Pacific Gas and Electric Company

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VIA OFFICE OF ENERGY INFRASTRUCTURE SAFETY E-FILING SYSTEM

Stephen P. Lai
Data Manager, Data Analytics Division
Office of Energy Infrastructure Safety
California Natural Resources Agency
715 P Street, 20th Floor
Sacramento, CA 95814

Re: PG&E Response to OEIS Geographic Information Systems Data Standard, Version 2.2

Dear Mr. Lai:

Pacific Gas and Electric Company (PG&E) appreciates the revisions made by the Office of Energy Infrastructure Safety (Energy Safety) to its Geographic Information Systems Data Standard (GIS Data Standard) and the opportunity to provide comments. PG&E offers the following feedback regarding the Version 2.2 release of the GIS Data Standard.

1. Technical Workgroups for Collaboration and Consistent Implementation

PG&E appreciates that Energy Safety held a GIS Data Discussion with the utilities on October 21, 2021 and is planning to schedule quarterly working sessions. These working sessions will provide an opportunity to shape modifications and drive consistent implementation of the GIS Data Standard.

PG&E continues to achieve improvements in data quantity and/or quality on a quarterly basis since the implementation of the GIS Data Standard in Q3 2020. Additional enhancement opportunities will largely require more involved operational and technological changes, and a significant investment of resources and time to collect, curate, and organize the Data Standard submissions on a recurring basis. Given the estimated level of effort required to meet the standard, regular collaboration with Energy Safety is needed to align on expectations, prioritization of data and information, technical feasibility issues, and shape modifications to the schema.

PG&E suggests that future investor-owned utility and Energy Safety technical workshops be focused on each of the six feature datasets, with the exception of Feature Dataset 3.5 (Initiatives) for which workshops should be segmented according to work types performed including: Asset Inspections, Grid Hardening, and Vegetation Management. In addition, a workshop to review confidentiality designations would allow more consistent application across utility submissions while considering the complexities introduced through the interconnected aspect of feature class data and geospatial representation as described in item 7 of this Comment.

PG&E requests these sessions be held two to three weeks after the submission deadlines to allow time for preparation and help ensure productive discussions. Leading up to the submission deadline, PG&E teams are in process of collecting, transforming, performing quality assurance, and preparing submission information including our status report, metadata, and cover letter.

2. Additional Time to Assess the Changes to Each Version of the Data Standard

PG&E appreciates Energy Safety's extension of the comment period from five to 10 calendar days. However, the V2.2 Comment period (spanning from December 17th to December 27th) included two weekends as well as a federal/state holiday, resulting in a comment period of only five business days. PG&E reiterates the request made in our comments on V2.1 that Energy Safety extend its comment period to 10 or more business days to help ensure key resources have an opportunity to review, assess, and perform change impact analysis needed to help ensure meaningful feedback can be provided.

3. Simultaneous Release of the PDF, GDB File, and Excel Status Report Template

PG&E reiterates our request that the PDF, Excel, and FGDB files be released simultaneously to assist with the analysis of the proposed changes to the GIS Data Standard and the impacts to existing processes or data collection/curation techniques.[1] The impacts of Energy Safety's schema changes cannot be determined by viewing the PDF alone; full analysis requires release of supporting files. Simultaneously releasing the documents allows review of impacts to domain values and fields. Each version release has been subject to discrepancies between documents, challenging data development and automation processes for reporting.[2] Historically, PG&E's resources have spent hundreds of hours socializing, assessing, and implementing version changes across various teams and technology platforms to update the transformation logic needed only to discover that the PDF does not always follow the same schema as the GDB which results in rework.

4. 3.5 Phased Approach for Initiative Geometry

Energy Safety's updated geometry guidance in the 3.5.1 Vegetation Inspections and 3.5.2 Vegetation Management Project overview sections removes geometry reporting flexibilities. Energy Safety asserts, "…if an electrical corporation records vegetation management data in one format but not another (e.g., points but not polygons), it does not have to convert existing data to another geometry, unless specifically requested to do so by Energy Safety." This provides the electrical corporations the ability to present data in a manner conducive to their source systems.

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[1] *See* PG&E Comments on GIS Data Standard V2.1 at p. 3 (Aug. 31, 2021). <https://efiling.energysafety.ca.gov/Lists/DocketLog.aspx?docketnumber=2021-GIS-DRS>

[2] An example of misalignment across guidance documents can be found in: 3.4.2 Wire Down Event (Feature Class): PDF document requests "WireDownID" (Unique ID for the wire down event. Primary key for the Wire Down Event feature class attribute table), whereas the Filegeodatabase input for "WireDownID" only allows domain value of "UtilityID" (PG&E).

[2] An example of misalignment across guidance documents can be found in: PDF document, Feature Class 3.3.6.2 (PSPS Event Damage Point) contains fields for FuelBed and FuelBedDescription – which are not included in the FGDB. A second example of misalignment across guidance documents can be found in: Feature Class 3.3.6.2 (PSPS Event Damage Point): FGDB contains a field for "AssetID" (a net new field in V2.1) which is not present in the PDF document.

However, in a newly inserted paragraph found further down on the same page, Energy Safety asserts: "…units for targets and progress must match the geometry of the feature. In particular, for vegetation inspections, this means that, if the utility's targets are in line miles, the utility must submit a line feature representing the line miles it has inspected in the reporting quarter." PG&E requests clarification on whether these requirements apply solely to Vegetation Initiative data. PG&E urges that a phased approach be applied to this requirement in recognition that select data are stored in other geometries/architectures when compared to initiative target tracking.[3] We propose this topic be discussed at the upcoming technical workshops to assess use of this data, feasibility, and technical limitations on a Feature Class basis where applicable.

5. Challenges of Aligning GIS Data Standard Submission with the Quarterly Initiative Update (QIU) Tabular Reporting

PG&E is challenged in aligning GIS Data Standard with tabular reporting such as the Quarterly Initiative Update (QIU) due to the following: (i) differentials in technical and schematic requirements; (ii) differentials in timing of data readiness; and (iii) differentials in data types reported on. PG&E reiterates its statement on the technical challenges involved with fully aligning the spatial Quarterly Data Report (QDR) with the QIU report, as outlined in PG&E's response to data request *OEIS to PGE- Quarterly Data Submission-20211026*:

> [D]ata included in the GIS Data Standard submission must meet specific technical criteria for inclusion — including, but not limited to, the ability to transform data from PG&E's internal data architecture into the FGDB required data architecture and display these data in a spatial format…. Tabular reports such as the QIU are not subject to such data schema/architectural technical requirements and thus allow more initiative types to be reported.[4]

Since the QIU updates provide written progress on how the WMP initiatives are progressing, the supporting evidence relied on does not require geometry. For example, data supporting QIU reporting can be in the form of vendor invoices, contractor progress reports, and field crew trackers. Though these data types can be integrated into tabular reporting, they do not meet requirements for transformation into the GIS Data Standard schema.

Additionally, timing differences exist between collection of initiative data and the population of said data into a geospatial format/database (GIS) due to the processes needed to document data, verify work performance, and update geospatial records. Tabular reporting on miles completed or otherwise can be readily collected through field updates and/or work tracking tools, leading to differentials in timing for which data can be used for the QIU versus GIS Data

[3] In some cases, initiative work is recorded against the associated support structure(s) and are thus presented as point data. Conversion from point to line geometry is not practical in the near term given current architecture and technologies. Current processes require manual tracing and approximations of records to transform geometries that may contribute to data quality issues and are not practicable. PG&E would appreciate further discussion on this topic with Energy Safety to align on benefits of transformations for prioritized datasets.

[4] *See* Energy Safety data request entitled "OEIS to PGE- Quarterly Data Submission-20211026" (Oct. 26, 2021).

Standard submissions. PG&E needs final datasets to be available two to three weeks ahead of the actual GIS Data Standard submission deadlines to consolidate and transform data into the prescribed Filegeodatabase (FGDB) format, further contributing to differentials in timelines when compared to tabular reporting.

Version 1 of the GIS Data Standard provided utilities a list of initiative types (domain values) to report on in the InitiativeActivity field.[5] PG&E adopted these initiative types where possible and has continued to populate this field accordingly. For maintenance-based programs, such as the Capacitor Maintenance and Replacement program, device replacements are performed as needed based on inspection findings. Quantitative targets for this initiative type do not exist as replacement needs are dependent on inspection findings. As such, required fields such as InitiativeTarget are not populated. Alternatively, PG&E's WMP capacitor initiative is centered around capacitor inspections (which inform subsequent replacements), representing a separate work process when compared to the device replacement data highlighted in the GIS Data Standard.

Similarly, PG&E's Vegetation Initiative data includes routine and pole clearing work. This data was originally requested in part to satisfy Guidance Item 10 requirements (i.e., locations where grid hardening, vegetation management, and asset inspections were completed over the prior reporting period). There are no WMP numerical commitments to report against initiative target, quarterly progress, and cumulative progress for this work in the QIU.

PG&E will re-evaluate which initiatives should be prioritized and included in the GIS Data Standard submission starting in Q1 2022. Prioritization processes will consider whether data have quantitative, numerical initiatives captured in the QIU and contain latitude/longitude coordinates for geospatial display. This will allow for better alignment on Initiative Target, Quarterly Progress, Cumulative Progress, and Target Units fields between the QIU and GIS Data Standard submissions.

6. Typographical Errors

PG&E identified several inadvertent typographical errors in Version 2.1 that are still present in Version 2.2. Specifically: (1) data schema "3.1.1 Camera (Feature Class)" is missing from the table of contents; and (2) data schema "3.1.3 Customer Meter (Feature Class)" is listed as "2.1.3 Customer Meter (Feature Class)" in the table of contents.

Moreover, upon reviewing version 2.2, PG&E would like to suggest several additional typographical errors that should be corrected, including: (3) data schema "3.4.3 Ignitions (Feature Dataset)" is missing from the 3.4.1 Overview and Entity-Relationship Diagram for Wire Down; (4) all embedded hyperlinks appear to be missing; and (5) some fields contain partially struck out information making it unclear if the field is intended as an addition, deletion, or mistake. For example, the 'ChangeOrder' field name appears deleted in the 3.5.3.2 Asset Inspection Log, yet the definition, characteristic type, and subsequently related fields are still present. Similarly, there is a new field inserted in the 3.5.4.4 Grid Hardening Line feature class called 'AssetOHUG', however, its description is crossed out, so it is not clear if this field should be included or if it was inadvertently captured.

[5] Possible values were predetermined since the InitiativeActivity field was structured as a domain. *See* WSD GIS Data Reporting Standards_DRAFT_20200805.PDF

7. Confidentiality Requirements in Section 2.3.9

PG&E continues to have reservations around the feasibility and practicability of providing confidential information for each record submitted. In the latest Q3 2021 submission, approximately 16.5 million records were submitted. Reviewing each of these records individually would not be feasible or practicable. Furthermore, the interconnected aspect of feature class data and geospatial representation of the data create complexities in identifying the confidentiality of individual records and introduces additional risk for error.

Therefore, PG&E will continue take the approach by applying an attribute level confidentiality designation for each feature class in the FGDB. If any attribute in each requested feature class is deemed to contain what is or could be "partially"[6] confidential information, PG&E will continue to apply the "yes" confidentiality designation to each record to mitigate against the risk of mislabeling individual records.

In the revised 2.3.8 Confidentiality section, Energy Safety states that in addition to labeling attributes in the schemas as confidential, "Utilities also have the option of indicating if an entire feature class or table is considered confidential in the Excel Status Workbook". PG&E plans to leverage this directive in the revised guidelines by providing further explanations regarding the reasons for confidentiality being applied to the entire feature class through the status report.

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PG&E appreciates the opportunity to provide feedback on the GIS Data Standard and to continue to work with Energy Safety to promote wildfire safety.

Sincerely,

/s/ Ali Moazed

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[6] PG&E considers transmission line data partially confidential. This confidentiality determination is dependent on whether the line is at or above 115kv in which case information is identified as confidential and protected. At that point it is considered physical facility, cyber-security sensitive, or critical energy infrastructure data and is protected from disclosure. *See* 18 C.F.R. § 388.113, see also Govt. Code § 6254(k), (ab); 6 U.S.C. § 131; 6 CFR § 29.2.