

California Energy Safety Data Guidelines Overview

Presented at Oregon Wildfire and Electric Collaborative Workshop

December 10, 2024



Agenda

1. Vision and Mission

- *Safeguarding California Through Wildfire Resilience.*

2. Organization

- *A Unified Front Against Wildfires*

3. Brief History

- *A Legacy of Action and Progress*

4. Data Collection

- *What We Gather and Why*

5. Key Challenges

- *Defining and implementing Data Guidelines*

6. Key Outcomes

- *Delivering Impact*

7. Lessons Learned

- *Insights for the Future*

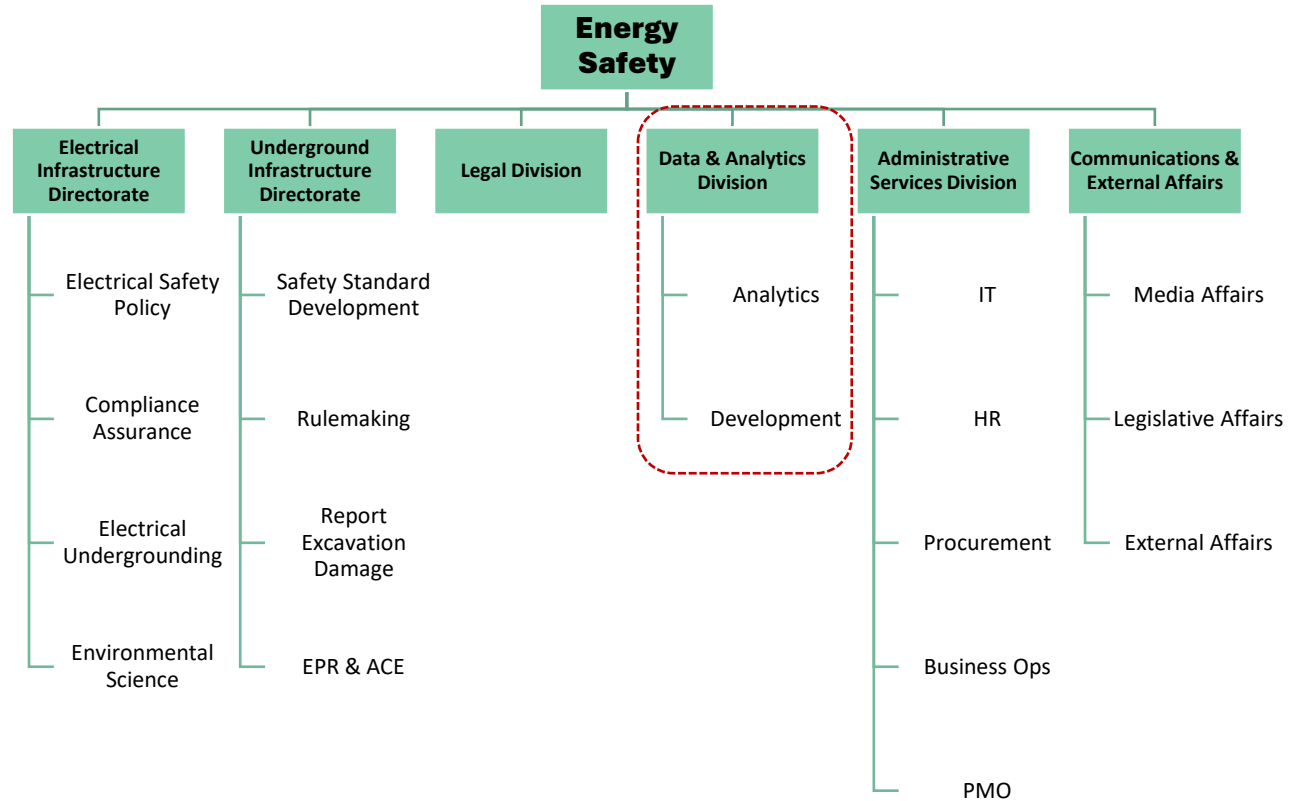
8. Empowering Utilities

- *PG&E Case Study*

Mission

To advance long-term utility *infrastructure safety through data-driven, wildfire mitigation evaluation and compliance, excavation standards and education*, in collaboration with local, state, and federal agencies, and in support of improved utility infrastructure, safety culture, and innovation.

Organization



Evolution of Data Guidelines

2020

(Ver 1.0)



- Initial release focusing on GIS data.
- Basic GIS elements and metadata for EC assets and WFM mitigations.
- Foundation for structured and standardized data collection.

- Enhanced guidance narratives.
- Integration of WSD GIS data preparation and submittal guidance.
- Detail Asset points and line features, risk events, PSPS data, and initiative tracking.
- Expanded focus on PSPS events, vegetation management, and initiative classification.

2021

(Ver. 2.0 & 2.1)



2022

(Ver 2.2. & 3.0)



- Improved data completeness and Improved performance metrics; included scientific name for vegetation species.
- Comprehensive data schema revisions; additional tables for performance metrics.
- Enhanced ability to track and evaluate EC compliance.

2023

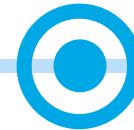
(Ver 3.1 & 3.2)



- Improved data completeness and Improved performance metrics.
- Focus on detail initiative audits and grid hardening metrics; refined quarterly and annual reporting formats.
- Emphasis on Predictive Modeling and proactive risk management through enhanced metrics and guidelines.

2024

(Ver 4.0*)



- Enhanced Data Collection Templates.
- Submission cadence changed from Quarterly to Quarterly and Yearly.
- Other tabular data enhancements for clarity and simplicity.

Evolution of the Wildfire Mitigation data standards has significantly improved data collection, analysis, and wildfire risk management.

**Improved Data
Standardization**

**Increased Scope of
Captured Data**

**Enhanced Data Quality
and Completeness**

**Improved Accuracy in
Monitoring and Evaluation**

**Proactive Risk
Management Through
Streamlined Reporting**

**Increased Stakeholder
Collaboration**

Data Reporting Process

- All Electrical Corporations are responsible for submitting data related to Wildfire Mitigation Plans (WMPs) and Infrastructure Safety.
- GIS data is submitted as geodatabases (GDB) compressed in zip folders.
- Photos related to spatial data submitted in categorized zipped folders.
- Tabular data is submitted as Excel Workbooks.
- Data is uploaded via a secure SharePoint portal or e-filing systems.
- All data must include corresponding metadata.
- Data is submitted Quarterly and at the End-of-year (EOY).
- Quarterly GIS and Tabular data are submitted by May 1st, Aug 1st, November 1st, and Feb 1st of the following year.
- EOY data is submitted on Feb 1st, along with Q4 data.

Data Reporting Process Contd.

- Data submissions must adhere to specific schema and data standards.
- Use of standardized templates and naming conventions is mandatory for uniformity and compliance.
- Specific guidelines must be followed to report missing and NA data.
- Errors or updates must be revised and resubmitted by the next quarterly deadline.
- Confidential designations can be applied for specific data under regulatory guidelines.
- Certain data locations, such as high-voltage assets, may be marked confidential.

What Data is Collected?

Geographic Information System (GIS) Data	Wildfire Mitigation Tabular Data	Asset Details Data	Operational Events Data	Inspection and Maintenance Data
<p>Spatial data related to assets, lines, events, and initiatives, used to monitor infrastructure and wildfire risks.</p>	<p>Tabular data focusing on initiatives, performance metrics, and risks associated with wildfire mitigation efforts.</p>	<p>Information on specific assets including their type, location, operational status, and risk assessments</p>	<p>Data related to planned and unplanned events affecting operations and infrastructure performance.</p>	<p>Records related to inspections and maintenance schedules to ensure infrastructure safety and reliability.</p>
<ul style="list-style-type: none">• Primary and Secondary Distribution Lines• Substation Information• Camera Location Details• Support Structures	<ul style="list-style-type: none">• Quarterly Initiative Updates• Risk Event Drivers• Ignition Drivers• Mitigation Financials	<ul style="list-style-type: none">• Transformers• Substations• Connection Devices• Meters• Fuses	<ul style="list-style-type: none">• PSPS Events• Risk Events• Ignition Events• Unplanned Outages• Wire Down Events	<ul style="list-style-type: none">• Inspection Schedules• Maintenance Histories• Vegetation Inspections• Asset Inspection Logs

The implementation of WFM Data Guidelines often encounter challenges due to the complexity of the data requirements, diverse utility capabilities, and evolving wildfire risks.

Data Quality and completeness

- **Incomplete Data Submission:** Utilities may struggle to provide comprehensive datasets due to legacy systems or missing historical data.
- **Inconsistent Data Standards:** Variations in how utilities record, and report data can lead to discrepancies and reduced usability of aggregated data.

Data Management & Integration

- **Legacy Systems:** Older systems may lack compatibility with modern GIS and reporting tools, complicating data integration.
- **Metadata and Documentation:** Utilities often find it challenging to meet rigorous metadata requirements, leading to delays and data interpretation issues.

Technical Capacity & Maturity

- **Resource Constraints:** Implementing comprehensive data collection and reporting processes can strain financial and human resources, particularly for smaller utilities.
- **Implementation Maturity:** Utilities at different stages of data maturity may struggle to comply fully within set timelines.

Confidentiality and Security

- **Data Sensitivity:** Utilities must balance transparency with the need to protect sensitive infrastructure and operational data
- **Legal Opinion:** Legal may or not agree with what is deemed confidential and what is not, requiring additional justification and time.

Data Collection & Environmental

- **Data Capturing Risks:** Capturing real-time data during wildfire events (e.g., PSPS impact data, ignition points) requires advanced monitoring infrastructure and processes.
- **Remote and Hazardous Areas:** Collecting accurate data in remote or wildfire-prone regions poses logistical and safety challenges.

Lessons Learned

- Start small then scale.
- Early and sustained collaboration between program SMEs and data SMEs
 - *Early involvement ensures alignment between program needs and data architecture.*
 - *Program SMEs bring deep understanding of operational and regulatory requirements, while data SMEs contribute technical skills in schema design, governance, and analytics.*
 - *Collection methodologies are optimized for accuracy and usability.*
 - *Quick iterations to accommodate changes without compromising data quality.*
 - *Maintains relevance and utility of data.*
- Regular workshops and training programs to bridge knowledge gaps between Program and Data teams.
- Shared accountability.

Key Outcomes of Wildfire Safety

- Reduced Wildfire Ignition Risk
 - *Mitigation of infrastructure and vegetation related risks through data-driven proactive measures*
- Improved Preparedness
 - *Utilities can better prepare for and respond to wildfire risks with detailed, actionable data*
- Minimized Damage and Loss
 - *Early interventions and effective mitigation reduce wildfire impacts*
- Enhanced Public Safety
 - *PSPS strategies and infrastructure hardening improve the safety of areas prone to wildfires*

Case Study: PG&E

- **Partnership and Collaboration**

- *Proven invaluable for empowering utilities and driving innovation.*
- *Enabled utilities to build scalable and robust systems.*
- *Created an environment to align data collection process.*

- **Improved Internal Data Policies**

- *Comprehensive updates to internal data policies driven by Energy Safety requirements.*
- *Emphasis on internal data consistencies and alignment across organization.*

- **Enhanced Data Collection Processes**

- *Implementation of nimble and scalable architecture to support real-time data collection.*
- *Integration of diverse data sources (meteorology data, IOT, grid-connected backup systems, PSPS events data, etc.).*

- **Advanced Data Integration Infrastructure and Capabilities**

- *Centralized data infrastructure (Palantir Foundry).*
- *Successful integration of SAP and GIS data for unified insights.*
- *Risk modeling initiatives for enhanced decision-making.*



Questions?