BEAR VALLEY ELECTRIC SERVICE, INC.
DATA REQUEST RESPONSE
DUE June 11, 2024

TRANSMITTED VIA ELECTRONIC MAIL

DATA REQUEST

Request Date: **Thursday, May 16, 2024**

Response Due: June 11, 2024

Originator: Andie Biggs, Utilities Engineer

Data Request Number: OEIS-RMWG_2024-001

REQUEST

Q01. Regarding: visual depiction of risk models

Please provide a visual depiction of various models used by utilities and how such models are connected (e.g., swim lanes, flowchart).

Q02. Regarding: data usage by model

Please provide data usage broken down by model (e.g., vegetation model, conductor model, transformer model, etc.) using the example table provided below. Include the following data usages:

i. Scale and geographical context.
ii. Topography.
iii. Quality of historical outage, fault, and ignition data.
iv. Usage of outage and fault events to augment ignition data.
v. Integration of potential ignitions avoided due to PSPS events.
vi. Asset data (including asset age, health, inspection results, type, etc.).
vii. Impacts of system hardening and other initiative efforts.
viii. Climate conditions (include historical wind conditions, relative humidity, temperature, etc.).
ix. Vegetation (include type, density, height, etc.).
x. Fuel characteristics (include load, size, continuity, vertical arrangement, moisture, etc.).
xi. Impacts of routine and enhanced vegetation management activities (including tree

trimming, tree removal, inspections, etc.).

xii. Frequency of updates to datasets and inputs, including any associated triggers to determine the need for updates.

xiii. Accuracy and quality checks for data and inputs.

Example of Table Illustrating Data Usage by Model

Data Usage	Model 1	Model 2	Model 3	Model 4
Scale and geographical context	EXAMPLE: 100m x 100m pixels across the HFTD Tier 2&3.			
Topography	EXMAPLE: USGS Topographic Position Index			
...				

Q03. Regarding: model descriptions

Please provide model descriptions for ignition, consequence, and PSPS models using the example table provided below. Include the following descriptions:

i. Algorithms used and machine learning capabilities.
ii. Inputs for the model.
iii. Outputs for the model.
iv. Description of any modules used, including but not limited to:
    (1) Climate change.
    (2) Ingress and egress.
    (3) Suppression.
    (4) Conflagration risks.
    (5) Smoke impacts.
    (6) Community vulnerability.
v. Modeling components, linkages, and interdependencies.
vi. Weight of each data component and input.
vii. Automatization implemented.
viii. Frequency of model updates, including the basis for each update.

Example of Table Illustrating Descriptions by Model

Descriptions	Ignition Model	Consequence Model	PSPS Model
Algorithms used and machine learning capabilities	EXAMPLE: Max Ent		
Inputs for the model			
...			

Q04. Regarding: model outputs

Please provide how model outputs are analyzed and utilized for each model using the example table provided below. Include:

i. Confidences for each modeling component, including how such confidences were determined.
ii. Range of uncertainty for model outputs, including how those ranges are determined and how uncertainty is minimized.
iii. Systems used to verify the model outputs, including verifier (subject matter experts, third-party) and mechanisms for implementing lessons learned.
iv. How uncertainty affects the interpretations of model outputs.
v. Determination of highest risk areas based on model outputs.
vi. Use of subject matter expertise for inputs and further verification.

vii. Scaling of outputs in final determinations.
viii. Risk tolerances used for decision-making.

Example of Table Illustrating Outputs by Model

Output	Model 1	Model 2	Model 3	Model 4
Confidences for each modeling component, including how such confidences were determined.	EXAMPLE: Receiver Operating Characteristic (ROC) /Area Under the Curve (AUC)			
Range of uncertainty for model outputs, including how those ranges are determined and how uncertainty is minimized.	EXAMPLE: Evaluation of ROC/AUC, Precision, and Recall values			
...				

Q05. Regarding: description of any collaborations among the utilities
Please provide a description of all collaborations previously undertaken among the utilities, as well as details on any known consistency across utilities, including:
i. What modeling approaches are already consistent.
ii. Which modeling approaches have the potential for more consistency and how approaches would benefit from consistency.
iii. Where consistency is infeasible or not necessary.

Q06. Regarding: description of any additional collaborations
Please provide a description of all collaborations previously undertaken and/or ongoing with other entities.

Q07. Regarding: attachments
Please provide attachments of:
i. All internal or third-party validations completed, and
ii. Description of any peer review of risk models utilized.

END OF REQUEST