

*Southern California Edison*  
*R.18-10-007 – SB 901*

**DATA REQUEST SET S E D - S C E - 0 0 4**

**To: SED**

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**Response Date: 3/12/2019**

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**Question 06 a.i-vi:** The wildfire events included within CalFire data encompass events in SCE’s service area, as well as a number of events that occurred outside our service area but within California. The CalFire data population of fires associated with Electrical Power in SCE’s service is relatively small, especially for fires greater than 5,000 acres. By including events from areas outside of SCE’s service area, SCE could provide a more robust wildfire risk analysis. SCE’s consequence modeling utilizes this CalFire data for fatalities, structures destroyed, and acres burned.” - Marius Anelauskas

- i. How many events of the total were within SCE’s service territory?
- ii. How many of the fires in SCE’s service territory that were used for modeling exceeded 5,000 acres?
- iii. Why does included the number of fires outside of SCE’s territory make the model results more robust?
- iv. Because the model squares the consequence scores wouldn’t a larger consequence that included a greater number of fires over 5,000 acres have a proportional impact on the EV-MARS and TA-MARS? If not, explain why not?
- v. The same question for wildfire mitigations’ RSE.
- vi. See Pg. 10-44: Recalculate the EV-MARS and TA-MARS in Table V-1; using the model inputs that only are based on the number and consequence of the wildfire events that occurred in SCE territory and present these results next to the results in the Table V-1.

**Response to Question 06 a.i-vi:**

- i. The following table summarizes the events included within the consequence distributions used within the RAMP Wildfire Model:

<b>Outcome</b>	<b>Total # of Fires used in RAMP analysis</b>	<b>Total # in SCE Territory</b>
Fire size greater than 5,000 acres	Eleven, over the period 2007 - 2017  Please reference SCE’s RAMP Workpaper page 10.3	One, over the period 2007 - 2017
Fire size less than 5,000 acres	1,378 over the period 2010-2017  Please reference SCE’s RAMP Workpaper page 10.4	The data was provided by CAL FIRE to SCE in a format that was extremely difficult to extract the specific location inside/outside SCE’s service territory. The number

		of incidents inside/outside of SCE's territory is not known from the CAL FIRE data.
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- ii. Please see table in response to question i.
- iii. The inclusion of additional data points in a data set to be fit to a given distribution increases what is known as “the goodness of fit.”<sup>1</sup> When there are more data points available, the distribution selected for the data will more closely match the subject data. In cases where there are very few data points, such as for fires greater than 5,000 acres, SCE used California state-wide information from CAL FIRE in order to enhance the goodness of fit.
- iv. See response to item iii above.

Including a greater number of fires does not necessarily result in a larger consequence score being generated. For example, using a mock data set of [1, 2, 3, 4], the expected average of this data set is 2.5. However, if one adds another data point to it, *e.g.*, [1, 2, 3, 4, 1], the average of this data set goes down to 2.2.

Generally, a larger distribution mean for safety (*i.e.*, serious injuries and fatality) consequence would not have a proportional impact on EV-MARS and TA-MARS. SCE used a non-linear function to convert safety consequences in natural units to MARS, a unit-less risk dimension. The other two consequence dimensions, namely reliability and financial, use a linear function to convert from natural units to MARS, which in this specific case would be a proportional impact.

- v. See response in item iii and iv.
- vi. SCE objects to this request on the grounds that it is unduly burdensome and calls for a study/analysis that SCE has not undertaken, rather than for the production of underlying data in SCE's possession. For the reasons stated in RAMP testimony and workpapers, SCE believes the assumptions and data used to quantify the wildfire risk in the MARS model are appropriate and best reflect the dynamic nature of the risk over the RAMP period. SCE has provided SED the model files in its response to Data Request Set SED-SCE-Verbal-002, Question 1 and any party that wishes to re-run certain parameters can do so at their own discretion. SCE notes that re-running the wildfire risk model using a wholesale change in the consequence data may not be a trivial exercise, and would require substantial time and

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<sup>1</sup> For an explanation of the “goodness of fit,” please see <https://newonlinecourses.science.psu.edu/stat504/node/60/>

resources to capture the appropriate data, run the model, post-process the results, and QC the process.