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 6

To: Cal Advocates
Prepared by: Berta Sandberg
Job Title: Senior Advisor
Received Date: 4/15/2024

Response Date: 4/18/2024

Question 04.b-c:
In SCE's 2025 WMP Update at 2, SCE states that it "has made updates to its wildfire risk models that fall within Energy Safety's definition of 'significant.'"

a) What are the specific WMP initiatives that have been affected by the new model updates?
b) Explain, with specific examples, how the updated probability of ignition (POI) model has been validated against empirical data.
c) Explain, with specific examples, how the updated wildfire consequence model has been validated against empirical data.

Response to Question 04.b-c:

b) Explain, with specific examples, how the updated probability of ignition (POI) model has been validated against empirical data.

The updated Probability of Ignition (POI) model uses the same machine learning model and feature lists as the previous year's POI. The model incorporates numerous factors such as asset information, location data, weather conditions, topology, and historical failure data. The new POI uses updated asset data, updated weather data, updated failure data, and updated ignition calibration data to make the POI current.

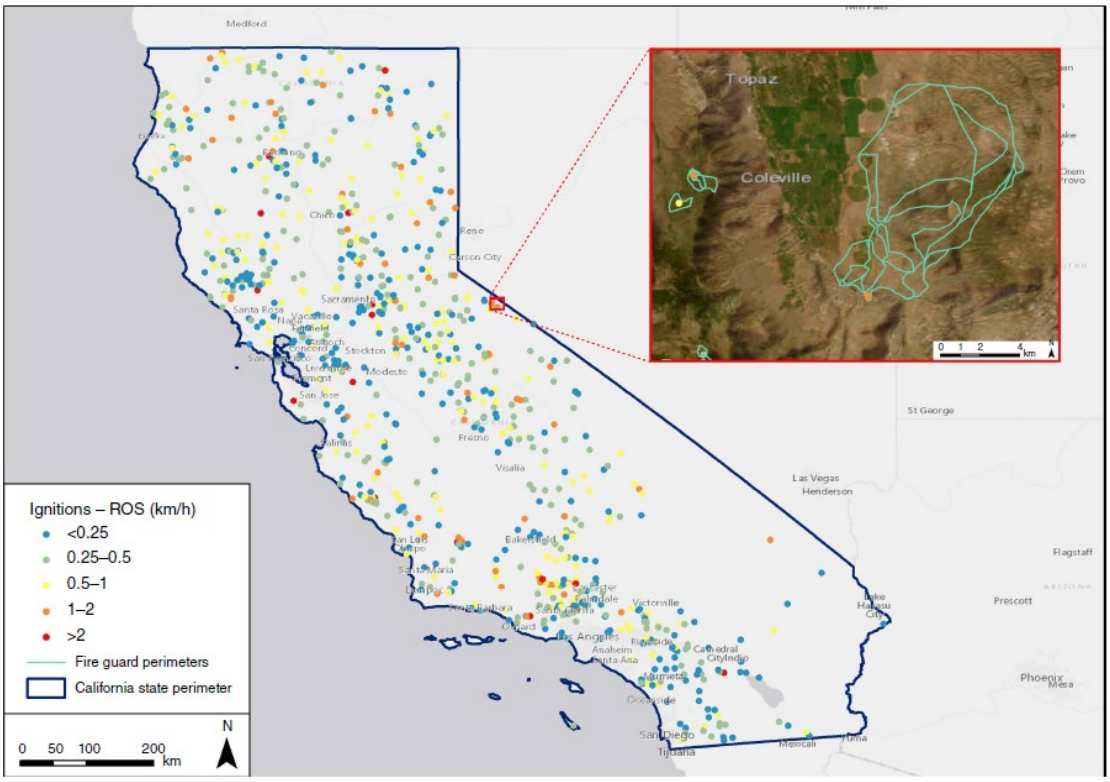
The performance of the asset models is evaluated using precision, recall, and Area Under the Curve (AUC). These metrics provide a comprehensive assessment of the model's performance:

- **Precision:** This metric indicates the proportion of positive identifications that were correct. A high precision means that an asset flagged as likely to fail is indeed likely to fail.
- **Recall**: This metric shows the proportion of actual positives that were identified correctly. A high recall means the model correctly identifies many assets that are likely to fail.
- **AUC**: This is the area under the ROC (Receiver Operating Characteristic) curve or the Precision-Recall curve. AUC provides a single number summary of the model performance, with 1 representing a perfect model and 0.5 representing a model that performs no better than random chance.

Further details are in the documentation provided in the 2023 WMP, which SCE has attached to this response.

c) Explain, with specific examples, how the updated wildfire consequence model has been validated against empirical data.

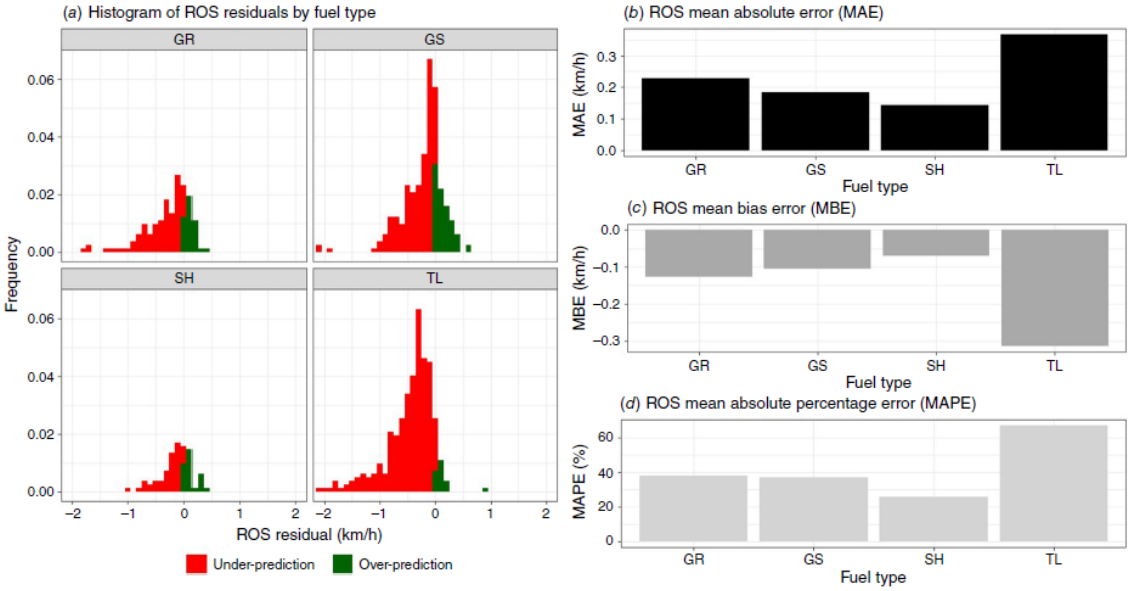
As referenced in SCE's WMP (pg. 9, and 41), SCE's consequence models were empirically validated through the analysis of the rate of spread (ROS) of 1,853 wildfire perimeters from the California FireGuard (FG) database through the first burning period (up to 8 hours; see map, below).



The observed wildfire growth of these remotely sensed observed aggregated data were compared to predicted ROS from wildfire consequence simulations using four metrics:

- (1) ROS residual representing the difference between the predicted and observed ROS. A positive residual indicates an overestimation;
- (2) mean absolute error (MAE), representing the average of the absolute error;
- (3) mean bias error (MBE), representing the average bias between the predicted and observed values
- (4) mean absolute percentage error (MAPE), a measure of prediction accuracy of a forecasting method in statistics that expresses the accuracy in relative terms

The aggregate sums of these metrics are provided below.



For more detailed information, see Cardil Adrián, Monedero Santiago, SeLegue Phillip, Navarrete Miguel Ángel, de-Miguel Sergio, Purdy Scott, Marshall Geoff, Chavez Tim, Allison Kristen, Quilez Raúl, Ortega Macarena, Silva Carlos A., Ramirez Joaquin (2023) Performance of operational fire spread models in California. International Journal of Wildland Fire 32, 1492-1502 for additional information.