

Southern California Edison
2026-WMPs – 2026-WMPs

DATA REQUEST SET M G R A - S C E - 0 0 4

To: MGRA

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Received Date: 6/2/2025

Response Date: 6/5/2025

Question MGRA-4-11:

MGRA-4-11 Scenario WL4: Credible Worst Case

“SCE states that: “SCE FWD selection methodology uses weather and wind scenarios that meet these conditions for all FCZs based on observed wind and weather conditions in its 40+ year historical climatology. These include Credible Worst-Case conditions, (e.g., wind gusts with a probability of exceedance of 1 percent over the three-year WMP cycle (i.e., 300-year return interval)). See Section 5.2.2.2.2 and Appendix B: Supporting Documentation for Risk Methodology and Assessment for additional information.”

The referenced sections do not provide a technical description of how SCE derives its credible worst case weather conditions such as 300-year return interval return probabilities (such as extreme value statistics). Please provide a technical description of how SCE derives its worst-case values from the observed weather history.

Response to Question MGRA-4-11:

SCE’s wildfire risk model (i.e., FireSight 8) considers Fire Weather Days (FWDs) in which an ignition could result in a significant wildfire event. These FWDs are selected from SCE’s 40+ year historical climatology. Fire Climate Zones (FCZ) represent regions in SCE’s service territory with homogenous weather, vegetation, topography, and fire history.

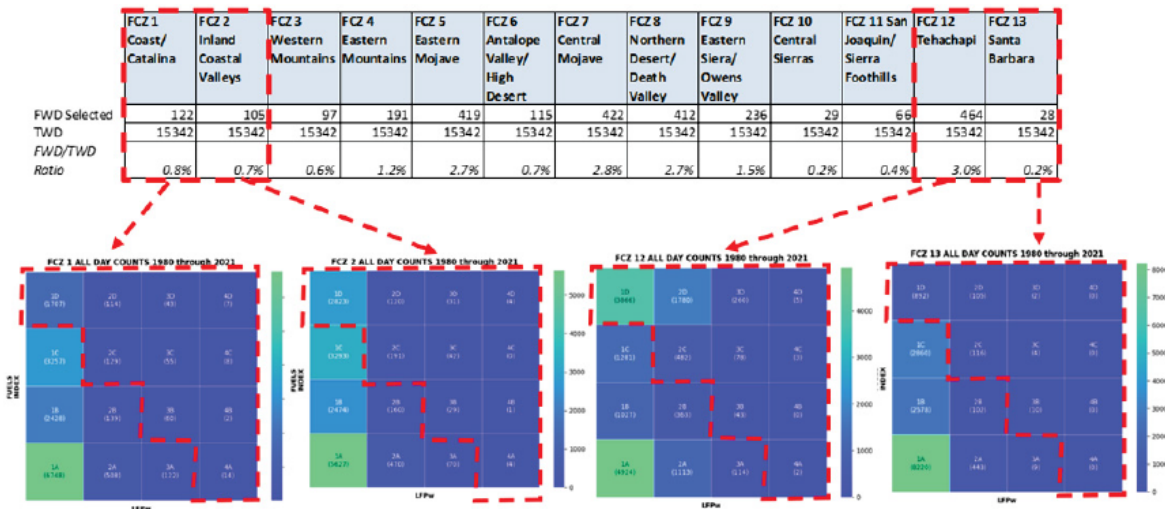
Using SCE’s Fire Behavior Matrix (FBM), depicted in the figure below, SCE selects FWD that are substantially dry, windy, or a combination of dry and windy germane to each FCZ and can result in a wildfire event at 2x2 kilometer spatial resolution over SCE’s 40+ year historical climatology.

Fire Behavior Matrix				
Fuels Component (Fuels Index)	Very Dry	1% 1D	5% 2D	100% 3D
				100% 4D
		1% 1C	50% 2C	100% 3C
				100% 4C
Very Moist		1B	2B	5% 3B
				5% 4B
		1A	2A	3A
				1% 4A
		Weather Component (LFPw)		
		Light Winds		Extreme Winds

Individual quadrants of the FBM are referred to as Fire Behavior Outcomes (FBOs). Each FCZ is

represented by a single FBM. Each FBM contains 16 individual FBOs. Each FBO represents a specific ranking of fuel dryness and windiness relative to other weather conditions in each FCZ. Quadrants 1D, 2D, 3D, 4D, 2C, 3C, 4D, 3B, 4B, 4A are FBO which represent fire weather conditions.

The count or frequency of FWD in each quadrant can be divided by the Total Weather Days (TWDs) in SCE's historical climatology to determine the frequency (or return interval) of these types of fire weather conditions for each FCZ.



See example below:

The formula for deriving a return interval is as follows:

$$\text{Return interval} = (n+1)/m$$

Where:

“n” number of time periods (e.g., years, days, months) on record

“m” is the rank of observed occurrences when arranged in descending order

Count of FWD in quadrant 4D (windiest and dry conditions) for FCZ 1 = 7

Count of TWD in SCE's Historical Climatology = 15,342

$$= (15,342+1)/7$$

The return interval for this type of FWD in FCZ is 1 in ~2,192 days.