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June 1, 2023

DATA REQUEST RESPONSE

LIBERTY UTILITIES (CALPECO ELECTRIC) LLC

Data Request No.: Cal Advocates-Liberty-2023WMP-09
Subject Matter: 2023 Wildfire Mitigation Plans
Originator: Talal Harahsheh
Due Date: June 1, 2023

REQUEST NO. 1:

Page 70 of Liberty's WMP states that social vulnerability is not a factor currently included in Liberty's wildfire risk analysis, though Liberty intends to incorporate it in its future risk modeling process.

- a) Please identify the constraint(s) that hindered the incorporation of social vulnerability prior to Liberty's 2023 WMP submission.
- b) State when Liberty anticipates being able to include social vulnerability as part of Liberty's risk modeling process.
- c) In which year of this WMP cycle does Liberty plan on being able to include social vulnerability in its future risk modeling process?

RESPONSE TO REQUEST NO. 1:

- a) With the final 2023 WMP technical guidelines issued approximately three months prior to submission of the 2023 WMP, Liberty was not able to incorporate social vulnerability into its 2023 WMP submission due to time constraints.
- b) Liberty plans to incorporate social vulnerability considerations in 2024 and report on this enhancement in its future WMP filings.
- c) See Response 1b.

REQUEST NO. 2:

Page 70 of Liberty's WMP states that physical vulnerability is not a factor currently included in Liberty's wildfire risk analysis, though Liberty intends to incorporate it in its future risk modeling process.

- a) Please identify the constraint(s) that hindered the incorporation of physical vulnerability prior to Liberty's 2023 WMP submission.

- b) State when Liberty anticipates being able to include physical vulnerability as part of Liberty's risk modeling process.
- c) In which year of this WMP cycle does Liberty plan on being able to include physical vulnerability in its future risk modeling process?

RESPONSE TO REQUEST NO. 2:

- a) Liberty's current fire science consultant, Dr. Chris Lautenberger, has advised Liberty that there is currently no validated generalized methodology that relates physical characteristics of structures to their survivability in wildland fires. Put differently, it is Liberty's understanding that fragility curves to quantify a structure's probability of being damaged or destroyed in a fire based on its physical characteristics do not exist.
- b) Liberty intends to incorporate physical vulnerability into its risk modeling when generalized and validated fragility curves, or comparable approaches, have been developed and validated by the fire science community.
- c) See Response 2b.

REQUEST NO. 3:

Page 70 of Liberty's WMP states that coping capability is not a factor currently included in Liberty's wildfire risk analysis, though Liberty intends to incorporate it in its future risk modeling process.

- a) Please identify the constraint(s) that hindered the incorporation of coping capability prior to Liberty's 2023 WMP submission.
- b) State when Liberty anticipates being able to include coping capability as part of Liberty's risk modeling process.
- c) In which year of this WMP cycle does Liberty plan on being able to include coping capability in its future risk modeling process?

RESPONSE TO REQUEST NO. 3:

- a) With the WMP technical guidelines issued approximately 3 months prior to submission of the WMP completeness check, Liberty was not able to incorporate coping capacity into its 2023 WMP submission due to time constraints.
- b) Liberty plans to incorporate coping capacity in 2024 and report on this enhancement in its future WMP filings.
- c) See Response 3b.

REQUEST NO. 4:

Page 70 of Liberty's WMP states the following factors are included as part of Liberty's wildfire risk analysis: Equipment/assets, Topography, Weather, Vegetation, Climate change, Assets at risk, and Fire ignition and spread.

Please explain how each of these factors impacts Liberty's quantification of risk at the circuit level:

- a) Equipment/assets
- b) Topography
- c) Weather
- d) Vegetation
- e) Climate change
- f) Assets at risk
- g) Fire Ignition and Spread

RESPONSE TO REQUEST NO. 4:

- a) Equipment/assets: GIS data are used to construct an ignition buffer surrounding Liberty's equipment and assets for use in fire spread modeling.
- b) Topography: Topography is an input to Liberty's fire spread modeling.
- c) Weather: Weather an input to Liberty's fire spread modeling.
- d) Vegetation: Vegetation is an input to Liberty's fire spread modeling.
- e) Climate change: Liberty conducted climate-adjusted fire spread modeling.
- f) Assets at risk: Assets at risk are considered when quantifying fire consequence.
- g) Fire Ignition and Spread: A fire spread model that considers fire ignition and spread forms the basis of Liberty's fire risk modeling.

REQUEST NO. 5:

Page 70 of Liberty's WMP states the following factors are included as part of Liberty's wildfire risk analysis:

- Equipment/assets,
 - Topography,
 - Weather,
 - Vegetation,
 - Climate change,
 - Assets at risk, and
 - Fire ignition and spread.
- a) For each factor listed above, does Liberty have any review procedures in place to verify the accuracy of changes in the quantification of risk from one year to the next?
 - b) If the answer to part (a) above is yes, please provide a description of how Liberty updates the quantification of risk for each factor listed each year.
 - c) Please provide what data sources Liberty uses to verify change in the quantification of risk for each factor listed above.

RESPONSE TO REQUEST NO. 5:

- a) For the reasons stated below, no formal processes are currently in place to verify the accuracy of changes in the quantification of risk related to the following factors:
 - Equipment/assets: Liberty maintains internal GIS data for its equipment and assets.

- Topography, weather, vegetation, climate change, assets at risk: Liberty is an end user – not a developer – of these datasets that serve as inputs to its fire spread modeling. In all cases, Liberty uses open-source, widely-used, and industry standard data sets developed by authoritative federal and state agencies.
- Fire ignition and spread: Liberty uses a peer reviewed open-source fire spread model for modeling ignition and spread. This same model is also used to forecast the spread of most large fires in the United States in real time under funding from the US Forest Service with its accuracy is continuously being assessed and improved.

b) N/A

c) N/A

REQUEST NO. 6:

Page 71 of Liberty’s WMP states that “Finally, Liberty also does not consider burn probability from fires caused by sources other than utilities as in the Technical Guidelines.”

Please explain why Liberty does not consider the burn probability from fires caused by sources other than utilities.

RESPONSE TO REQUEST NO. 6:

Liberty’s fire risk modeling currently addresses only fires caused by its infrastructure. Impacts from other fires to Liberty’s system is a grid resiliency issue that Liberty may address in the future after its utility-caused fire risk modeling has matured

REQUEST NO. 7:

Page 81 of Liberty’s WMP, states “Overall utility risk is calculated by circuit from wildfire risk and PSPS risk, with an 80% weight to wildfire risk and 20% to PPS risk.”

- a) Please explain how Liberty arrived at the abovementioned specific weighting of wildfire risk and PPS risk.
- b) Has Liberty consulted with any agencies, universities, research groups, or other entities on the calculation of the abovementioned weighting of wildfire risk and PPS risk? Please list those entities if so.

RESPONSE TO REQUEST NO. 7:

The sentence “Overall utility risk is calculated by circuit from wildfire risk and PPS risk, with an 80% weight to wildfire risk and 20% to PPS risk” contains a typographical error. It should read “Overall utility risk is calculated by summing wildfire risk and PPS risk by circuit.” The statement about 80/20 weighting was inadvertently left in Liberty’s 2023 WMP from a previous draft.

REQUEST NO. 8:

Page 96 of Liberty's WMP presents Table 6-7: Liberty Top-Risk Circuits, which provides risk scores for Liberty's top 20 risk-contributing circuits. With this context:

- a) Does Liberty sequence its top risk circuit projects one by one according to the risk ranking or does Liberty work on multiple top risk circuit projects simultaneously?
- b) On how many of the top 20 risk-contributing circuits will Liberty complete grid design and system hardening projects for wildfire mitigation during the 2023-2025 WMP cycle?
- c) Does Liberty use estimates of expected risk reduction to determine the sequence of mitigation work conducted on its top-risk circuits?
- d) If the answer to part (c) is no, why not?

RESPONSE TO REQUEST NO. 8:

- a) Liberty works on multiple circuits simultaneously.
- b) Liberty plans to conduct grid design and system hardening work on 16 of the top 20 risk-contributing circuits in 2023.
- c) No.
- d) As stated in Section 7.2.2.3 of its 2023 WMP, Liberty does not yet have sufficient information to calculate the risk reductions for top-risk circuits and plans to develop an approach in 2023. Refer to Section 7.2.2.1 of Liberty's 2023 WMP for Liberty's estimated timeline to develop the baseline risk of assets failing in service given historic outage events by type to calculate the likelihood of the risk events in future with the planned mitigations correlating to the events to estimate risk reduction.

REQUEST NO. 9:

Page 96 of Liberty's WMP presents Table 6-7: Liberty Top-Risk Circuits, which provides risk scores for Liberty's top 20 risk-contributing circuits.

Please provide an Excel table that augments Table 6-7 with information about planned wildfire mitigation measures *on each circuit* during the 2023-2025 WMP cycle. Specifically, the table should add these new columns to Table 6-7:

- a) Brief description of grid design and system hardening work planned for wildfire mitigation purposes in 2023-2025 (for example: 2.0 miles of undergrounding, 1.0 miles of covered conductor installation, and installation of 1 new recloser on this circuit).
- b) The month and year when Liberty began project planning for the work identified in part (a).
- c) The month and year when Liberty began construction or plans to begin construction of the work identified in part (a).
- d) The month and year when Liberty currently plans to complete the project(s) identified in part (a).
- e) Brief description of other wildfire mitigation measures planned in 2023-2025.
- f) Timeline for completion of the work identified in the previous part.

RESPONSE TO REQUEST NO. 9:

Refer to file: CalAdvocates-Liberty-2023WMP-09_Liberty Response Question 9

REQUEST NO. 10:

Pages 104-105 of Liberty's WMP states:

In late January 2023, Liberty signed a formal agreement with Direxyon to pilot its asset risk decision-making solution to be incorporated, in part, in this WMP. If the pilot is successful for the pole asset type and produces effective decision-making tools... Liberty will continue building out the risk-informed decision-making tools for multiple assets to better plan future investments and repairs and maintenance plans given budget and resource constraints.

- a) Please describe the goals, analytical methods, and duration of the abovementioned pilot project by Direxyon.
- b) Describe the success criteria for the abovementioned Direxyon pilot project – in other words, what criteria is Liberty using to evaluate the success of the asset risk decision-making solution?
- c) Will the abovementioned pilot be completed by the end of 2023?
- d) If the answer to subpart (c) is “no,” please state when Liberty expects the pilot to be complete.
- e) Please describe each specific way that Liberty anticipates utilizing the Direxyon tools to inform its 2023-2025 wildfire mitigation strategy.

RESPONSE TO REQUEST NO. 10:

- a) Refer to file: CalAdvocates-Liberty-2023WMP-09_Liberty Response Question 10a for the scope of work of the pilot project with Direxyon. Liberty provided data to Direxyon that included GIS pole information and asset inspection information that was used to model in service risk for pole assets. The information included, but was not limited to, pole age, pole type, date of last inspection, GO 165 condition findings, vegetation LiDAR clearance findings, and financial costs of inspection and repair/replacement. Data was also provided from Technosylva to model fire risk. Direxyon combined the findings from in service risk and fire risk to create an overall risk scenario for pole assets throughout Liberty's territory.
- b) The final 2023 WMP technical guidelines were issued approximately three months prior to submission of the 2023 WMP. During that time, Liberty met with a list of vendors that could potentially help expand Liberty's risk profile. Direxyon was selected for this pilot project and the deliverables agreed upon were provided subsequent to the 2023 WMP filing. Liberty is actively in the process of evaluating the deliverables, adjusting model weighting, and familiarizing internal resources with the tool. Thus, evaluation criteria have not been fully developed at this time. Examples of evaluation criteria Liberty will consider are cost, accuracy of risk identification and model outputs, the feasibility of scenarios and the ability to operationalize model outputs.

- c) Yes
- d) N/A
- e) Subsequent to evaluating Direxyon's modeling for pole assets, Liberty plans to operationalize outputs to inform decision-making. Liberty will continue working with Direxyon to run risk and financial scenarios that can inform decisions around which pole mitigations reduce risk compared to the costs of those mitigations. Moving forward, Liberty will consider including additional assets and other risk elements (*i.e.*, conductor, vegetation, etc.).

REQUEST NO. 11:

Page 107 of Liberty's WMP states "Liberty's strategy development for this WMP did not utilize wildfire risk scores developed by Reax."

- a) Does Liberty plan on utilizing the wildfire risk scores developed by Reax to help plan future decisions regarding wildfire mitigation?
- b) If the answer to part (a) above is yes, when does Liberty plan on utilizing the wildfire risk scores developed by Reax?
- c) If the answer to part (a) above is yes, please describe how Liberty's current approach will change with the utilization of the wildfire risk scores by Reax.
- d) If the answer to part (a) is no, please explain why Liberty will not utilize the wildfire risk scores by Reax to help plan future decisions regarding wildfire mitigation.

RESPONSE TO REQUEST NO. 11:

- a) Yes.
- b) Liberty plans on utilizing the wildfire risk scores developed by Reax in 2024.
- c) As stated in Section 7.1.4.2 of its 2023 WMP, Liberty plans to have a cohesive mitigation portfolio plan approach in its next WMP that incorporates data analytics and risk-informed decision-making assessment and monitoring to improve its overall risk reduction performance over time.
- d) N/A

If you have any questions or require any additional information, please contact me at:

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