

PACIFIC GAS AND ELECTRIC COMPANY
Wildfire Mitigation Plans
Rulemaking 18-10-007
Data Response

PG&E Data Request No.:	MGRA_011-Q33		
PG&E File Name:	WildfireMitigationPlans_DR_MGRA_011-Q33		
Request Date:	March 4, 2021	Requester DR No.:	WMP-2021 MGRA PGE DataRequest 5
Date Sent:	March 9, 2021	Requesting Party:	Mussey Grade Road Alliance
PG&E Witness:		Requester:	Joseph Mitchell

Regarding PG&E's ignition probability model:

QUESTION 33

On page 98 of its WMP, PG&E lists “wind max” as the annual 99th percentile hourly wind speed at 10 m. However, “wind max” is not listed as a variable used in either the equipment probability of ignition model (pp. 102). Did PG&E conduct an analysis of equipment ignition probability using this variable? And if so please present the results.

ANSWER 33

Yes, PG&E did use the “wind max” data set as part of the initial set of input variables to the Equipment Probability of Ignition Model. As part of the regularization model development step the “wind max” variable was removed from the input variables as it did not contribute performance gain during out of sample testing.

The fact that the 99th percentile hourly wind speed did not contribute performance gain for the Equipment Probability of Ignition Model was questioned by our modeling team. As seen in the jackknife results below, it was left in the vegetation ignition probability model which was developed before the Equipment Probability of Ignition Model. Similar to the Equipment Probability of Ignition Model jackknife result on page 203 of the 2021 WMP, for the Vegetation Probability of Ignition Model, the average wind and wind max have a marginal effect on the predictive power of the model. With further investigation the team arrived at the following understanding that supported removing the variable from the Equipment Probability of Ignition Model:

The ignition probability models are tuned to predict fire-season annual probabilities of reportable ignitions according to conditions at each grid location. Prevailing wind metrics over the course of the fire season are only weakly predictive of ignitions. This is because: (1) over 90% of reportable ignitions do not occur during unusual wind conditions; (2) prevailing winds shape vegetation settlement and structure - Red Flag Warning ignitions are due to anomalous conditions, not prevailing conditions and the low-risk coasts and low-veg high mountains see the highest prevailing winds; and (3) the danger associated with wind is most closely correlated with fire intensity and spread and therefore quantified by consequence data (as distinct from ignitions).

One way to interpret the annual models is that such conditions occur every year and what makes specific locations risky are variables that describe the presence of vegetation and dryness of fuels on top of the predictable occurrence of winds and, spatially speaking, gusty winds are less unusual than vegetation and fuels.

