCE suspects that such a comparison would see general alignment in terms of which portions of its service territory are highest risk. However, SCE cannot speculate as to where local differences might be present in either approach.