**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

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| Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California. | Investigation 17-06-027 |
| And Related Matter. | Rulemaking 17-06-028 |

# PETITION FOR MODIFICATION OF DECISION 21-10-019 BY THE MAJOR POLE OWNERS AND THE JOINT POLE ATTACHERS

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## TABLE OF CONTENTS

## TABLE OF AUTHORITIES

**Cases**



**California Public Utilities Code**



**California Public Utilities Commission Decisions**



**California Public Utilities Commission General Orders**

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

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# PETITION FOR MODIFICATION OF DECISION 21-10-019 BY THE MAJOR POLE OWNERS AND THE JOINT POLE ATTACHERS

Pursuant to Rule 16.4 of the Rules of Practice and Procedure (the "Rules") of the California Public Utilities Commission ("Commission"), Pacific Gas & Electric Company (U-39-E) ("PG&E"), Southern California Edison (U-338-E) ("SCE"), San Diego Gas & Electric (U-902-E) ("SDG&E"), Frontier[1] and AT&T[2] (collectively, the "Major Pole Owners"), as well as AT&T, AT&T Wireless[3], Comcast[4], Cox[5], Crown Castle Fiber LLC (U-6190-C), T-Mobile West LLC d/b/a T-Mobile (U-3056-C), Sonic Telecom, LLC (U-7002-C), and Verizon[6] (collectively, "the Joint Pole Attachers") (the Major Pole Owners & the Joint Pole Attachers collectively referred to as "Petitioners") respectfully submit this timely Petition for Modification ("Petition")

[1] As used herein, "Frontier" refers to the following companies, each of which is an Incumbent Local Exchange Carrier ("ILEC") in California: Frontier California Inc. (U-1002-C); Frontier Communications of the Southwest Inc. (U-1026-C); Citizens Telecommunications Company of California Inc. (U-1024-C). Frontier notes that the Track 2 Decision incorrectly uses the term "Frontier Communications," and a minor edit has been proposed in Ordering Paragraphs ("OP") 2 and 3, per this Petition, to correctly refer to "Frontier."

[2] AT&T refers to Pacific Bell Telephone Company dba AT&T California (U-1001-C).

[3] AT&T Wireless refers to AT&T Mobility Wireless Operations Holdings, Inc. (U-3021-C) and New Cingular Wireless PCS, LLC (U-3060-C) dba AT&T Mobility. As noted above, AT&T is both a pole attacher and a pole owner in the context of this proceeding.

[4] Comcast refers to Comcast Phone of California, LLC (U-5698-C) on behalf of itself and its affiliates that attach to utility poles in California.

[5] Cox refers to Cox California Telcom, LLC (U-5684-C) on behalf of itself and its affiliate that utilizes utility poles in California.

[6] Verizon refers to Cellco Partnership (U-3001-C) dba Verizon Wireless, MCImetro Access Transmission Services LLC (U-5253-C), and MCI Communications Services LLC (U-5378-C).

of Decision ("D.") 21-10-019, *Track 2 Decision Adding Attachment Data to Pole Owner Databases Ordered in D.20-07-004* (the "Track 2 Decision").

## I. INTRODUCTION

At its core, the Petition proposes to modify the Track 2 Decision in a way that will enhance the feasibility of the Phase 2 implementation, potentially increase the utility of the databases, and dramatically decrease the costs of Phase 2 for pole owners, attachers and consumers. Specifically, Petitioners propose that attachers and pole owners provide (i) Data Points 8 and 11 for all existing and future attachments, and (ii) for all existing pole attachments that were subject to the pole loading retention requirements specified in General Order ("GO") 95 Rule 44[7] *and* for all future pole attachments, either (a) the information required for Phase 2 Data Points 6-7, 9, 10, and 12-17 as individual data points; *or* (b) the pole loading calculation ("PLC") performed for those attachments (hereinafter referred to as the "Phase 2 PLC Option"). To be clear, the Phase 2 PLC Option would not impact the prior submission of data from Track 1 or Track 2, Phase 1 or the obligation to provide Data Points 8 and 11 for all attachments.

This modification has the potential to make the Major Pole Owner databases more comprehensive.[8] For example, PLCs generally include significantly more information on the new attachments, data on all the pre-existing attachments, and information regarding the remaining strength of the pole. The Phase 2 PLC Option will also make the implementation of Phase 2 far more feasible and efficient and thus will be less costly for attachers as well as pole owners and their respective customer bases. Indeed, the investor-owned utilities ("IOU") alone estimate that

[7] *See infra* note 67.

[8] The Petitioners acknowledge that the Phase 2 PLC Option does not require Phase 2 data submissions for attachments installed before the GO 95 document retention period. However, as explained below, there are other benefits to using PLCs, including the fact that each PLC for a new attachment necessarily includes information regarding all the other attachments on the pole and some owners and attachers have a substantial number of PLCs that can be used to populate the databases. *See infra* Section V.A.

the current Phase 2 data submission will cost more than $650 million if left as is,[9] and that the Phase 2 PLC Option would substantially reduce those costs.[10] In this regard, adopting the Phase 2 PLC Option would also be consistent with Governor Newsom's October 30, 2024 Executive Order N-5-24 (the "Executive Order") directing the Commission, in part, to examine regulations like this one that may unduly increase electric ratepayers' bills and underperforming programs where the costs exceed the benefits.

As discussed more thoroughly below,[11] the Petition is timely filed under Rule 16.4(d) because it could not have been filed within one year of the Track 2 Decision (*i.e.*, by October 2022) for several reasons, including the fact that the Phase 2 Workshops ordered by the Track 2 Decision did not occur until May 2024. Additionally, the Petition is consistent with Rule 16.4(b) because it alleges new and changed facts and conditions. In addition to the Phase 2 Workshops, several other new developments have occurred since the adoption of the Track 2 Decision that support the grant of the Petition, including the Executive Order and the Commission's issuance of its one-touch make-ready decision, D.22-10-025, which was implemented in 2023, and in part, permits rearrangement of certain existing attachments on poles by new attachers.

Finally, the Petition also proposes to clarify the IOU reimbursement process and to adjust the compliance dates to tie them to a Commission decision on the Petition. The clarification to the IOU funding mechanism will enable the electric utilities—SDG&E, PG&E and SCE—to secure sufficient funding to implement the Track 2 Decision requirements without defunding other operation and maintenance programs and activities necessary for the safe and reliable

[9] *See* Exhibit 3 (PG&E Declaration) at ¶¶ 4, 5; Exhibit 2 (SCE Declaration) at ¶¶ 4; Exhibit 1 (SDG&E Declaration) at ¶¶ 8.
[10] *See* Exhibit 2 (SCE Declaration) at ¶ 5; Exhibit 1 (SDG&E Declaration) at ¶ 9. For example, SDG&E estimates that its cost of compliance with Track 2, Phase 2 would be reduced from approximately $15 million to $50,000 if the Phase 2 PLC option were adopted. Exhibit 1 (SDG&E Declaration) at ¶¶ 8, 9.
[11] *See infra* Section III.

operation of the electric system. The adjustment to the current September 9, 2025 compliance date for Phase 2 is intended to afford attachers and pole owners an adequate amount of time to comply with the modified Phase 2 requirements.

## II. PROCEEDING BACKGROUND

On June 29, 2017, the Commission issued an Order Instituting Investigation 17-06-027 and Rulemaking 17-06-028 ("the OIR").[12] The Commission divided the OIR into two tracks.[13] On July 21, 2020, the Commission issued D.20-07-004 (the "Track 1 Decision"), which set forth ten (10) *pole-specific* data points to be retained in the five databases.[14] These include, for example, pole ownership, location details, pole class, and pole conditions.[15]

On October 21, 2021, the Commission adopted the Track 2 Decision, which required entities with attachments on any of the Major Pole Owners' utility poles to provide twenty (20) *attachment-specific* data points to the Major Pole Owners for inclusion in their respective databases.[16] Major Pole Owners were also required to include those same data points about their own attachments in their respective databases.[17] The Track 2 Decision divided implementation into two phases: Data Points 1–5 and 18–20 (Attachment Identification and Attributes) were to be provided in Phase 1,[18] and Data Points 6–17 (Attachment Specification and Loading) are—

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[12] *Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles & Conduit and Order Instituting Rulemaking into Access by Competitive Communications Providers to California Utility Poles and Conduit, Consistent with the Commission's Safety Regulations* (June 29, 2017).
[13] *Administrative Law Judge's Ruling Approving Recommendations/Next Steps from SCE Workshop Report for Workshops Held on Nov. 15, 2018 and Jan. 22–23, 2019* (June 4, 2019).
[14] Track 1 Decision at 34–36 (OP 2).
[15] *Id.* at 35–36 (OP 2).
[16] Track 2 Decision at 125 (OPs 1–5); Track 2 Decision, Attachment A.
[17] *Id.*
[18] Based on the approval dates of the Major Pole Owners' Phase 1 Advice Letters (*see infra* note 28), and the subsequent six-month extensions granted to the pole attachers (*see infra* note 29), the Phase 1 Data was to be submitted to the Major Pole Owners by the spring of 2024. In particular, the Data was to be submitted to AT&T, Frontier, SDG&E and SCE in April 2024, and to PG&E in February 2024.

based on the filing date of the Phase 2 Workshop Report—currently scheduled to be provided in Phase 2 by September 9, 2025.[19]

## III. THIS PETITION REGARDING THE PHASE 2 IMPLEMENTATION PROCESS IS TIMELY

The Commission's Rules require petitions for modification to be filed within one year of the effective date of the decision proposed to be modified or, if more than one year has elapsed, as is the case here, "explain why the petition could not have been presented within one year of the effective date of the decision."[20] In this instance, filing this Petition within one year of the effective date for D.21-10-019—or by October 26, 2022—with respect to the implementation of Track 2, Phase 2 was not feasible. In addition to several other new developments discussed in Section IV, the following new or changed facts did not occur until more than one year after the effective date of the Track 2 Decision:

- In October 2022, Phase 2 implementation had not begun, per the schedule set forth in the Track 2 Decision. At that time, the Commission staff had just approved the pole owners' (revised) Advice Letters regarding *the Phase 1 Workplans,* and the submission of the *Phase 1 Data Points* was still over a year away.[21]

- Substantive consideration of the Phase 2 Data Points and implementation protocols—which was to be predicated on, among other things, the lessons learned from the Phase 1 implementation—could not and did not begin until the Phase 2 Workshops, which were conducted in May 2024 per the procedural schedule dictated by the Track 2 Decision.[22]

- During the Phase 2 Workshops, a host of significant issues became clear, including the fact that—contrary to the express assumption in the Track 2 Decision—neither pole owners nor attachers generally collected, maintained, or

[19] The Phase 2 Workshops did not take place until the end of May 2024 and the Workshop Report was filed on September 9, 2024; Phase 2 Data is to be submitted one year after the filing of the Workshop Report. *See infra* Section III.B.
[20] *See* Commission Rules 16.4(d).
[21] As discussed above, the submittal of the Phase 1 Data did not take place until February/April 2024—almost 1.5 years later—and the pole owners were not required to make that data available until the spring of 2025.
[22] Track 2 Decision at 126–27.

had ready (if any) access to the Phase 2 Data Points as discrete, extractable data points.[23]

- Since the Phase 2 Workshops, pole owners and attachers have been working diligently to develop a reasonable alternative format for implementing the Phase 2 Data Point requirements that would be consistent with the goals of creating the databases and otherwise be achievable through a Staff resolution per the Track 2 Decision.[24]

- In conversations with Commission staff towards the end of 2024, it became clear that the resolution process was not a viable path and that a Petition would be required to make the adjustments to the Phase 2 implementation that Petitioners seek.

The infeasibility of submitting a Petition as to implementation of the Phase 2 Data Points by October 2022 (*i.e.*, within one year of the effective date of the Track 2 Decision) is discussed in greater detail below.

### A. Phase 2 Data Point Implementation Concerns Were Not Ripe in October 2022

As the Commission is aware, the creation of the databases is a complicated and unprecedented effort to gather information on the electric and communications facilities located on approximately 4.5 million poles across multiple pole owners. Moreover, Phase 2 of this proceeding, which led to the adoption of the Track 2 Decision, took place during the heart of the COVID-19 pandemic and, understandably at the time, did not involve the type of workshops normally associated with these types of highly technical matters related to joint pole facilities. Accordingly, the implementation schedule for the massive and complex endeavor to be

[23] *Workshop Report for Phase 2 Workshops Submitted by SCE* at 7, 10, 22 (Sept. 9, 2024) ("Phase 2 Workshop Report").

[24] *See* Track 2 Decision at 41 ("[T]he Commission will give its staff the authority to modify the attachment requirements by resolution provided that good cause can be demonstrated."); *id.* at 124 (Conclusion of Law ("COL") 23) ("It is reasonable to conclude that Commission staff may modify the data attachment requirements adopted by this decision by a resolution."); *id.* at 133 (OP 32) ("The Commission authorizes its staff in the Communications Division and Safety Enforcement Division to modify, by resolution, the pole attachment database information set forth in Attachment A as needed to ensure the information required is up to date.").

undertaken per the Track 2 Decision was—out of necessity—designed to be iterative and to extend over a protracted period of time. The Track 2 workshops were intended to address these complicated and novel implementation issues. Thus, *even under the initial schedule envisioned by the Track 2 Decision*, consideration of the implementation processes and challenges associated with Phase 2 Data Points were not contemplated until the end of 2023, well after the one-year time frame set forth in Rule 16.4(d).

As an initial matter, the Phase 1 implementation was initially designed to last at least until May 2023. Specifically, the Track 2 Decision first directed that the pole owners and attachers participate in a Phase 1 workshop within 90 days of the effective date (*i.e.*, by the end of January 2022) to, among other things, clarify and standardize protocols for submission of the Phase 1 Data Points.[25] Within another 60 days, a Phase 1 workshop report was to be filed and the pole owners were to submit Advice Letters setting forth those protocols as part of a Phase 1 Workplan.[26] All of this was scheduled to take place by the end of March 2022 with staff approval of the Advice Letters by May 2022.[27] The Phase 1 Data Points were then to be submitted within a year (*i.e.*, May 2023) and a Phase 2 Workshop—*in which the lessons learned from Phase 1 were to be incorporated into the Phase 2 plan*—was to be scheduled within 90 days of the

[25] *See* Track 2 Decision at 126 (OP 6) ("Within 90 days from the issuance of this decision, the five major pole owners … shall … hold a joint workshop or workshops to discuss and provide clarification to the attachers regarding the manner in which they must provide their attachment information, and any topics related thereto…. Pole owners shall standardize, within reason, the data submission requirements across each major pole owner's database.").

[26] *See* Track 2 Decision at 114 ("[T]he major pole owners will have 60 days to file both a workshop report and their Tier 2 Advice Letters."); *see also id.* at 126 (OP 6) ("After the conclusion of the 90 days from the issuance of this decision, the five major pole owners shall jointly file a workshop report on the proceeding service list and submit their individual Tier 2 Advice Letters within 60 days."). The workshop report affirms that the focus of these workshops was on the Phase 1 Data Points in particular. *See Workshop Report for Jan. 13–14 & 19–20, 2022 Workshops Submitted by Southern California Edison Company (U 338 E)* at 11-13 (Cal. P.U.C. Mar. 25, 2022) ("March 2022 Phase 1 Workshop Report") (describing the detailed discussion of the Phase 1 Data Points).

[27] *See* Track 2 Decision at 126 (OP 6) ("Commission staff shall have 60 days from receipt [of the pole owner advice letters] to approve each Tier 2 Advice Letter.").

submission of the Phase 1 Data Points (*i.e.*, by August 2023).[28] In short, there was no feasible way to address the Phase 2 implementation issues within a year of the Track 2 Decision's effective date under the initial schedule adopted by the Commission, as the focus for the initial two years following the Track 2 Decision's issuance was on the Phase 1 Data Points.

The implementation of Phase 1, however, proved to be even more challenging than anticipated by the initial schedule in the Track 2 Decision. For example, the protocols agreed to by the owners and attachers during the Phase 1 Workshops—and incorporated in almost all of the Major Pole Owners' Advice Letters as part of their respective Phase 1 Workplans—were rejected by the Staff.[29] Thus, all but one of the Major Pole Owners were required to resubmit their Advice Letters, and Commission staff did not approve all Advice Letters until October 2022—not by May 2022 as originally envisioned.[30] In addition, almost all of the attachers were provided with six-month extensions of time (*i.e.*, until February–April 2024) to submit the Phase 1 Data Points, which meant the Phase 2 Workshops were not and could not be scheduled until May 2024—again, well after the one-year anniversary of the Track 2 Decision's effective date in October 2022. Thus, there was no foundation on which to base a Petition seeking modification of the Phase 2 Data Points within a year of the Track 2 Decision's effective date.

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[28] *See* Track 2 Decision at 126–27 (OP 7) ("Within 90 days from the date the attachers provide the attachment information for Phase 1 Data Points 1–5 and 18–20, the five major pole owners … shall notice on the proceeding service list and hold a Phase 2 joint workshop or workshops *to discuss lessons learned from Phase 1* and provide clarification to the attachers regarding the manner in which they must provide their attachment information for Phase 2 Data Points 6–17, and any topics related thereto.") (emphasis added).

[29] Rejected Advice Letters: Frontier California Inc. Advice Letter No. 12877, Frontier Communications of the Southwest Inc. Advice Letter No. 168, Citizens Telecommunications Company of California, Inc. Advice Letter No. 1302; SDG&E Advice Letter No. 3978E, SCE Advice Letter No. 4754E, and AT&T Advice Letter No. 49079.

[30] PG&E's Phase 1 Advice Letter (which was not initially rejected by the staff) was approved on August 29, 2022; the other Major Pole Owners' Advice Letters were approved in October 2022 (Frontier on October 7, 2022; AT&T on October 9, 2022; SCE and SDG&E on October 12, 2022).

### B. The Phase 2 Data Point Implementation Was Not Substantively Addressed Until May 2024

As a result of the delayed approval of the Major Pole Owners' Phase 1 Advice Letters and the related Phase 1 Data Points submissions, the issues and concerns with the Phase 2 implementation were only first substantively addressed at the end of May 2024 when the Phase 2 Workshops took place—again, well after the October 2022 one-year anniversary of the Track 2 Decision effective date.

The Phase 2 Workshops provided the pole owners and attachers—as well as other stakeholders including the Commission's Safety and Enforcement Division ("SED") and Communications Division ("CD")—with the first meaningful opportunity to explore and evaluate the lessons learned from the Phase 1 implementation and to "discuss any further refinements that may be needed for implementing the Phase 2 Data Points."[31] Pursuant to the implementation schedule contemplated by the Track 2 Decision, the Phase 2 Workshops did not occur earlier because pole owners and attachers were explicitly directed to focus on Phase 1 and to then incorporate any lessons learned from Phase 1 into the Phase 2 process.

Consistent with those directions from the Track 2 Decision, and as discussed in more detail in Section IV.A. below, a consensus was reached among all the Major Pole Owners and attachers that the Phase 2 Data Points could be—and should be—streamlined significantly, and that this could be done without impacting the Commission's goals in establishing the databases in any way. Indeed, neither SED nor CD (nor any other party) raised concerns with that consensus. However, as both a practical matter and as contemplated by the Track 2 Decision's

[31] The Phase 1 Workshops were almost entirely focused on Phase 1 data requirements, including, in particular, the definition of "attachment." The limited discussion of Phase 2 during that initial workshop (i) affirmed that Phase 1 and Phase 2 would be addressed separately and (ii) raised the possibility of creating working groups in advance of the Phase 2 Workshops to develop proposals for those later workshops. *See* March 2022 Phase 1 Workshop Report at 7, 13.

schedule, this fulsome and exhaustive analysis of the Phase 2 Data Points could not have taken place prior to the Phase 2 Workshops and in any event, could not have occurred within a year of the Track 2 Decision's effective date. Consequently, a Petition based on such fulsome and exhaustive analysis could not have been filed within a year of the Track 2 Decision's effective date.

### C. Post-Phase 2 Workshop Outreach to Staff

Since the conclusion of the Phase 2 Workshops at the end of May 2024 and the preparation and submission of the Phase 2 Workshop Report in September 2024, pole owners and attachers have been working diligently to explore a reasonable and realistic alternative compliance option for the Phase 2 Data that would maintain the underlying integrity of the Track 2 Decision.[32] To that end, and in light of the Commission Staff's express authority under the Track 2 Decision to "modify the data attachment requirements adopted by this decision by a resolution,"[33] pole owners and attachers met several times to explore possible compliance alternatives with representatives from CD and SED as well as other Commission Staff. However, ultimately it became apparent that a Petition, rather than a resolution, would be required to accomplish the modifications proposed by pole owners and attachers. In any event, the Petition could not have been submitted within a year of the Decision's effective date and is appropriately submitted for the Commission's consideration now.

[32] During the Workshops, alternative proposals were discussed with support in particular for maintaining all ten (10) Track 1 and all eight (8) Track 2, Phase 1 Data Points included in the databases to date and focusing the Track 2, Phase 2 Data Points on providing Data Point 8 (Attachment Description). No stakeholder—including representatives from CD and SED—expressed an objection to the proposal and SED expressed a willingness to meet with owners and attachers on how to best update and streamline the Phase 2 Data Points. *See* Phase 2 Workshop Report at Section VI.

[33] Track 2 Decision at 124, 133 (Conclusions of Law 23, OP 32).

## IV. PETITION STANDARD AND BASIS FOR MODIFICATION

Cal. Pub. Util. Code Section 1708 authorizes the Commission to "rescind, alter, or amend any order or decision made by it" after providing proper notice to the parties and an opportunity to be heard.[34] A petition for modification is a procedural vehicle through which the Commission can make such changes. The applicable standard for petitions for modification is in Rule 16.4(b), which requires, among other things, petitioners to "concisely state the justification for the requested relief."[35]

The Commission has found that it may modify a decision if "(1) new facts are brought to the attention of the Commission, (2) conditions have undergone a material change, or (3) the Commission proceeded on a basic misconception of law or fact."[36] The Commission will also consider "non-controversial modifications that provide necessary clarification"[37] or are otherwise reasonable[38] in a petition for modification. In evaluating whether to grant a petition for

[34] D.25-06-003 at 3–4; *City of Los Angeles v. Pub. Util. Comm'n*, 15 Cal. 3d 680, 706 (1975). (stating that Cal. Pub. Util. Code Section 1708 "permits the commission at any time to reopen proceedings even after a decision has become final").

[35] Rule 16.4(b) ("A petition for modification of a Commission decision must concisely state the justification for the requested relief and must propose specific wording to carry out all requested modifications to the decision. Any factual allegations must be supported with specific citations to the record in the proceeding or to matters that may be officially noticed. Allegations of new or changed facts must be supported by an appropriate declaration or affidavit.").

[36] D.97-04-049, 1997 Cal. PUC LEXIS 427, at *15 (Cal. P.U.C. Apr. 9, 1997); *see, e.g.*, D.20-02-011 at 5–8 (granting a petition for modification allowing electronic signatures after petitioner flagged issues with the Uniform Electronic Transactions Act, even though there were no new or changed facts).

[37] *See* D.11-10-034, 2011 Cal. PUC LEXIS 483, at *6 (Cal. P.U.C. Oct. 20, 2011).

[38] D.20-02-011 at 8 (". . . the petition for modification fails to present relevant new or changed facts that justify modifying D.18-09-044 as SEIA requests. We nevertheless find it reasonable to consider whether to authorize use of electronic signatures and approve certain requirements that are designed to reduce the risks associated with fraudulent behavior and other related misconduct in the industry.").

modification, the Commission has weighed the potential benefits of the request against the potential harm of it.[39]

In this instance, as described below, several new developments have occurred—and factual misconceptions have come to light—since the Phase 2 Decision was adopted that both support the Petition and confirm that the Phase 2 PLC Option is appropriate and reasonable and will otherwise be beneficial to the ratepayers, the Commission, attachers, owners and the public in general.

### A. Findings from the Phase 2 Workshop Report

As noted above, pursuant to the schedule established by the Track 2 Decision,[40] the Phase 2 Workshops took place over several days in late May of 2024 and the Phase 2 Workshop Report was filed in the record of this proceeding in September of 2024. The Phase 2 Workshop Report was developed collaboratively by all the Major Pole Owners and a number of the larger attachers.[41] It reflects input from approximately 70 Workshop participants, including Commission Staff.[42] There are several findings in the Phase 2 Workshop Report regarding the Phase 2 Data Points that are particularly relevant to and which support the Petitioners' instant request.

*First*, the Phase 2 Workshop Report concluded that none of the Phase 2 Data Points are currently available as discrete, easily extractable data points in any existing database,

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[39] D.15-06-002, 2015 Cal. PUC LEXIS 314, at *14 (Cal. P.U.C. June 11, 2015) ("In evaluating the reasonableness of the petition for modification, we weigh the potential benefit of allowing project developers that have faced unexpected delays an additional opportunity to complete their projects against the potential harm of crowding out waitlisted projects.").

[40] *See* Track 2 Decision at 126 (OP 7) (ordering notice of a joint Phase 2 workshop within 90 days from the date the attachers provide the Phase 1 data); *see also supra* Section IIIA., B..

[41] The workshop report drafters were the Five Major Pole Owners (SCE, PG&E, SDG&E, AT&T, and Frontier); attachers Verizon, Comcast Phone of California, LLC, T-Mobile West LLC, and Crown Castle Fiber LLC; and an industry association (California Video & Broadband Association).

[42] Phase 2 Workshop Report, Attachment 1: List of Workshop Participants.

spreadsheet, or other central repository—although the Phase 2 Workshop Report did conclude that Data Point 8 (Attachment Description) could be relatively easily obtained by attachers and that Data Point 11 (Grade of Construction) could be provided by owners.[43]

*Second*, the Phase 2 Workshop Report established that collecting the Phase 2 Data Points (other than Data Points 8 and 11 noted above), to the extent feasible, would be incredibly burdensome and time consuming and would likely involve numerous tasks such as site visits, manual data extraction (or the development of expensive IT solutions), preparation of new PLCs, and the like.[44]

*Third*, almost all of the Phase 2 Data Points seem to be drawn from—or related to—select inputs and/or outputs of PLCs.[45] Moreover, certain of the Phase 2 Data Points, including Data Point 15 (Wind Loading on the Attachment), Data Point 16 (Vertical Loading), and Data Point 17 (Bending Moment due to the Attachment) can be PLC outputs but they could not be "observed" during a field visit.[46]

*Fourth*, the Phase 2 Workshop Report confirmed that PLCs provide more comprehensive data than the individual Phase 2 Data Points.[47] Indeed, PLCs contain not only information about a particular attacher's facilities, but also information about all the attachments on a pole at the time the PLC is prepared. PLCs demonstrate how the new attachment combines with all pre-existing attachments on the pole to impact the overall load on the pole and thus its remaining

[43] Phase 2 Workshop Report, Attachment 10: Summary Chart of Track 2, Phase 2 Data Points; Phase 2 Workshop Report at 21.
[44] *See, e.g.*, Phase 2 Workshop Report at 3, 7–8, 14.
[45] Phase 2 Workshop Report at 9; *see also* Phase 2 Workshop Report, Attachment 10: Summary Chart of Track 2, Phase 2 Data Points (ten of the twelve Phase 2 Data Points are involved in a PLC, either as an input, output, background attribute, or interim calculation).
[46] Phase 2 Workshop Report, Attachment 5: Detailed Discussion of Track 2, Phase 2 Data Points at 14–18. It was also noted that some types of PLCs do not include each of these data points. Phase 2 Workshop Report, Attachment 10: Summary Chart of Track 2, Phase 2 Data Points.
[47] Phase 2 Workshop Report at 11.

strength. The PLC also provides more context regarding the interaction between the pole in question and downline, such as the loading direction, which is especially important at angles or dead-ends.

*Finally*, the Phase 2 Workshop Report concluded that including the 12 Phase 2 Data Points in the databases does not promote safety or competition for several reasons. The workshop participants made clear that they did not view that the databases could safely be used as a substitute for completing a new PLC when adding an attachment to a pole because only a PLC—which requires a site visit—provides enough comprehensive information to allow a party to determine whether a new attachment can be safely added to a pole (*e.g.*, the remaining strength of the pole).[48] For the same reasons, workshop participants stated they would not have their workers rely on the databases as a resource (and in fact it could be dangerous for them to do so).[49] Even Commission SED staff stated at the Phase 2 Workshops that they do not see the databases as a safety tool staff would use.[50]

Additionally, attachers, including new entrants, seeking to deploy broadband or facilities in the rights-of-way confirmed that they did not see any competitive advantage to the databases; noting that instead they would (as they do today) conduct field visits of poles they are considering attaching to and obtain information about those poles from the pole owners under GO 95 Rule 44.4 and Rule 31.4, which address cooperation between attachers and owners. In sum, the workshop participants determined that obtaining and populating the Phase 2 Data Points

[48] *Id.* at 9, 11. Even the Track 2 Decision acknowledges that attachers have to conduct field visits prior to adding new attachments. Track 2 Decision at 19 ("[T]he Commission is also mindful about an applicant's duty to conduct field surveys and their duty pursuant to GO 95 to perform proper loading calculations.").
[49] *Id.* at 11.
[50] *Id.* at 12.

would require significant resources without resulting in any useful outcomes for safety or competition.

Given these conclusions, the workshop participants explored alternative compliance options that would maintain the underlying intent of the Track 2 Decision.[51] There was a general consensus reached that the databases were already fairly robust with the Track 1 Data Points and Track 2, Phase 1 Data Points. Most participants supported limiting the number of Phase 2 Data Points to two data points that are ascertainable without the expenditure of unreasonable resources. Specifically, the Phase 2 Workshop Report explained that Data Point 8 (Attachment Description) promotes general awareness of what is on a pole, and Data Point 11 (Grade of Construction) is an attribute of the pole itself that is established at the discretion of the pole owners.[52] Additionally, workshop participants determined that follow-up meetings with Commission staff to discuss potential streamlining of the 12 Data Points were appropriate next steps, consistent with the authority granted to staff in the Track 2 Decision.[53]

### B. Consistency with Executive Order N-5-24

On October 30, 2024—two years after the adoption of the Track 2 Decision—Governor Newsom issued Executive Order N-5-24. The Executive Order emphasizes affordability, efficiency, and smarter regulatory oversight during California's clean energy transition and directs state agencies to evaluate and eliminate underperforming programs with the goal of reducing electric rates for Californians. It specifically directs the Commission to: "examine the

[51] *Id.* at 20–22.
[52] *Id*. at 5, 9.
[53] Track 2 Decision at 41; *see also id.* at 124 (COL 23) ("It is reasonable to conclude that Commission staff may modify the data attachment requirements adopted by this decision by a resolution."); and *id.* at 133 (OP 32): ("The Commission authorizes its staff in the Communications Division and Safety Enforcement Division to modify, by resolution, the pole attachment database information set forth in Attachment A as needed to ensure the information required is up to date.").

benefits and costs to electric ratepayers of programs it oversees and rules and orders it has promulgated pursuant to statutory mandates that may be unduly adding to electric rates… [and] take immediate action under existing authorities to modify or sunset any underperforming or underutilized programs or orders whose costs exceed the value and benefits to electric ratepayers."[54] As explained below, the Track 2 Decision's unfunded mandates will undoubtedly exacerbate the very rate pressures that the Executive Order aims to alleviate and thus they should be reevaluated and modified under the Executive Order's cost-effectiveness mandate.

As the Phase 2 Workshop Report found, the Track 2 Decision imposes significant administrative and technical burdens on all pole owners and attachers to collect, verify, and report highly granular data.[55] As discussed more thoroughly below, the three IOU pole owners alone estimate that the implementation costs for Phase 2 is more than $650 million.[56] Moreover, the extensive data requirements of the Track 2 Decision will likely not yield proportional safety or reliability (or competitive) benefits. No such benefits were identified in the Phase 2 Workshops and the Track 2 Decision lacks a clear mechanism for evaluating the effectiveness of data collection in improving either safety or access. In fact, the Track 2 Decision expressly finds that the data in the database cannot be relied on and directs that:

> [E]ach of the five major pole owners … include a disclaimer indicating that the data may not be completely accurate, that the information provided is the most recent information available, and that it is the responsibility of the information requestor to verify and validate the information in accordance with all existing safety requirements.[57]

[54] Executive Order at ¶¶ 2, 3.
[55] Phase 2 Workshop Report at 2–4, 8, 10, 14.
[56] *See* Exhibit 3 (PG&E Declaration) at ¶ 4; Exhibit 2 (SCE Declaration) at ¶ 4; Exhibit 1 (SDG&E Declaration) at ¶ 8.
[57] Track 2 Decision at 130.

Relatedly and critically, the Commission's SED staff specifically questioned the safety value of including data points in the databases during the workshop, noting that:

> [W]hile certain of the [Phase 2] Data Points may have an intrinsic, independent safety value in the context of GO 95 (e.g., height of the attachment in preparing a PLC or determining clearances), that is distinguishable from there being a safety value associated with their inclusion in a database. SED staff further stated that while it may be helpful to have some basic information in the Pole Owners' databases (e.g., location of poles, identification of attachments, identity of pole and attachment owners), it was not clear how or why many of the Phase 2 Data Points had been adopted or what their value would be residing in a database.[58]

Thus, the Track 2 Decision is the type of underperforming program where the costs exceed the benefits that should be slated for modification or sunset under the Executive Order. In addition, because the IOUs' costs of implementing the Track 2 Decision (*e.g.*, database upgrades, field audits, compliance staff) are likely to be passed on to ratepayers,[59] and those costs will be substantial, the pole database program is the type of "program . . . that may be unduly adding to electric rates" and thus should be "examined" under the Executive Order.

Included as Exhibits 1-3 are declarations from each of the electric utilities, SDG&E, PG&E, and SCE, describing the estimated costs to comply with the Decision—costs which, as is explained below, will likely be passed through to ratepayers. Specifically, the IOUs estimate that their combined cost of complying with the current Track 2, Phase 2 requirements is more than $650 million.[60] Because these costs are associated with data collection and reporting, unless coupled with some other use or program, they may be categorized as operations and maintenance

[58] Phase 2 Workshop Report at 12.
[59] Track 2 Decision at 64 ("For utilities subject to a general rate case, those costs shall be distributed as appropriate between electric utility rates for electric attachments (*e.g.,* cost of cataloging and making available in the pole database any attachment data), and pole attachment rates for costs incurred for communications attachments (*i.e.,* cost of managing data submissions from attachers, providing technical support staff, information technology equipment, etc.).").
[60] *See* Exhibit 3 (PG&E Declaration) at ¶ 4; Exhibit 2 (SCE Declaration) at ¶ 4; Exhibit 1 (SDG&E Declaration) at ¶ 8.

("O&M") expenses under utility accounting rules. O&M expenses are not capitalized (*i.e.*, not spread out over time like infrastructure investments) and instead would be immediately incurred. These costs are passed to ratepayers in the short term and there is no depreciation period, so ratepayers would feel the impact as soon as the utility incurs the expense and would likely increase the revenue requirement for the utility. This could result in an increase to customer bills if the costs could not be offset by savings or reductions elsewhere. And if reductions were necessary, funds could be allocated to compliance with the Track 2 Decision versus other programs like wildfire mitigation or grid modernization.

Moreover, while the costs to communications companies would not be subject to a rate case, those costs would likely be borne—at least indirectly—by customers. So, for customers with multiple services (*e.g.*, electric, wireless, and broadband), the impact could be higher and the cumulative burden likely would be significant for California residents and businesses.

While the Track 2 Decision was well-intentioned in its pursuit of infrastructure transparency and safety, implementation of this next phase is now at odds with the fiscal and policy priorities outlined in the Executive Order, and a reassessment is warranted to ensure regulatory coherence and to protect California ratepayers from unnecessary cost burdens—particularly when there is a substantially less expensive option. This Petition asks that the Track 2 Decision be reevaluated under the Executive Order's criteria to determine if its costs are justified by measurable benefits. The Petitioners' proposed modifications preserve the intent of the Track 2 Decision while establishing a compliance option that simplifies the data collection requirements to make them significantly less costly and consistent with those already mandated

by GO 95.[61] In fact, one IOU estimates that the adoption of the Phase 2 PLC Option would result in a ***300-fold*** cost savings.[62]

### C. Alignment with D.22-10-025 (One-Touch Make-Ready)

Another significant development that occurred more than a year after the issuance of the Track 2 Decision was the Commission's adoption of D.22-10-025, *Decision Adopting One-Touch Make-Ready Requirements* ("OTMR Decision"), which the Commission issued on October 27, 2022 and which was applicable by the first half of 2023.[63] The adoption of the OTMR Decision adds to the complexity, burden, and costs associated with populating and maintaining the Phase 2 Data Points.

In particular, the OTMR Decision permitted new attachers to physically relocate or rearrange the attachments of other existing attachers, subject to procedures set out in the ROW Rules.[64] Critically, the Track 2 Decision, which was issued prior to the OTMR Decision, did not contemplate that one attacher would be permitted to *physically relocate* another attacher's facilities or address how that relocation should be reflected in the database. Imposing the Phase 2 obligations on the rearranger would require that the rearranger have database access to change the rearranged attacher's data points. This could raise data security and integrity issues. On the other hand, imposing the obligation on the rearranged attacher would require the rearranged

[61] *See* Exhibit 2 (SCE Declaration) at ¶ 5; Exhibit 1 (SDG&E Declaration) at ¶ 9.
[62] SDG&E estimates that its cost of compliance with Track 2, Phase 2 would be reduced from approximately $15 million to $50,000 if the Phase 2 PLC option were adopted. Exhibit 1 (SDG&E Declaration) at ¶¶ 8, 9.
[63] *See* OTMR Decision at 39 (OP 39) (requiring compliance within 3 months). However, the Commission granted SDG&E an additional four months to comply with the OTMR Decision. *See* Letter from Rachel Peterson, CPUC Executive Director to Clay Farber, SDG&E at 2 (Jan. 22, 2023) ("SDG&E is granted an extension of four months from January 20, 2023, to May 19, 2023, to comply with D.22-10-025's Ordering Paragraph 2.").
[64] *See* ROW Rules, Section IV(F)(4). Only some of those procedures include notice to existing attachers and the opportunity to be present during the performance of the work.

attacher to either rely on data points provided by the rearranger or verify the information with an additional site visit. Neither is an efficient or reasonable solution.

One-Touch Make-Ready, which attachers generally view as beneficial overall, unquestionably adds to the cost, burden, and complexity associated with implementing the Track 2 Decision. As such, the OTMR Decision is a new development that supports modification of the Track 2 Decision as any rearrangements would be reflected in a new PLC by the rearranger. As explained below, allowing the rearranger to submit the PLC it already must prepare, which would reflect information regarding any rearranged attachments, would better advance the purposes of both the OTMR and Track 2 Decisions.

## V. PROPOSED MODIFICATIONS

Petitioners propose three key modifications to the Track 2 Decision:

- Require owners and attachers to:
    - For all existing and future attachments, provide Data Points 8 and 11; and
    - For all existing pole attachments that were subject to the pole loading retention requirements specified in General Order 95 Rule 44 and for all future pole attachments, provide *either* Data Points 6-7, 9, 10, and 12-17 as individual data points *or* the PLC performed for those attachments.
- The Commission should clarify and refine the funding mechanism for IOU compliance with Track 2 requirements.
- The implementation date for the submission of the Phase 2 Data under either the Track 2 Decision or the Phase 2 PLC Option should be extended to one year from the date of the decision on the Petition.

As explained in detail below, each of these modifications is reasonable, will promote the Commission's goals in a more effective and efficient manner, will mitigate cost impacts on ratepayers, and will otherwise make the implementation process more consistent with sound public policy and the Governor's recent mandate.

### A. Phase 2 PLC Option

Building off of the consensus reached during the Phase 2 Workshops regarding "further refinements that may be needed for implementing the Phase 2 Data Points,"[65] Petitioners propose the Phase 2 PLC Option, which will significantly reduce the cost and burden of Phase 2 compliance (and thus align with the Governor's Executive Order and sound public policy) while providing the Commission with more comprehensive and accurate data.[66]

Under the Phase 2 PLC Option, the Major Pole Owners and attachers would continue to provide Data Point 8 (Attachment Description) and Data Point 11 (Grade of Construction) for each attachment and pole as applicable.[67] As to the other ten Phase 2 Data Points (Data Points 6–7, 9–10 and 12–17), however, the Major Pole Owners and attachers would have the option to instead provide a PLC that was associated with its attachments on the pole for new attachments and for existing attachments for which owners and attachers are required to have retained a PLC under the document retention requirements specified in GO 95, Rule 44.[68]

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[65] Track 2 Decision at 114.

[66] Specific edits to OP 9 to implement the Phase 2 PLC Option are attached. *See* Attachment 1: Redline to D.21-10-019 Ordering Paragraphs, OP 9.

[67] Petitioners propose to continue to comply with the Track 2 Decision's directive to populate the databases with Data Point 8 (Attachment Description) *for each attachment* because such information is relatively easily accessible and would be useful. Phase 2 Workshop Report at 5. Petitioners propose the pole owners provide Data Point 11 (Grade of Construction) *for each pole* because grade of construction is a characteristic of the pole; it does not vary by attachment. *See* Phase 2 Workshop Report at 35. For this reason, it also makes more sense for the Major Pole Owners to provide Data Point 11. *See* Phase 2 Workshop Report at 21.

[68] Of the GO 95 rules cited in the Track 2 Decision, only Rule 44.1 has data retention requirements that are related to the Phase 2 Data Points. *See* Phase 2 Workshop Report, Attachment 6: D.21-10-019 Assumptions Regarding Requirements for Retention of Phase 2 Data Points vs. GO 95 Requirements at 1. Owners and attachers have been required to retain PLCs for approximately the past 10–15 years (depending on the type of provider and type of attachment). *See* D.09-08-029 (requiring utilities' retention of any PLCs for "additional construction" for five years); D.12-01-032 (requiring all "entities" with pole attachments to retain the required records for 10 years); D.14-02-015 (requiring PLCs conducted for additional construction be retained for the life of the pole).

The Track 2 Decision should be modified to adopt the Phase 2 PLC Option because PLCs for the covered attachments should: (i) provide more comprehensive information than the individual Phase 2 Data Points; (ii) reflect information regarding all pre-existing attachments on the pole and—if the PLC postdates the OTMR Decision, any rearrangements made pursuant to that Decision; and (iii) are significantly less costly to obtain and provide than the ten individual Data Points since the PLCs will exist for all new attachments and should have been maintained for any attachment made after the GO 95, Rule 44 document retention requirements were adopted.

As noted above, it appears that the Track 2 Data Points were based on data utilized in connection with PLCs.[69] Thus, it is not surprising that PLCs themselves include virtually all of the Track 2 data points—plus substantially more comprehensive information—about the individual attachment as well as the overall integrity of the pole.[70] Importantly, PLCs demonstrate how the new attachment combines with all pre-existing attachments on the pole to impact the overall load on the pole and thus its remaining strength.[71] This information may be

[69] *See* Track 2 Decision at 30 ("[T]he Commission agrees with SED to change the field title to Calculation Inputs since the intent is to list data information used in pole loading calculations rather than general pole loading information."); Phase 2 Workshop Report at 9 ("Although Workshop participants were unable to identify with certainty how the Commission developed the Phase 2 Data Points, there was general agreement that almost all of the Data Points seemed to be drawn from—or related to—select inputs and/or outputs of PLCs. Relatedly, there was discussion of how many of these Data Points were out of date, tracking language in D.98-10-058, the Commission's Right of Way ("ROW") decision first adopted in 1998—*before PLC software became the industry standard*.") (footnotes omitted).

[70] Phase 2 Workshop Report at 9 n.27 ("In the course of the Workshops, several actual PLCs were displayed for all participants. . . . The number of inputs and outputs displayed confirmed that the Phase 2 Data Points represented, at best, only a subset of the type of information included in a typical PLC. As discussed below, Data Point 6 (Attachment Location) is not included in a PLC and a few other Data Points were at best related to pole loading concepts that have either long been abandoned (*e.g.*, Data Point 14—Average Span Length; a design standard used over 30 years ago and long abandoned) or do not universally appear in PLCs (*e.g.*, Data Point 17—Bending Moment of Attachment).") (internal citations omitted).

[71] *See* Exhibit 5 (Sample Pole Loading Calculation).

especially useful to potential attachers who are trying to assess if a particular pole can support the addition of their attachment.

Critically, the PLC for the most recent attachment on a pole will have more up to date and more comprehensive information than individual data points, and thus may help address one of the vulnerabilities of the databases that was identified in the Phase 2 Decision: that the data points may not be accurate.[72] Providing the option to include PLCs instead of individual data points will help mitigate this issue since each new PLC for a pole should inherently reflect the most current information about what is on the pole, including current information about pre-existing attachments gathered from the necessary field visits required to prepare the PLC.[73] Providing the option to include PLCs will also address issues raised by the OTMR Decision[74] since the PLC for the new attachment will necessarily reflect any rearrangements made to install the new attachment.

Moreover, PLCs are less costly to provide because they can be provided in their native format and the ones required by the Phase 2 PLC Option should be more readily accessible. The Phase 2 Workshop Report documented the fact that attachers do not have the Phase 2 Data Points in a database, spreadsheet, or other central repository.[75] Thus, to populate the databases with the Phase 2 Data Points, attachers and pole owners would likely have to, for example, undertake a

[72] Track 2 Decision at 48 ("[T]he five major pole owners shall include a disclaimer indicating that the data in the databases may not be completely accurate, that the information provided is the most recent information available, and that it is the responsibility of the information requestor to verify and validate the information in accordance with all existing safety requirements.").
[73] Track 2 Decision at 19 ("[T]he Commission is also mindful about an applicant's duty to conduct field surveys and their duty pursuant to GO 95 to perform proper loading calculations.").
[74] *See* OTMR Decision, and *supra* Section IV.C.
[75] Phase 2 Workshop Report at 2 ("[T]he Pole Owners and attachers confirmed that they did not maintain or otherwise collect the Phase 2 Data Points as discrete extractable data points for their embedded base of attachments in the normal course . . . ."); *id.* at 7 ("The Phase 2 Data Points are not readily available as discrete, extractable data points in any existing database, spreadsheet, or other central repository.").

field visit (and then calculate certain data points such as bending moments) or otherwise try to extract data from the PLCs that they have otherwise maintained, which itself can be costly.[76] Undertaking field visits to collect this data, however, would be contrary to the Track 2 Decision's finding that an individual, in-person survey of each pole would not be required,[77] would be very costly,[78] and may cause other unintended consequences.[79] In contrast, if the Phase 2 PLC Option were adopted, pole owners and attachers would have the option of providing PLCs only for those attachments subject to the data retention requirements in GO 95 and future attachments and could provide them in their native format. This would provide more comprehensive information about the attachments on the poles and be significantly less costly and less burdensome than having to provide individual data points for all attachments.[80]

The Petitioners acknowledge that the Phase 2 PLC Option does not require Phase 2 data submissions (either the provision of PLCs or the ten individual data points it replaces) for older attachments (*i.e.*, PLCs conducted before the GO 95 document retention period) but submit that should not impact the integrity of the databases or their usefulness. As an initial matter, and as noted above, each PLC for a new attachment should include information regarding all

[76] PLCs are typically kept in PDF or hard copy formats. *See also* Phase 2 Workshop Report at 2, 7, 20, Attachment 5 (regarding the data gathering requirements for each data point). At the workshop, parties also confirmed that it may not be practical to obtain certain data points even with field visits. *Id.,* Attachment 5 at 8 (discussing challenges of obtaining attachment weight from a field visit).
[77] Track 2 Decision at 62 ("The Commission also rejects the cost concerns as they are premised on the erroneous underlying assumption that compliance will require an individual, in-person survey of each utility pole.").
[78] *See* Exhibit 3 (PG&E Declaration) at ¶ 4; Exhibit 2 (SCE Declaration) at ¶ 4; Exhibit 1 (SDG&E Declaration) at ¶ 8.
[79] *See, e.g.*, R.17-06-028, SDG&E and SoCalGas Opening Comments on ROW Rules Staff Proposal (June 9, 2025) at 10 ("For example, an attacher within SDG&E's service territory recently retained the services of a vendor to perform surveys of SDG&E poles utilizing drones to gather information about the attacher's equipment. During that project, SDG&E received numerous calls from customers and even local law enforcement agencies questioning the actions of the vendor….").
[80] *See* Exhibit 2 (SCE Declaration) at ¶ 5; Exhibit 1 (SDG&E Declaration) at ¶ 9. For example, SDG&E estimates that its cost of compliance with Track 2, Phase 2 would be reduced from approximately $15 million to $50,000 if the Phase 2 PLC option were adopted. Exhibit 1 (SDG&E Declaration) at ¶¶ 8, 9.

preexisting attachments. Thus, Phase 2 information about older attachments should be included in the PLCs for newer attachments on the pole. Providing data for older attachments will be facilitated by the fact that some pole owners and attachers have relatively recent PLCs for a significant percentage of their poles that include older attachments.[81] For example, due to its 2014 Pole Loading Program (which took 7 years to complete), SCE reports that it has PLCs for approximately 90% of its poles.[82] Relatively new entrant Sonic, reports that it has PLCs for 100% of its attachments.[83]

As such, information regarding older legacy attachments will continue to be "filled in" as PLCs are performed and submitted for new and modified attachments. Moreover, the key usable information about what attachments are on each pole—i.e., the Track 1 data, the Track 2, Phase 1 data, and Data Points 8 and 11 from Phase 2—will be populated in the databases for each attachment regardless of when it was attached. Finally, it would neither be reasonable nor fair to require pole owners and/or attachers to provide PLCs for attachments before there was a regulatory obligation to maintain such records.

### B. Refinement of Funding Mechanism

Petitioners request that the Commission clarify and refine the funding mechanism for IOU compliance with the Track 2 Decision requirements. Specifically, the Commission should account for how the IOUs should recover reasonable costs associated with database development, data collection, and ongoing maintenance. The Track 2 Decision, OP 24 states,

[81] The number of PLCs maintained by any given pole owner or attacher will invariably be different depending on, among other things, the age of network, the volume of new construction or reconstruction undertaken in the last 10-15 years, and whether any audits or other pole review programs were conducted. Moreover, as noted above, more recent PLCs will contain the most relevant and comprehensive information on all attachments—regardless of who owns those attachments—on a pole.
[82] *See* Exhibit 2 (SCE Declaration) at ¶ 3.
[83] *See* Exhibit 4 (Sonic Declaration) at ¶¶ 5, 6.

"for pole owners subject to a general rate case, those costs incurred to implement the decisions in this proceeding shall be distributed as appropriate between electric utility rates for electric attachments."[84] However, the Track 2 Decision is silent on the appropriate funding mechanism that the utilities subject to a general rate case ("GRC") should utilize to recover costs and apply those costs to ratepayers.

A GRC is a comprehensive proceeding where a utility requests approval for the revenue it needs to operate, maintain, and invest in its infrastructure over a multi-year period and is typically filed every 3–4 years. It covers all aspects of utility operations, including capital investments, operations and maintenance, and administrative costs, etc. The GRC sets base rates that customers would pay based on these forecasted costs. The GRC process is lengthy and involves detailed review by various stakeholders, public input, and a formal Commission decision that establishes the utility's authorized revenue requirement.

In contrast, a reimbursable memorandum account is typically used to track specific, unforeseen, or extraordinary costs that arise between GRCs, such as emergency events and regulatory compliance changes, and are temporal in nature. Costs are recorded as they occur; the utility requests recovery later through an advice letter or application to the Commission. Once the Commission determines the costs were reasonable and prudent, the costs are typically recovered through a rate adjustment.

The Track 2 Decision should be updated to specify the funding mechanism for electric utilities subject to this rule, which will create certainty that will allow the electric utilities to allocate funds and resources to comply with the Track 2 Decision without diverting resources away from necessary operational needs, reliability initiatives, or wildfire mitigation programs.[85]

[84] Track 2 Decision at 131 (OP 24).
[85] *See* Attachment 1: Redline to D.21-10-019 Ordering Paragraphs, OP 3.

### C. Modification of Implementation Timeline

As explained above, the Track 2 Decision requires that attachers provide Phase 2 Data Points 6–17 for new and existing attachments within 12 months of the Phase 2 Joint Workshop Report,[86] which is September 9, 2025.[87] The Major Pole Owners, who are also responsible for supplying the Phase 2 Data Points for their own attachments,[88] have 12 months from the date on which pole attachers provide their data to populate the pole databases (*i.e.*, September 9, 2026).[89] To afford both attachers and the Major Pole Owners adequate time to implement any revised requirements (or to comply with existing requirements if the Petition is denied), Petitioners propose that the Track 2 Decision be modified so that the attachers' obligation to produce the Phase 2 Data Points in OP 9 runs from the date of the Petition decision (as opposed to the Phase 2 Joint Workshop Report).[90] Because the requirements for adding the data sets to the databases are already linked to the production of the Track 2 data, there is no need to modify OP 11.[91]

By modifying the compliance date as proposed, the Commission would ensure a methodical and pragmatic approach to database implementation, ultimately benefiting all parties involved. In addition, and in conjunction with this Petition, Petitioners note that they are also submitting a separate letter to the Executive Director requesting that the Phase 2 compliance obligations be held in abeyance, pending a decision on this Petition. As the letter explains, such

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[86] Track 2 Decision at 127 (OP 9) ("Pole attachers shall be responsible for providing the information required for Phase 2 Data Points 6–17 in Attachment A for existing and new pole attachments within 12 months from the date the Phase 2 joint workshop report of the five major pole owners in California . . . is filed.").
[87] The Phase 2 Workshop Report was filed on September 9, 2024.
[88] Track 2 Decision at 125 (OP 3) ("The five major pole owners in California . . . shall be responsible for incurring the costs to comply with supplying the attachment data points identified in Attachment A for their own attachments.").
[89] *Id.* at 128 (OP 11) ("Each of the five major pole owners in California . . . shall add the datasets set forth in Attachment A to their pole databases within 12 months from the date pole attachers provide the information required by Attachment A . . . .").
[90] *See* Attachment 1: Redline to D.21-10-019 Ordering Paragraphs.
[91] *See supra* note 87.

an extension will give the Commission time to carefully review and act on the Petition, and will prevent attachers and the Major Pole Owners (and by extension the IOU ratepayers) from expending significant resources in an effort to comply with the existing obligations that will hopefully be modified by the Commission's decision to grant this Petition.

## VI. CONCLUSION

For the reasons stated above, Petitioners respectfully request that the Commission grant this Petition for Modification and revise D.21-10-019 as proposed to ensure regulatory efficiency, affordability, and alignment with current policy objectives.

Respectfully submitted,

By: */s/ Walter C. Waidelich*

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Dated: July 25, 2025

[92] Pursuant to Rule 1.8(d) of the Commission's Rules of Practice and Procedure, Petitioners' counsel have authorized SDG&E to file this Petition on their behalf.

# ATTACHMENT 1

# REDLINE TO D.21-10-019 ORDERING PARAGRAPHS

# REDLINE TO D.21-10-019 ORDERING PARAGRAPHS

OP 2: Each of the five major pole owners in California (Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Frontier ~~Communications~~ and AT&T [AT&T is the collective reference for Pacific Bell Telephone Company d/b/a/ AT&T California, AT&T Corp., and AT&T Mobility]) shall include the data ~~points~~ identified in Attachment A for each attachment as set forth in Ordering Paragraphs 8 and 9 and shall store this information in each pole owner's data base.

OP 3: The five major pole owners in California (Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Frontier ~~Communications~~, and AT&T [AT&T is the collective reference for Pacific Bell Telephone Company d/b/a/ AT&T California, AT&T Corp., and AT&T Mobility]) shall be responsible for incurring the costs to comply with supplying the attachment data points identified in Attachment A for their own attachments. Owners subject to a general rate case shall have the option to utilize a reimbursable memorandum account to recover costs incurred to comply with supplying the data points identified in Attachment A and the costs to develop the pole data bases described in OP 2. Additionally, Pole Owners subject to a general rate case will have the option of seeking a disposition of these memorandum accounts by Tier 2 advice letter or through their respective general rate case.

OP 9: Pole attachers shall be responsible for providing (i) the information required for Phase 2 Data Points ~~6-17~~ 8 and 11 in Attachment A for all existing and future pole attachments, and (ii) for all existing pole attachments that were subject to the pole loading retention requirements specified in General Order 95 Rule 44 and for all future pole attachments, either (a) the information required for Phase 2 Data Points 6-7, 9, 10 and 12-17 in Attachment A as individual data points or (b) the pole loading calculation performed for those attachments. All information shall be provided within 12 months from the effective date of the Commission's decision on the instant Petition. ~~the Phase 2 joint workshop report of the five major pole owners in California (Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, Frontier Communications, and AT&T [AT&T is the collective reference for Pacific Bell Telephone Company d/b/a/ AT&T California, AT&T Corp., and AT&T Mobility]) is filed.~~

# ATTACHMENT 2

# REDLINE TO D.21-10-019 ATTACHMENT A

# ATTACHMENT A: POLE ATTACHMENT DATA BASE INFORMATION

| Item # | Field Name | Field Description | Field Type |
|---|---|---|---|
| 1 | Number of Existing Attachments on Pole | The number of existing attachments on any given pole. | Integer |
| 2 | Attachment Owner | The name of the company in ownership of a specific attachment. | Text |
| 3 | Attachment Identifying Number | The unique number used to track an attachment. | Text |
| 4 | Attachment Status | *e.g.,* submitted, pending, approved, installed, etc. | Text |
| 5 | Attachment Status Date | Date of the most recent status update on any given attachment. | Date |
| *6* | Attachment Location on Pole | Location of attachment on pole (e.g., within comm. zone, pole top, cross arm, pole mount, etc.). | Text *[1] |
| 7 | Pole Attachment Elevation | Expressed in feet and inches from ground. | Numeric Value * |
| 8 | Attachment Description | e.g., cable, messenger, antenna, service drop, electric utility equipment, etc. | Text |
| 9 | Attachment Dimensions | Detailed information specifying the size of the attachment. For cables and conductors, the gauge of the cable must | Text * |
| 10 | Attachment Weight | Weight of attachment. For cables, the weight per linear foot must be provided. | Numeric Value * |
| 11 | Grade of Construction | Grade of construction As specified in Section IV of GO 95. | Text |
| 12 | Conductor Tension | Tension of the conductor, cable, messenger or equivalent. | Numeric Value * |
| 13 | Cable Tensile Strength | Tensile strength of the conductor, cable, messenger, or equivalent. | Numeric Value * |
| 14 | Cable Average Span Length | Average span length of the conductor, cable, messenger, or equivalent. | Numeric Value * |

[1] Entities with attachments shall have the option to provide pole loading calculations in lieu of Data Points 6–7, 9–10 and 12–17.

| | | | |
|---|---|---|---|
| 15 | Wind Loading on the Attachment | Wind loading on the attachment. | Numeric Value * |
| 16 | Vertical Loading | Vertical loading of the attachment. | Numeric Value * |
| 17 | Bending Moment due to the Attachment | Calculation of the pole bending moment caused by the load added to the pole by the attachment at the time it was installed or | Text * |
| 18 | Support Structures | Identify support structures on pole added for the attachment, including but not limited to: guy wires, anchors, cross arms, | Text |
| 19 | Abandoned Attachment | Identify whether the attachment has been abandoned. | Text |
| 20 | Voltage | Attachment voltage as defined by GO 95, Rule 24.1. | Numeric Value |

# EXHIBIT 1

# SDG&E DECLARATION

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | |
|---|---|
| Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California. | Investigation 17-06-027 |
| And Related Matter. | Rulemaking 17-06-028 |

# DECLARATION OF JENNIFER KAMINSKY IN SUPPORT OF THE PETITION FOR MODIFICATION OF DECISION 21-10-019 BY MAJOR POLE OWNERS AND THE JOINT POLE ATTACHERS

I, Jennifer Kaminsky, do declare as follows:

1. I am the Manager of Electric Assets and Compliance for San Diego Gas & Electric Company ("SDG&E"). In that role, I am responsible for oversight of our Joint Asset Management department, which manages the joint use of our electric assets by third parties, including telecommunications companies operating within our service territory. I am personally familiar with the facts and representations in this Declaration, and if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or belief.

2. SDG&E has approximately 235,000 overhead distribution and transmission poles within its service territory, that it believes would be subject to Decision 21-10-019 (the "Decision").

3. SDG&E has issued a Request for Quote ("RFQ") from multiple vendors to support populating its database with the data points required by the Decision.

4. The RFQ requested estimated costs to perform the following scope of work:
    a. Where a pole loading calculation or LiDAR is available for an overhead pole, utilize data available in SDG&E enterprise systems and convert unstructured data to structured data as required by the Decision for ingestion and display into SDG&E's database known as the Telecommunications Attachment Management System (TAMS).
    b. For poles that do not have a pole loading calculation or LiDAR available, perform fielding of poles and perform pole loading calculations using O-Calc or PLS-CAD to gather data needed to populate the database with the required data points.

5. SDG&E has received several responses to its RFQ.

6. The costs to perform this scope of work necessary to comply with the Decision would vary depending on the methodology utilized and the accuracy of the data produced.

7. Based upon the responses that SDG&E received to its RFQ and SDG&E's understanding of the Decision's requirement to accurately provide all data points required by the Decision for each of SDG&E's poles, SDG&E reasonably estimates that the direct cost for a contractor to perform the scope of work would be greater than $15,000,000.

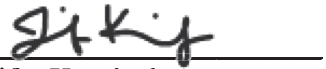
8. SDG&E also reasonably believes that the actual cost to implement the scope of work would also include internal labor costs and overhead costs and would be in addition to the $15,000,000 estimate.

9. However, based upon the responses that SDG&E received to its RFQ, SDG&E reasonably estimates that the cost to implement the approach outlined in the Petition for Modification is approximately $50,000.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed in San Diego, California, this 14 day of July, 2025.

Respectfully submitted,

/s/ 

Jennifer Kaminsky
Manager, Electric Assets & Compliance
San Diego Gas & Electric Company

# EXHIBIT 2

# SCE DECLARATION

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | |
|---|---|
| Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California. | Investigation 17-06-027 |
| And Related Matter. | Rulemaking 17-06-028 |

# DECLARATION OF KRISTOFFER SCHEETZ IN SUPPORT OF THE PETITION FOR MODIFICATION OF DECISION 21-10-019 BY MAJOR POLE OWNERS AND THE JOINT POLE ATTACHERS

I, Kristoffer Scheetz, do declare as follows:

1. I am the Energy Delivery/Distribution Senior Manager in Southern California Edison Company's (SCE) Transmission and Distribution organization. In that role, I am responsible for oversight of our Joint Pole Organization, which manages the attachments on our distribution poles by communications companies operating within our service territory. I am personally familiar with the facts and representations in this Declaration, and if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or belief.

2. SCE has approximately 1.4 million overhead distribution and transmission poles within its service territory, that it believes would be subject to Decision 21-10-019 (the "Decision").

3. In approximately 2014, SCE began to assess its poles over a seven-year period as part of its Pole Loading Program. As a result of SCE's Pole Loading Program, SCE has approximately >90% of its poles that have pole loading calculations.

4. SCE has determined that to populate the data points under the current decision, SCE would need to field and perform new and additional calculations, as well as transform the data from existing pole loading calculations into discrete data that could be published in a data base. SCE has estimated that the cost to perform this work would be approximately $311 million. This estimate was generated using the current competitively bid rates for fielding and conducting pole loading calculations.

5. Although SCE has not had the opportunity to develop a specific cost estimate for the Phase 2 PLC Option described in the Petition for Modification, SCE believes it would be significantly less costly than the $311 million estimate under the current decision.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed in Pomona, California, this 23rd day of July, 2025.

Respectfully submitted,

*/s/ Kristoffer Scheetz*
Kristoffer Scheetz
Energy Delivery/Distribution Senior Manager
Southern California Edison Company

# EXHIBIT 3

# PG&E DECLARATION

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | |
|---|---|
| Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California. | Investigation 17-06-027 |
| And Related Matter. | Rulemaking 17-06-028 |

# DECLARATION OF BRIAN NUGENT IN SUPPORT OF THE PETITION FOR MODIFICATION OF DECISION 21-10-019 BY MAJOR POLE OWNERS AND THE JOINT POLE ATTACHERS

I, Brian Nugent, do declare as follows:

1. I am the Manager of the Innovative Design Solutions team within the Electric Engineering organization at Pacific Gas and Electric Company (PG&E). I have held this position since March 2023. Previously, I held the role of Principal Engineer from 2009 to 2023 and Sr. Distribution Specialist 1998 to 2009 (spending a few months as a Service Planning Supervisor in between that time). I am a Professional Mechanical Engineer and hold a degree in mechanical engineering from Cal Poly San Luis Obispo.

2. In my prior role and current role, my duties have included, but not been limited to, researching, building, and implementing software and data systems for electric distribution design, engineering, and cost estimating. In particular, I have rolled out and trained pole loading calculation software and associated data systems to approximately 1200 users. I have over 25 years of experience performing these types of duties. I also have worked on projects focused on acquisition of asset data from the field into PG&E's software programs and data systems.

3. I have reviewed the Phase 2 data required in Attachment A of D.21-10-019. To obtain the required data, we would need to perform field surveys for most of the poles.

4. PG&E has approximately 2.4 million poles. I estimate a rough cost of $150 to field survey a pole. Using a conservative estimate of 2.2 million poles that might require field surveys, a high-level, rough estimate to perform the required field surveys would be $330 million.

5. Once PG&E obtains the data, we will need to house and maintain the data over time. To do this effectively, we would need to implement a 3D GIS system that all of our frontline workers can interact with and use, similar to how PG&E maintains its primary circuit information. The rough cost to purchase, implement, and train an enterprise-wide 3D GIS system would be approximately $50 million.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed in Fresno, California, this 24th day of July 2025.

***/s/ Brian Nugent***
BRIAN NUGENT

# EXHIBIT 4

# SONIC DECLARATION

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | |
|---|---|
| Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California. | Investigation 17-06-027 |
| And Related Matter. | Rulemaking 17-06-028 |

**DECLARATION OF BRIAN BOTTERI IN SUPPORT OF THE PETITION FOR MODIFICATION OF DECISION 21-10-019 BY THE MAJOR POLE OWNERS AND THE JOINT POLE ATTACHERS**

I, BRIAN BOTTERI, DECLARE:

1. My name is Brian Botteri. My business address is Sonic Telecom, LLC, 2260 Apollo Way, Santa Rosa, CA 95407.

2. I am the Senior Director of Outside Plant Engineering and Project Management for Sonic Telecom, LLC ("Sonic"). I have been employed at Sonic since 2014.

3. I am responsible for directing and overseeing all aspects of Sonic's Outside Plant Engineering and Project Management, for Sonic's deployment of its fiber optic networks. I am personally familiar with the facts and representations in this Declaration, and if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or belief.

4. Sonic offers telecommunications and broadband services in California using its own fiber optic facilities. Unlike many other fiber-based carriers, Sonic seeks to offer its services to the *entire* residential footprint in each municipality it enters.

5. Sonic's preferred deployment methodology is to attach its fiber facilities to the existing utility poles in each municipality. In order to do so, Sonic conducts extensive

engineering analysis, at its expense, of *every existing utility pole* in the target areas necessary for initial network deployment. This analysis necessitates a field visit to each such pole, during which experienced personnel obtain detailed information about the pole itself, as well as about all the electric, telecommunications, and other facilities that are attached to each pole. This information is then input into pole loading calculation ("PLC") software,[1] which determines whether each pole can support a new attachment from Sonic while also complying with all the requirements of the Commission's General Order 95.

6. Sonic has employed this approach in many municipalities in California. The pole owners in California require Sonic to supply a PLC for each pole that is included in a pole attachment application package. The result is that Sonic has performed fielded-data-based PLCs on over 143,000 utility poles to which it has attached its fiber facilities to date, and has supplied those PLCs to the underlying pole owner(s). Sonic has pole attachment applications, including supporting PLCs, currently pending or granted for thousands of additional utility poles, as it continues to build its fiber networks in California.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 23rd day of July 2025, at Santa Rosa, California.

*/s/ Brian Botteri*
Brian Botteri

[1] For example, O-Calc in PG&E's service territory, and SpidaCalc in SCE's service territory.

# EXHIBIT 5

# SAMPLE POLE LOADING CALCULATION

# O-Calc® Pro SDG&E Header Page

## Pole Identification: P218563

Report Created: 5/7/2024
File: P218563_2024Rev0.pplx
Latitude:33.1322183 Longitude:-117.06969 Elevation:669

| | |
|---|---|
| Structure ID: | **P218563** |
| Analysis ID: | **"Unset"** |
| Date Data Collected: | **3-21-2024** |
| Business Unit: | **CMP** |
| Requested By: | **Andrew W Kutzner** |
| Fielded By: | **Brian Rowe** |
| Calcs Performed by: | **KMiguel1** |
| Job or Project ID: | **3-702966** |
| QC Reviewer: | **David Saechao** |

| Analysis Performed | |
|---|---|
| Governing Code/Standard: | **GO 95** |
| Governing Loading District: | **Light** |
| Construction Grade: | **A** |
| Load Analysis: | **Detailed** |
| Clearance Analysis: | **Simple** |
| Analysis Desc. (D, E, N, or U): | **D = Design Prelimary** |

| Loading Results | | |
|---|---|---|
| Load Case | MCU% | Result |
| GO 95 Light | **98.9** | **Pass** |
| SDG&E Known Local Wind <=3000ft 65 MPH | **61.1** | **Pass** |

| Clearance Results | |
|---|---|
| Are Clearances Compliant | **Yes** |
| Guying/Anchor Results | |
| Are Guys/Anchors Compliant | **Yes** |

DESIGN-PRELIMINARY
POLE INTRUSIVE INSPECTION PERFORMED 04-17-2024.
100% POLE STRENGTH REMAINING.

TOP: INSTALL SGL 10' TAN FG ARM

POLE MODELED AS 50'-1 PER POLE TAG.

PRIMARY SPANS (S) MODELED WITH REDUCED TENSION DUE TO DEAD ENDING ON PIN INSULATORS.

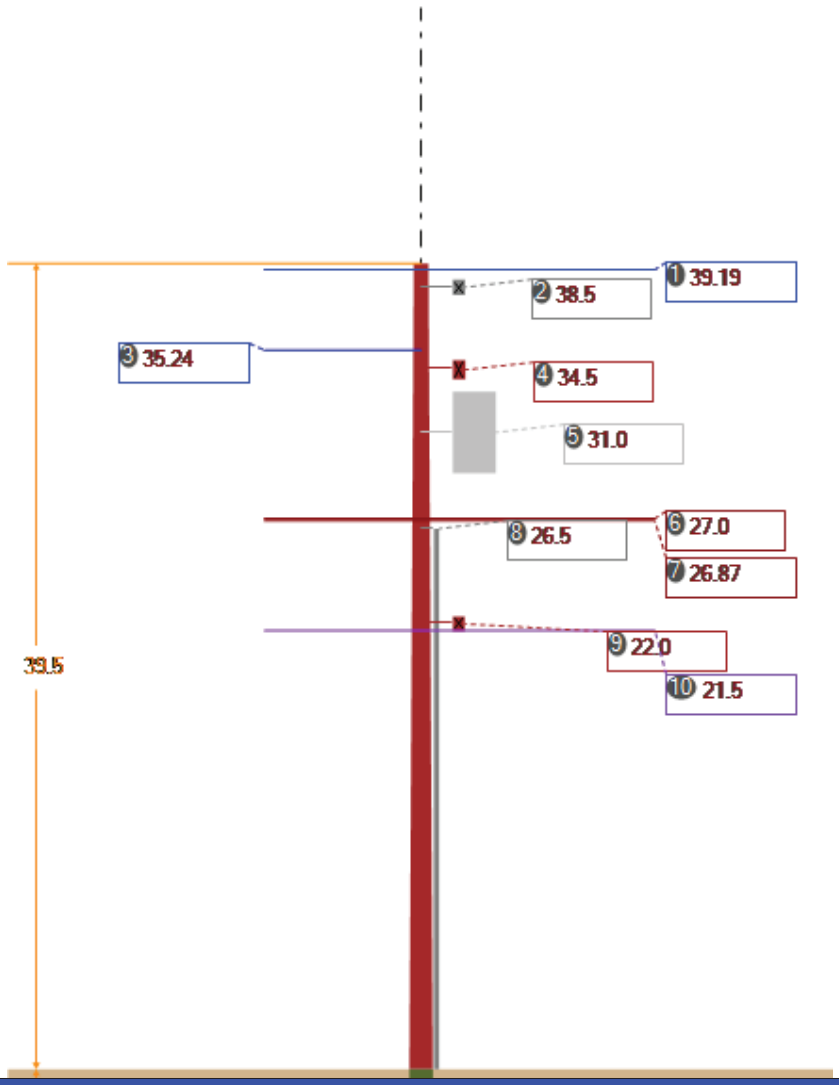
SECONDARY & CMM SPANS (S) MODELED WITH REDUCED TENSION DUE TO VISUAL SLACK IN WIRES.

# O-Calc® Pro Schematic View

## Pole Identification: P218563

Report Created: 5/7/2024

File: P218563_2024Rev0.pplx




**1 - 39.19**

Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)

**2 - 38.5**

Normal 10ft H:38.5

**3 - 35.24**

Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE)
Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE)
Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE)

**4 - 34.5**

Normal 10ft H:34.5

5 - 31.0

Transformer 1PH-75KVA H:31.0

6 - 27.0

Secondary 55° 212.0 0.980" (SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA)
Secondary 235° 241.0 0.980" (SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA)

7 - 26.87

Secondary 180° 90.0 1.168" (RTS Triplex 3/0 AWG - AWAC 2 MESS)
Service 353° 38.0 0.980" (SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA)

8 - 26.5

5" Riser x 26.5' 235.0° H:26.5

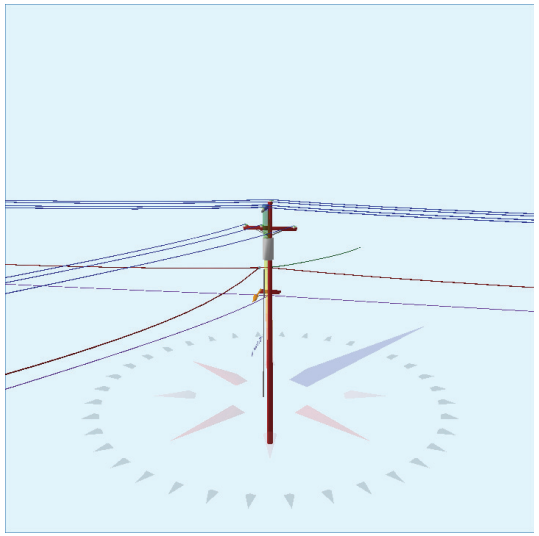
9 - 22.0

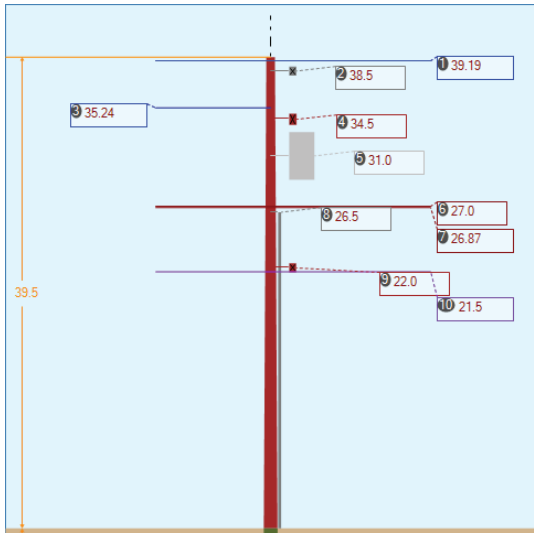
Normal 4ft H:22.0

10 - 21.5

CATV 55° 212.0 0.810" (0.50IN CATV + 6.6M STRAND)
CATV 180° 90.0 0.810" (0.50IN CATV + 6.6M STRAND)
CATV 235° 241.0 0.810" (0.50IN CATV + 6.6M STRAND)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Pole Num: | **P218563** | Pole Length / Class: | **50 / 1** | Code: | **GO 95** | Structure Type: | **Unguyed Tangent** |
| Analysis ID | **Unset** | Species: | **DOUGLAS FIR** | GO 95 Rule: | **At Replace (Existing)** | Pole Strength Factor: | **0.38** |
| Date Data Collected | **3-21-2024** | Setting Depth (ft): | **10.5** | Construction Grade: | **A** | Transverse Wind LF: | **1.00** |
| Business Unit | **CMP** | G/L Circumference (in): | **43.16** | Loading District: | **Light** | Wire Tension LF: | **1.00** |
| Requested By | **Andrew W Kutzner** | G/L Fiber Stress (psi): | **7,600** | Ice Thickness (in): | **0.00** | Vertical LF: | **1.00** |
| Job or Project ID | **3-702966** | Allowable Stress (psi): | **2,779** | Wind Speed (mph): | **56.01** | Pole Factor of Safety: | **2.70** |
| Analysis Desc. (D, E, N, or U) | **D** | Fiber Stress Ht. Reduc: | **No** | Wind Pressure (psf): | **8.03** | Vertical Factor of Safety: | **17.54** |
| Latitude: | **33.132218** | Longitude: | **-117.06969** | Elevation: | **669'** | Bending Factor of Safety: | **2.72** |






| Pole Capacity Utilization (%) Crossarm allowance 300 lbs | | Height (ft) | Wind Angle (deg) |
|---|---|---|---|
| Maximum | 98.9 | 0.0 | 145.6 |
| Groundline | 98.9 | 0.0 | 145.6 |
| Vertical | 15.2 | 27.7 | 145.6 |

| Pole Moments (ft-lb) Crossarm allowance 300 lbs | | Load Angle (deg) | Wind Angle (deg) |
|---|---|---|---|
| Max Cap Util | **57,809** | 152.0 | 145.6 |
| Groundline | **57,809** | 152.0 | 145.6 |
| GL Allowable | **58,955** | | |

**Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 152.0°**

| | Shear Load* (lbs) | Applied Load (%) | Bending Moment (ft-lb) | Applied Moment (%) | Pole Capacity (%) | Bending Stress (+/- psi) | Vertical Load (lbs) | Vertical Stress (psi) | Total Stress (psi) | Pole Capacity (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Powers | 1,013 | 55.6 | **36,940** | 63.9 | **62.7** | **1,739** | 895 | 6 | **1,745** | **62.8** |
| Comms | 217 | 11.9 | **4,701** | 8.1 | **8.0** | **221** | 58 | 0 | **222** | **8.0** |
| PowerEquipments | 67 | 3.7 | **3,640** | 6.3 | **6.2** | **171** | 795 | 5 | **177** | **6.4** |
| Pole | 293 | 16.1 | **5,804** | 10.0 | **9.9** | **273** | 1,640 | 11 | **284** | **10.2** |
| Crossarms | 162 | 8.9 | **5,127** | 8.9 | **8.7** | **241** | 172 | 1 | **243** | **8.7** |
| Risers | 53 | 2.9 | **941** | 1.6 | **1.6** | **44** | 40 | 0 | **45** | **1.6** |
| Insulators | 18 | 1.0 | **656** | 1.1 | **1.1** | **31** | 51 | 0 | **31** | **1.1** |
| Pole Load | 1,823 | 100.0 | **57,809** | 100.0 | **98.1** | **2,722** | 3,651 | 25 | **2,746** | **98.8** |
| Pole Reserve Capacity | | | **1,146** | | **1.9** | **57** | | | **33** | **1.2** |

**Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 152.0°**

| | Shear Load* (lbs) | Applied Load (%) | Bending Moment (ft-lb) | Applied Moment (%) | Pole Capacity (%) | Bending Stress (+/- psi) | Vertical Load (lbs) | Vertical Stress (psi) | Total Stress (psi) | Pole Capacity (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | 1,313 | 72.0 | **47,303** | 81.8 | **80.2** | **2,227** | 1,947 | 13 | **2,240** | **80.6** |
| CATV | 217 | 11.9 | **4,701** | 8.1 | **8.0** | **221** | 63 | 0 | **222** | **8.0** |
| Pole | 293 | 16.1 | **5,804** | 10.0 | **9.9** | **273** | 1,640 | 11 | **284** | **10.2** |
| **Totals:** | 1,823 | 100.0 | **57,809** | 100.0 | **98.1** | **2,722** | 3,651 | 25 | **2,746** | **98.8** |

**Detailed Load Components:**

| Power | | Owner | Height (ft) | Horiz. Offset (in) | Cable Diameter (in) | Sag at Max Temp (ft) | Cable Weight (lbs/ft) | Lead/Span Length (ft) | Span Angle (deg) | Wire Length (ft) | Tension (lbs) | Tension Moment* (ft-lb) | Offset Moment* (ft-lb) | Wind Moment* (ft-lb) | Moment at GL* (ft-lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 54.35 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,316 | 392 | 2,702 | -11,222 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 54.35 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,316 | 446 | 3,072 | 17,834 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 54.35 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,316 | -381 | 2,702 | -11,995 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 54.35 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,316 | -434 | 3,072 | 16,954 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 24.78 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,316 | 177 | 2,702 | -11,437 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 24.78 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,316 | 202 | 3,072 | 17,589 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 24.78 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,316 | -167 | 2,702 | -11,781 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.19 | 24.78 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,316 | -189 | 3,072 | 17,198 |
| Primary | COPPER 4 AWG 3 STRAND BARE | SDG&E | 35.24 | 19.14 | 0.2540 | 1.86 | 0.128 | 90.0 | 180.0 | 90.1 | 100 | 3,116 | 4 | 72 | 3,191 |
| Primary | COPPER 4 AWG 3 STRAND BARE | SDG&E | 35.24 | 55.38 | 0.2540 | 1.86 | 0.128 | 90.0 | 180.0 | 90.1 | 100 | 3,116 | 6 | 72 | 3,194 |
| Primary | COPPER 4 AWG 3 STRAND BARE | SDG&E | 35.24 | 55.38 | 0.2540 | 1.86 | 0.128 | 90.0 | 180.0 | 90.1 | 100 | 3,116 | 0 | 72 | 3,187 |
| Secondary | SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA | SDG&E | 27.00 | 7.36 | 0.9800 | 3.99 | 0.419 | 212.0 | 55.0 | 212.1 | 1,328 | -4,361 | 27 | 1,865 | -2,469 |
| Secondary | SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA | SDG&E | 27.00 | 7.36 | 0.9800 | 4.69 | 0.419 | 241.0 | 235.0 | 241.1 | 1,328 | 4,361 | 31 | 2,120 | 6,512 |
| Secondary | RTS Triplex 3/0 AWG - AWAC 2 MESS | SDG&E | 26.87 | 25.10 | 1.1680 | 6.38 | 0.605 | 90.0 | 180.0 | 91.5 | 100 | 2,356 | 5 | 249 | 2,609 |
| Service | SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA | SDG&E | 26.87 | 25.10 | 0.9800 | 1.03 | 0.419 | 38.0 | 353.0 | 38.1 | 100 | -2,483 | 3 | 55 | -2,426 |
| | | | | | | | | | | | **Totals:** | **9,220** | **122** | **27,599** | **36,940** |

| **Comm** | | **Owner** | **Height (ft)** | **Horiz. Offset (in)** | **Cable Diameter (in)** | **Sag at Max Temp (ft)** | **Cable Weight (lbs/ft)** | **Lead/Span Length (ft)** | **Span Angle (deg)** | **Wire Length (ft)** | **Tension (lbs)** | **Tension Moment* (ft-lb)** | **Offset Moment* (ft-lb)** | **Wind Moment* (ft-lb)** | **Moment at GL* (ft-lb)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATV | 0.50IN CATV + 6.6M STRAND | CATV | 21.50 | 7.97 | 0.8100 | 2.22 | 0.214 | 212.0 | 55.0 | 212.0 | 2,195 | -5,739 | 15 | 1,228 | -4,496 |
| CATV | 0.50IN CATV + 6.6M STRAND | CATV | 21.50 | 7.97 | 0.8100 | 2.49 | 0.214 | 90.0 | 180.0 | 90.2 | 100 | 1,900 | 6 | 139 | 2,046 |
| CATV | 0.50IN CATV + 6.6M STRAND | CATV | 21.50 | 7.97 | 0.8100 | 2.58 | 0.214 | 241.0 | 235.0 | 241.0 | 2,195 | 5,739 | 17 | 1,396 | 7,151 |
| | | | | | | | | | | | **Totals:** | **1,900** | **38** | **2,762** | **4,701** |

| **PowerEquipment** | | **Owner** | **Height (ft)** | **Horiz. Offset (in)** | **Offset Angle (deg)** | **Rotate Angle (deg)** | **Unit Weight (lbs)** | **Unit Height (in)** | **Unit Depth (in)** | **Unit Diameter (in)** | **Unit Length (in)** | **Offset Moment* (ft-lb)** | **Wind Moment* (ft-lb)** | **Moment at GL* (ft-lb)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Transformer | 1PH-75KVA | SDG&E | 31.00 | 23.52 | 145.0 | 145.0 | 795.00 | 48.00 | -- | 25.33 | -- | 1,548 | 2,092 | 3,640 |
| | | | | | | | | | | | **Totals:** | **1,548** | **2,092** | **3,640** |

| **Crossarm** | | **Owner** | **Height (ft)** | **Horiz. Offset (in)** | **Offset Angle (deg)** | **Rotate Angle (deg)** | **Unit Weight (lbs)** | **Unit Height (in)** | **Unit Depth (in)** | **Unit Length (in)** | **Offset Moment* (ft-lb)** | **Wind Moment* (ft-lb)** | **Moment at GL* (ft-lb)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Normal | 10' Tan FG w/ Straight Pins | SDG&E | 38.50 | -6.17 | 55.0 | 55.0 | 48.00 | 4.63 | 3.63 | 120.00 | 3 | 60 | 63 |
| Normal | Double Wood 4 Pin 10ft 3.8in x 5.8in | SDG&E | 34.50 | 6.50 | 145.0 | 145.0 | 48.00 | 5.75 | 3.75 | 120.00 | 0 | 4,222 | 4,222 |
| Normal | Wood Guard Arm 4ft 3.5in x 4.5in | SDG&E | 22.00 | 7.19 | 145.0 | 145.0 | 14.00 | 4.50 | 3.50 | 48.00 | 0 | 843 | 843 |
| | | | | | | | | | | **Totals:** | **3** | **5,124** | **5,127** |

| Riser | | Owner | Height (ft) | Horiz. Offset (in) | Offset Angle (deg) | Rotate Angle (deg) | Unit Weight (lbs) | Unit Height (in) | Unit Depth (in) | Unit Diameter (in) | Unit Length (in) | Offset Moment* (ft-lb) | Wind Moment* (ft-lb) | Moment at GL* (ft-lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5" Riser x 26.5' 235.0° H:26.5 | 5" Riser x 26.5' | SDG&E | 26.50 | 7.29 | 235.0 | 235.0 | 39.75 | 318.00 | 3.00 | 3.00 | 318.00 | 6 | 935 | 941 |
| | | | | | | | | | | | **Totals:** | **6** | **935** | **941** |

| Insulator | | Owner | Height (ft) | Horiz. Offset (in) | Offset Angle (deg) | Rotate Angle (deg) | Unit Weight (lbs) | Unit Diameter (in) | Unit Length (in) | Offset Moment* (ft-lb) | Wind Moment* (ft-lb) | Moment at GL* (ft-lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pin | F Neck Non Porc | SDG&E | 38.69 | 54.00 | 151.5 | 0.0 | 8.99 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | F Neck Non Porc | SDG&E | 38.69 | -54.00 | 318.5 | 0.0 | 8.99 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | F Neck Non Porc | SDG&E | 38.69 | 24.00 | 159.4 | 0.0 | 8.99 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | F Neck Non Porc | SDG&E | 38.69 | -24.00 | 310.6 | 0.0 | 8.99 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 34.74 | 18.00 | 215.2 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 87 | 87 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 34.74 | 55.00 | 228.3 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 87 | 87 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 34.74 | -55.00 | 61.7 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 87 | 87 |
| Spool | Spool Insulator - 20 kV | SDG&E | 27.00 | 0.00 | 145.0 | 235.0 | 1.00 | 2.50 | 2.12 | 0 | 8 | 8 |
| Bolt | Three Bolt | CATV | 21.50 | 0.00 | 145.0 | 55.0 | 5.00 | 3.00 | 0.10 | 0 | 0 | 0 |
| | | | | | | | | | **Totals:** | **0** | **656** | **656** |

**Pole Buckling**

| Buckling Constant | Buckling Column Height* (ft) | Buckling Section Height (% Buckling Col. Hgt.) | Buckling Section Diameter (in) | Minimum Buckling Diameter at GL (in) | Diameter at Tip (in) | Diameter at GL (in) | Modulus of Elasticity (psi) | Pole Density (pcf) | Ice Density (pcf) | Pole Tip Height (ft) | Buckling Load Capacity at Height (lbs) | Buckling Load Applied at Height (lbs) | Buckling Load Factor of Safety |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 27.65 | 33.93 | 12.52 | 8.61 | 8.60 | 13.74 | 2.38e+6 | 60.00 | 57.00 | 39.50 | 23,683 | **240.18** | **6.58** |

**Notes**

| Date | Author | Description |
|---|---|---|
| 4/3/2024 | SDG&E | SDGE Summary Note |

DESIGN-PRELIMINARY
POLE INTRUSIVE INSPECTION PERFORMED 04-17-2024.
100% POLE STRENGTH REMAINING.

TOP: INSTALL SGL 10' TAN FG ARM

POLE MODELED AS 50'-1 PER POLE TAG.

PRIMARY SPANS (S) MODELED WITH REDUCED TENSION DUE TO DEAD ENDING ON PIN INSULATORS.

SECONDARY & CMM SPANS (S) MODELED WITH REDUCED TENSION DUE TO VISUAL SLACK IN WIRES.

| 05/02/2024 | dsaechao | SDG&E Clearance Analysis - Simple - urban |
|---|---|---|

Clearance Analysis Form - Simple

Ref. General Order 95, Section III, Table 2

Vertical Clearances at Pole
Power to Ground (25 ft) 26.9'
Neutral to Power (48 in)
Power to Power (48 in) 98"
Power to Comm (48 in) 64"
Comm to Ground (18 ft) 21.5'

Yes

# O-Calc® Pro Crossarm Analysis

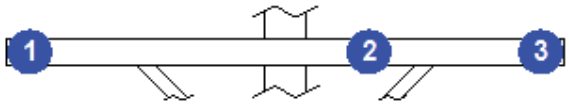
Pole Identification: P218563

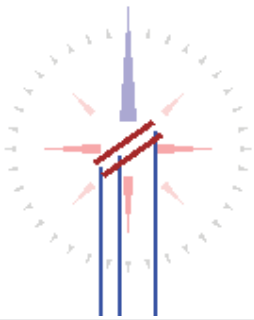
Report Created: 5/7/2024

File: P218563_2024Rev0.pplx

| Status Summary by Crossarm | |
|---|---|
| Double Wood 4 Pin 10ft 3.8in x 5.8in @ 34.5' | Adequate |
| Wood Guard Arm 4ft 3.5in x 4.5in @ 22.0' | Adequate |

## *Double Wood 4 Pin 10ft 3.8in x 5.8in @ 34.5'*

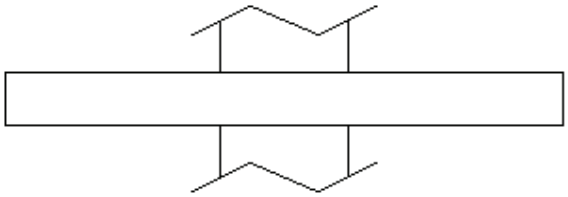


| | | | | |
|---|---|---|---|---|
| Worst LoadCase: | Wood - SDG&E Grade A - Known Local Wind <=3000 ft - At Replacement | | |
| Worst Wind Angle for Crossarm: | 150.5 degrees | | |
| Analysis Method Applied: | Superposition | | |
| | Modulus of Rupt | Strength Factor | Allowable Stress |
| Allowable Capacity: | 8000.0 psi | X 0.50 | = 4000.0 psi |
| Arm Actual Stress: | 401.8 psi | Result: | 0.10 |
| | Vertical | Longitudinal | Transverse |
| Moment Capacity: | 13776.0 ft-lbs | 17968.8 ft-lbs | N/A |
| Moment in Arm: | 333.2 ft-lbs | 1353.3 ft-lbs | N/A |
| Allowable Connection Load: | 2755.2 lbs | 3593.8 lbs | 2755.2 lbs |
| Load on Connection: | 122.2 lbs | 429.6 lbs | 161.1 lbs |
| Connection Interaction: | 0.07 | | |

| | | | | |
|---|---|---|---|---|
| 1 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 8.7 lbs | 81.6 lbs | 51.9 lbs |
| | Moment at Insul Base: | N/A | 40.8 ft-lbs | 25.9 ft-lbs |
| | Span | Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE) | | |
| 2 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 8.7 lbs | 81.6 lbs | 51.9 lbs |
| | Moment at Insul Base: | N/A | 40.8 ft-lbs | 25.9 ft-lbs |
| | Span | Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE) | | |
| 3 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 8.7 lbs | 81.6 lbs | 51.9 lbs |
| | Moment at Insul Base: | N/A | 40.8 ft-lbs | 25.9 ft-lbs |
| | Span | Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE) | | |

## *Wood Guard Arm 4ft 3.5in x 4.5in @ 22.0'*



| | | | |
|---|---|---|---|
| Worst LoadCase: | Wood - SDG&E Grade A - Known Local Wind <=3000 ft - At Replacement | | |
| Worst Wind Angle for Crossarm: | 324.8 degrees | | |
| Analysis Method Applied: | Superposition | | |
| | Modulus of Rupt | Strength Factor | Allowable Stress |
| Allowable Capacity: | 8000.0 psi | X 0.50 | = 4000.0 psi |
| Arm Actual Stress: | 31.2 psi | Result: | 0.01 |
| | Vertical | Longitudinal | Transverse |
| Moment Capacity: | 7875.0 ft-lbs | 12250.0 ft-lbs | N/A |
| Moment in Arm: | 28.0 ft-lbs | -51.9 ft-lbs | N/A |
| Allowable Connection Load: | 3937.5 lbs | 6125.0 lbs | 3937.5 lbs |
| Load on Connection: | 28.0 lbs | -51.9 lbs | 0.0 lbs |
| Connection Interaction: | 0.01 | | |

# O-Calc® Pro SDGE Crossarm Check

## Pole Identification: P218563

Report Created: 5/7/2024

File: P218563_2024Rev0.pplx

| | | | |
|---|---|---|---|
| Pole ID: | P218563: Design-Preliminary | Designer: | KMiguel1 |
| Date: | Tuesday . May 7, 2024 | SAP/DPSS#: | 3-702966 |
| Pole Mat: | Wood | Arm Mat: | Fiberglass |
| Arm Len: | 10' | Arm Type: | TAN |
| Dist only?: | Dist. Only | Try Angle Pins | |
| Num Wires: | 4 | Num Arms: | 1 |
| Crossarm SF: | 0.5 (At Installation) | Height of Arm: | Installed at 38.50 ft above groundline |
| Summary: | 10' Tan FG w/ Straight Pins | Wire Config | 54 24 C 24 54 |
| | | | Valid Wire Config |

| | | Vertical Span 1 | Vertical Span 2 | | Horizontal Span 1 | Horizontal Span 2 | | Transverse Span 1 | Transverse Span 2 | | Percent Loaded | Pass or Fail? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Arm Configuration | Applied Loads (From O-Calc) | 193.8 | | + | 0 | | + | 150.6 | | = | 25.7% | Pass |
| | Allowed Loads (OH std 379) | 1423 | | | 560 | | | 1250 | | | | |
| Double Arm Configuration – Arm 1 | Applied Loads (From O-Calc) | 193.8 | | + | 0 | | + | 150.6 | | = | 25.7% | Pass |
| | Allowed Loads (OH std 379) | 1423 | | | 1120 | | | 1250 | | | | |
| Double Arm Configuration – Arm 2 | Applied Loads (From O-Calc) | 0 | | + | 0 | | + | 0 | | = | 0% | |
| | Allowed Loads (OH std 379) | 1423 | | | 1120 | | | 1250 | | | | |

Horizontal Conductor Spacing Calculator

| | Span Lengths (ft) |
|---|---|
| 1 | 212 |
| 2 | 241 |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |

Min Pin Spacing (in)

20.5

Actual Spacing (in)

30

Edit Pins

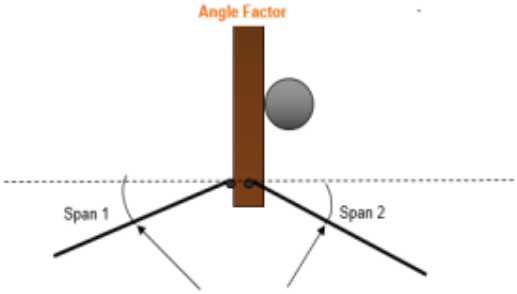
Ruling Span (ft)

227.89

Controlling Span (ft)

241

Set Spans




Enter Max Sag (in)

47.87

Arm Take-Off Angle (°)

0

☑ Autopopulate Input Values Based on Worst Case

# O-Calc® Pro SDG&E Header Page

## Pole Identification: P218563

Report Created: 5/7/2024
File: P218563_2024Rev0.pplx
Latitude:33.1322183 Longitude:-117.06969 Elevation:669

| | |
|---|---|
| Structure ID: | **P218563** |
| Analysis ID: | **"Unset"** |
| Date Data Collected: | **3-21-2024** |
| Business Unit: | **CMP** |
| Requested By: | **Andrew W Kutzner** |
| Fielded By: | **Brian Rowe** |
| Calcs Performed by: | **KMiguel1** |
| Job or Project ID: | **3-702966** |
| QC Reviewer: | **David Saechao** |

| Analysis Performed | |
|---|---|
| Governing Code/Standard: | **GO 95** |
| Governing Loading District: | **Light** |
| Construction Grade: | **A** |
| Load Analysis: | **Detailed** |
| Clearance Analysis: | **Simple** |
| Analysis Desc. (D, E, N, or U): | **E = Existing Construction** |

| Loading Results | | |
|---|---|---|
| Load Case | MCU% | Result |
| GO 95 Light | **99.0** | **Pass** |
| SDG&E Known Local Wind <=3000ft 65 MPH | **61.2** | **Pass** |

| Clearance Results | |
|---|---|
| Are Clearances Compliant | **Yes** |
| Guying/Anchor Results | |
| Are Guys/Anchors Compliant | **Yes** |

ANALYSIS OF EXISTING CONDITIONS
POLE INTRUSIVE INSPECTION PERFORMED 04-17-2024.
100% POLE STRENGTH REMAINING.

TOP ARM FAILS DUE TO OVER CAPACITY.

POLE MODELED AS 50'-1 PER POLE TAG.

PRIMARY SPANS (S) MODELED WITH REDUCED TENSION DUE TO DEAD ENDING ON PIN INSULATORS.

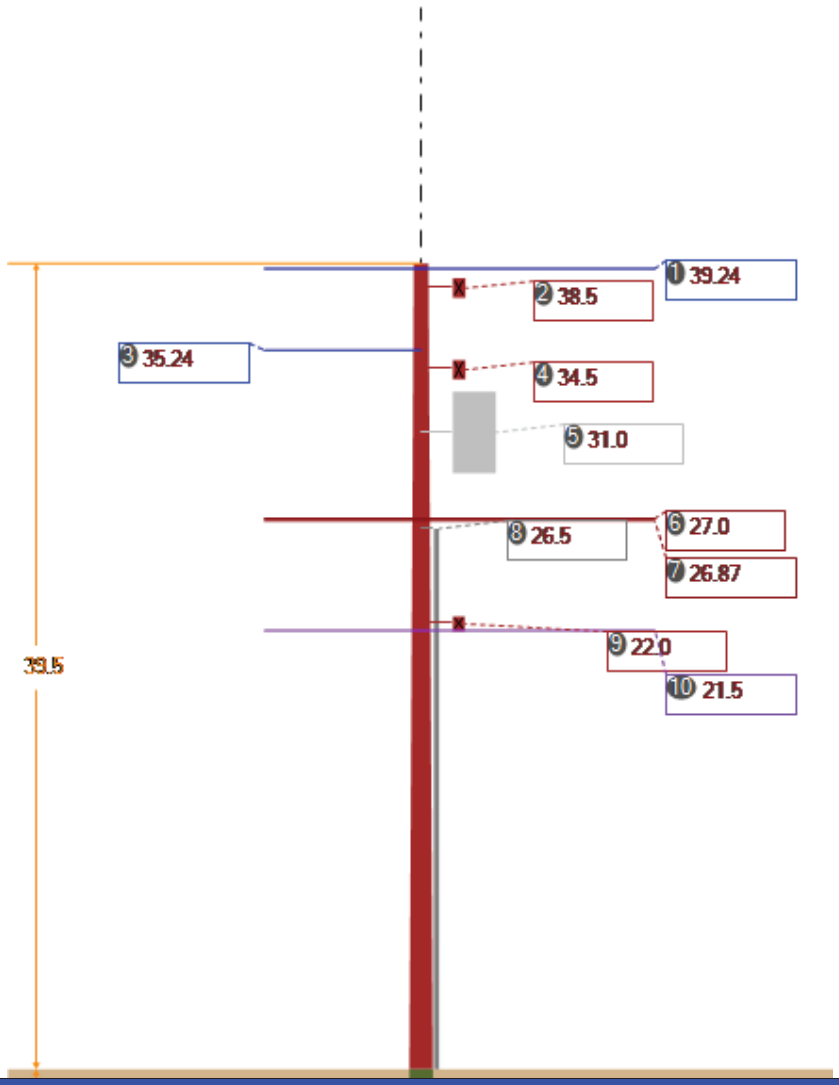
SECONDARY & CMM SPANS (S) MODELED WITH REDUCED TENSION DUE TO VISUAL SLACK IN WIRES.

# O-Calc® Pro Schematic View

## Pole Identification: P218563

Report Created: 5/7/2024

File: P218563_2024Rev0.pplx




**1 - 39.24**

Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)
Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK)

**2 - 38.5**

Normal 10ft H:38.5

**3 - 35.24**

Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE)
Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE)
Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE)

**4 - 34.5**

Normal 10ft H:34.5

5 - 31.0

Transformer 1PH-75KVA H:31.0

6 - 27.0

Secondary 55° 212.0 0.980" (SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA)
Secondary 235° 241.0 0.980" (SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA)

7 - 26.87

Secondary 180° 90.0 1.168" (RTS Triplex 3/0 AWG - AWAC 2 MESS)
Service 353° 38.0 0.980" (SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA)

8 - 26.5

5" Riser x 26.5' 235.0° H:26.5

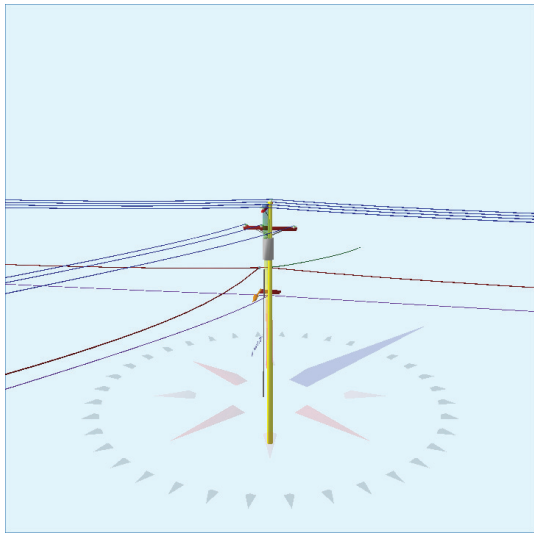
9 - 22.0

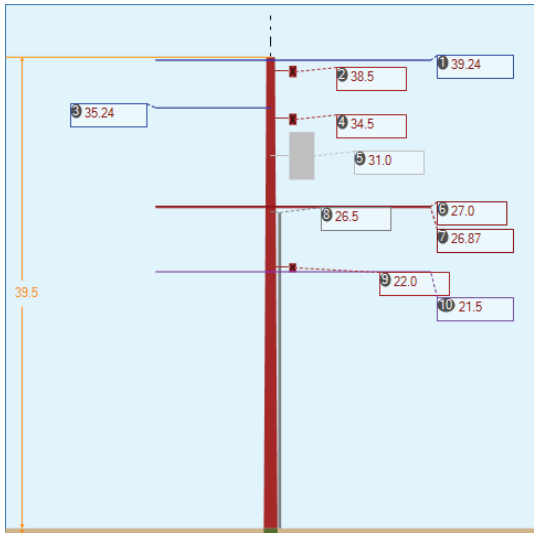
Normal 4ft H:22.0

10 - 21.5

CATV 55° 212.0 0.810" (0.50IN CATV + 6.6M STRAND)
CATV 180° 90.0 0.810" (0.50IN CATV + 6.6M STRAND)
CATV 235° 241.0 0.810" (0.50IN CATV + 6.6M STRAND)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Pole Num: | **P218563** | Pole Length / Class: | **50 / 1** | Code: | **GO 95** | Structure Type: | **Unguyed Tangent** |
| Analysis ID | **Unset** | Species: | **DOUGLAS FIR** | GO 95 Rule: | **At Replace (Existing)** | Pole Strength Factor: | **0.38** |
| Date Data Collected | **3-21-2024** | Setting Depth (ft): | **10.5** | Construction Grade: | **A** | Transverse Wind LF: | **1.00** |
| Business Unit | **CMP** | G/L Circumference (in): | **43.16** | Loading District: | **Light** | Wire Tension LF: | **1.00** |
| Requested By | **Andrew W Kutzner** | G/L Fiber Stress (psi): | **7,600** | Ice Thickness (in): | **0.00** | Vertical LF: | **1.00** |
| Job or Project ID | **3-702966** | Allowable Stress (psi): | **2,779** | Wind Speed (mph): | **56.01** | Pole Factor of Safety: | **2.69** |
| Analysis Desc. (D, E, N, or U) | **E** | Fiber Stress Ht. Reduc: | **No** | Wind Pressure (psf): | **8.03** | Vertical Factor of Safety: | **17.78** |
| Latitude: | **33.132218** | Longitude: | **-117.06969** | Elevation: | **669'** | Bending Factor of Safety: | **2.72** |






| Pole Capacity Utilization (%) Crossarm allowance 300 lbs | | Height (ft) | Wind Angle (deg) |
|---|---|---|---|
| Maximum | **99.0** | 0.0 | 145.6 |
| Groundline | **99.0** | 0.0 | 145.6 |
| Vertical | **15.0** | 27.6 | 145.6 |

| Pole Moments (ft-lb) Crossarm allowance 300 lbs | | Load Angle (deg) | Wind Angle (deg) |
|---|---|---|---|
| Max Cap Util | **57,844** | 152.0 | 145.6 |
| Groundline | **57,844** | 152.0 | 145.6 |
| GL Allowable | **58,955** | | |

**Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 152.0°**

| | Shear Load* (lbs) | Applied Load (%) | Bending Moment (ft-lb) | Applied Moment (%) | Pole Capacity (%) | Bending Stress (+/- psi) | Vertical Load (lbs) | Vertical Stress (psi) | Total Stress (psi) | Pole Capacity (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Powers | 1,013 | 55.5 | **36,961** | 63.9 | **62.7** | **1,741** | 895 | 6 | **1,747** | **62.8** |
| Comms | 217 | 11.9 | **4,700** | 8.1 | **8.0** | **221** | 58 | 0 | **222** | **8.0** |
| PowerEquipments | 67 | 3.7 | **3,639** | 6.3 | **6.2** | **171** | 795 | 5 | **177** | **6.4** |
| Pole | 293 | 16.1 | **5,803** | 10.0 | **9.8** | **273** | 1,640 | 11 | **284** | **10.2** |
| Crossarms | 163 | 8.9 | **5,143** | 8.9 | **8.7** | **242** | 172 | 1 | **243** | **8.8** |
| Risers | 53 | 2.9 | **941** | 1.6 | **1.6** | **44** | 40 | 0 | **45** | **1.6** |
| Insulators | 18 | 1.0 | **656** | 1.1 | **1.1** | **31** | 27 | 0 | **31** | **1.1** |
| Pole Load | 1,823 | 100.0 | **57,844** | 100.0 | **98.1** | **2,724** | 3,627 | 24 | **2,748** | **98.9** |
| Pole Reserve Capacity | | | **1,111** | | **1.9** | **55** | | | **31** | **1.1** |

**Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 152.0°**

| | Shear Load* (lbs) | Applied Load (%) | Bending Moment (ft-lb) | Applied Moment (%) | Pole Capacity (%) | Bending Stress (+/- psi) | Vertical Load (lbs) | Vertical Stress (psi) | Total Stress (psi) | Pole Capacity (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | 1,313 | 72.0 | **47,340** | 81.8 | **80.3** | **2,229** | 1,923 | 13 | **2,242** | **80.7** |
| CATV | 217 | 11.9 | **4,701** | 8.1 | **8.0** | **221** | 63 | 0 | **222** | **8.0** |
| Pole | 293 | 16.1 | **5,803** | 10.0 | **9.8** | **273** | 1,640 | 11 | **284** | **10.2** |
| **Totals:** | 1,823 | 100.0 | **57,844** | 100.0 | **98.1** | **2,724** | 3,627 | 24 | **2,748** | **98.9** |

**Detailed Load Components:**

| Power | | Owner | Height (ft) | Horiz. Offset (in) | Cable Diameter (in) | Sag at Max Temp (ft) | Cable Weight (lbs/ft) | Lead/Span Length (ft) | Span Angle (deg) | Wire Length (ft) | Tension (lbs) | Tension Moment* (ft-lb) | Offset Moment* (ft-lb) | Wind Moment* (ft-lb) | Moment at GL* (ft-lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 55.35 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,315 | 399 | 2,705 | -11,211 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 55.35 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,315 | 454 | 3,075 | 17,844 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 55.35 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,315 | -388 | 2,705 | -11,999 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 55.35 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,315 | -442 | 3,075 | 16,949 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 19.05 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,315 | 134 | 2,705 | -11,476 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 19.05 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,315 | 153 | 3,075 | 17,543 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 19.05 | 0.9770 | 3.34 | 0.816 | 212.0 | 55.0 | 212.0 | 3,000 | -14,315 | -123 | 2,705 | -11,734 |
| Primary | ACSR 636.0 KCM 24/7 ROOK | SDG&E | 39.24 | 19.05 | 0.9770 | 3.99 | 0.816 | 241.0 | 235.0 | 241.1 | 3,000 | 14,315 | -140 | 3,075 | 17,250 |
| Primary | COPPER 4 AWG 3 STRAND BARE | SDG&E | 35.24 | 19.14 | 0.2540 | 1.86 | 0.128 | 90.0 | 180.0 | 90.1 | 100 | 3,115 | 4 | 72 | 3,191 |
| Primary | COPPER 4 AWG 3 STRAND BARE | SDG&E | 35.24 | 55.38 | 0.2540 | 1.86 | 0.128 | 90.0 | 180.0 | 90.1 | 100 | 3,115 | 6 | 72 | 3,193 |
| Primary | COPPER 4 AWG 3 STRAND BARE | SDG&E | 35.24 | 55.38 | 0.2540 | 1.86 | 0.128 | 90.0 | 180.0 | 90.1 | 100 | 3,115 | 0 | 72 | 3,186 |
| Secondary | SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA | SDG&E | 27.00 | 7.36 | 0.9800 | 3.99 | 0.419 | 212.0 | 55.0 | 212.1 | 1,328 | -4,356 | 27 | 1,865 | -2,464 |
| Secondary | SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA | SDG&E | 27.00 | 7.36 | 0.9800 | 4.69 | 0.419 | 241.0 | 235.0 | 241.1 | 1,328 | 4,356 | 31 | 2,120 | 6,507 |
| Secondary | RTS Triplex 3/0 AWG - AWAC 2 MESS | SDG&E | 26.87 | 25.10 | 1.1680 | 6.38 | 0.605 | 90.0 | 180.0 | 91.5 | 100 | 2,355 | 5 | 249 | 2,609 |
| Service | SSC AL 1/0 AWG Triplex - 1/0 AWG MESS - NERITINA | SDG&E | 26.87 | 25.10 | 0.9800 | 1.03 | 0.419 | 38.0 | 353.0 | 38.1 | 100 | -2,482 | 3 | 55 | -2,425 |
| | | | | | | | | | | | **Totals:** | **9,217** | **122** | **27,622** | **36,961** |

| **Comm** | | **Owner** | **Height (ft)** | **Horiz. Offset (in)** | **Cable Diameter (in)** | **Sag at Max Temp (ft)** | **Cable Weight (lbs/ft)** | **Lead/Span Length (ft)** | **Span Angle (deg)** | **Wire Length (ft)** | **Tension (lbs)** | **Tension Moment* (ft-lb)** | **Offset Moment* (ft-lb)** | **Wind Moment* (ft-lb)** | **Moment at GL* (ft-lb)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATV | 0.50IN CATV + 6.6M STRAND | CATV | 21.50 | 7.97 | 0.8100 | 2.22 | 0.214 | 212.0 | 55.0 | 212.0 | 2,195 | -5,732 | 15 | 1,227 | -4,489 |
| CATV | 0.50IN CATV + 6.6M STRAND | CATV | 21.50 | 7.97 | 0.8100 | 2.49 | 0.214 | 90.0 | 180.0 | 90.2 | 100 | 1,900 | 6 | 139 | 2,046 |
| CATV | 0.50IN CATV + 6.6M STRAND | CATV | 21.50 | 7.97 | 0.8100 | 2.58 | 0.214 | 241.0 | 235.0 | 241.0 | 2,195 | 5,732 | 17 | 1,395 | 7,144 |
| | | | | | | | | | | | **Totals:** | **1,900** | **38** | **2,762** | **4,700** |

| **PowerEquipment** | | **Owner** | **Height (ft)** | **Horiz. Offset (in)** | **Offset Angle (deg)** | **Rotate Angle (deg)** | **Unit Weight (lbs)** | **Unit Height (in)** | **Unit Depth (in)** | **Unit Diameter (in)** | **Unit Length (in)** | **Offset Moment* (ft-lb)** | **Wind Moment* (ft-lb)** | **Moment at GL* (ft-lb)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Transformer | 1PH-75KVA | SDG&E | 31.00 | 23.52 | 145.0 | 145.0 | 795.00 | 48.00 | -- | 25.33 | -- | 1,548 | 2,091 | 3,639 |
| | | | | | | | | | | | **Totals:** | **1,548** | **2,091** | **3,639** |

| **Crossarm** | | **Owner** | **Height (ft)** | **Horiz. Offset (in)** | **Offset Angle (deg)** | **Rotate Angle (deg)** | **Unit Weight (lbs)** | **Unit Height (in)** | **Unit Depth (in)** | **Unit Length (in)** | **Offset Moment* (ft-lb)** | **Wind Moment* (ft-lb)** | **Moment at GL* (ft-lb)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Normal | Wood 4 Pin 10ft 3.8in x 5.8in | SDG&E | 38.50 | -6.24 | 55.0 | 55.0 | 48.00 | 5.75 | 3.75 | 120.00 | 3 | 77 | 80 |
| Normal | Double Wood 4 Pin 10ft 3.8in x 5.8in | SDG&E | 34.50 | 6.50 | 145.0 | 145.0 | 48.00 | 5.75 | 3.75 | 120.00 | 0 | 4,221 | 4,221 |
| Normal | Wood Guard Arm 4ft 3.5in x 4.5in | SDG&E | 22.00 | 7.19 | 145.0 | 145.0 | 14.00 | 4.50 | 3.50 | 48.00 | 0 | 843 | 843 |
| | | | | | | | | | | **Totals:** | **3** | **5,140** | **5,143** |

| Riser | | Owner | Height (ft) | Horiz. Offset (in) | Offset Angle (deg) | Rotate Angle (deg) | Unit Weight (lbs) | Unit Height (in) | Unit Depth (in) | Unit Diameter (in) | Unit Length (in) | Offset Moment* (ft-lb) | Wind Moment* (ft-lb) | Moment at GL* (ft-lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5" Riser x 26.5' 235.0° H:26.5 | 5" Riser x 26.5' | SDG&E | 26.50 | 7.29 | 235.0 | 235.0 | 39.75 | 318.00 | 3.00 | 3.00 | 318.00 | 6 | 935 | 941 |
| | | | | | | | | | | | **Totals:** | **6** | **935** | **941** |

| Insulator | | Owner | Height (ft) | Horiz. Offset (in) | Offset Angle (deg) | Rotate Angle (deg) | Unit Weight (lbs) | Unit Diameter (in) | Unit Length (in) | Offset Moment* (ft-lb) | Wind Moment* (ft-lb) | Moment at GL* (ft-lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 38.74 | 55.00 | 151.5 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 38.74 | -55.00 | 318.5 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 38.74 | 18.00 | 164.1 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 38.74 | -18.00 | 305.9 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 97 | 97 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 34.74 | 18.00 | 215.2 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 87 | 87 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 34.74 | 55.00 | 228.3 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 87 | 87 |
| Pin | Pin - Phase/Neutral - 12KV | SDG&E | 34.74 | -55.00 | 61.7 | 0.0 | 3.00 | 7.50 | 6.00 | 0 | 87 | 87 |
| Spool | Spool Insulator - 20 kV | SDG&E | 27.00 | 0.00 | 145.0 | 235.0 | 1.00 | 2.50 | 2.12 | 0 | 8 | 8 |
| Bolt | Three Bolt | CATV | 21.50 | 0.00 | 145.0 | 55.0 | 5.00 | 3.00 | 0.10 | 0 | 0 | 0 |
| | | | | | | | | | **Totals:** | **0** | **656** | **656** |

## Pole Buckling

| Buckling Constant | Buckling Column Height* (ft) | Buckling Section Height (% Buckling Col. Hgt.) | Buckling Section Diameter (in) | Minimum Buckling Diameter at GL (in) | Diameter at Tip (in) | Diameter at GL (in) | Modulus of Elasticity (psi) | Pole Density (pcf) | Ice Density (pcf) | Pole Tip Height (ft) | Buckling Load Capacity at Height (lbs) | Buckling Load Applied at Height (lbs) | Buckling Load Factor of Safety |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 27.58 | 33.92 | 12.52 | 8.58 | 8.60 | 13.74 | 2.38e+6 | 60.00 | 57.00 | 39.50 | 23,842 | **241.78** | **6.67** |

**Notes**

| Date | Author | Description |
|---|---|---|
| 4/3/2024 | SDG&E | SDGE Summary Note |

ANALYSIS OF EXISTING CONDITIONS
POLE INTRUSIVE INSPECTION PERFORMED 04-17-2024.
100% POLE STRENGTH REMAINING.

TOP ARM FAILS DUE TO OVER CAPACITY.

POLE MODELED AS 50'-1 PER POLE TAG.

PRIMARY SPANS (S) MODELED WITH REDUCED TENSION DUE TO DEAD ENDING ON PIN INSULATORS.

SECONDARY & CMM SPANS (S) MODELED WITH REDUCED TENSION DUE TO VISUAL SLACK IN WIRES.

| | | |
|---|---|---|
| 05/02/2024 | dsaechao | SDG&E Clearance Analysis - Simple - urban |

Clearance Analysis Form - Simple

Ref. General Order 95, Section III, Table 2

Vertical Clearances at Pole
Power to Ground (25 ft) 26.9'
Neutral to Power (48 in)
Power to Power (48 in) 98"
Power to Comm (48 in) 64"
Comm to Ground (18 ft) 21.5'

Yes

# O-Calc® Pro Crossarm Analysis

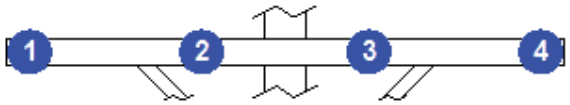
Pole Identification: P218563

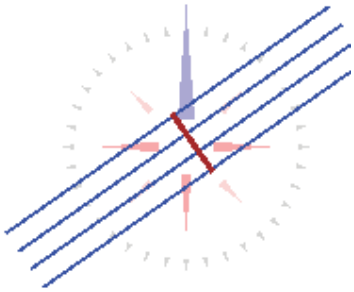
Report Created: 5/7/2024

File: P218563_2024Rev0.pplx

| Status Summary by Crossarm | |
|---|---|
| Wood 4 Pin 10ft 3.8in x 5.8in @ 38.5' | Connection Over Capacity |
| Double Wood 4 Pin 10ft 3.8in x 5.8in @ 34.5' | Adequate |
| Wood Guard Arm 4ft 3.5in x 4.5in @ 22.0' | Adequate |

## *Wood 4 Pin 10ft 3.8in x 5.8in @ 38.5'*



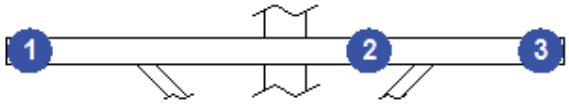



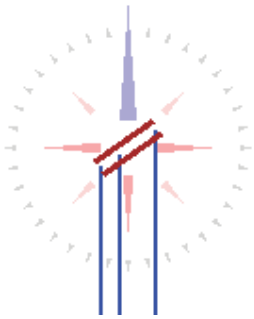
| | | | | |
|---|---|---|---|---|
| Worst LoadCase: | Wood - SDG&E Grade A - Known Local Wind <=3000 ft - At Replacement | | |
| Worst Wind Angle for Crossarm: | 126.3 degrees | | |
| Analysis Method Applied: | Superposition | | |
| | Modulus of Rupt | Strength Factor | Allowable Stress |
| Allowable Capacity: | 8000.0 psi | X 0.50 | = 4000.0 psi |
| Arm Actual Stress: | 1503.3 psi | Result: | 0.38 |
| | Vertical | Longitudinal | Transverse |
| Moment Capacity: | 6888.0 ft-lbs | 4492.2 ft-lbs | N/A |
| Moment in Arm: | 2405.2 ft-lbs | 79.5 ft-lbs | N/A |
| Allowable Connection Load: | 898.4 lbs | 898.4 lbs | 898.4 lbs |
| Load on Connection: | 799.3 lbs | 30.9 lbs | 771.1 lbs |
| Connection Interaction: | 1.27 | | |

| | | | | |
|---|---|---|---|---|
| 1 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 187.8 lbs | 1.9 lbs | 145.3 lbs |
| | Moment at Insul Base: | N/A | 1.0 ft-lbs | 72.7 ft-lbs |
| | Span | Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |
| | | Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |
| 2 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 187.8 lbs | 1.9 lbs | 145.3 lbs |
| | Moment at Insul Base: | N/A | 1.0 ft-lbs | 72.7 ft-lbs |
| | Span | Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |
| | | Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |

| | | | | |
|---|---|---|---|---|
| 3 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 187.8 lbs | 1.9 lbs | 145.3 lbs |
| | Moment at Insul Base: | N/A | 1.0 ft-lbs | 72.7 ft-lbs |
| | Span | Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |
| | | Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |
| 4 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 187.8 lbs | 1.9 lbs | 145.3 lbs |
| | Moment at Insul Base: | N/A | 1.0 ft-lbs | 72.7 ft-lbs |
| | Span | Primary 55° 212.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |
| | | Primary 235° 241.0 0.977" (ACSR 636.0 KCM 24/7 ROOK) | | |

## *Double Wood 4 Pin 10ft 3.8in x 5.8in @ 34.5'*



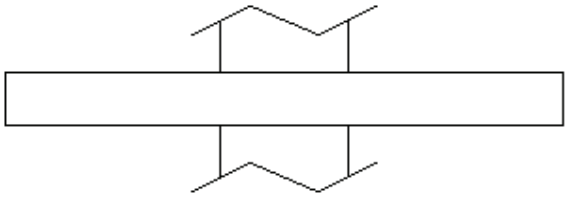



| | | | |
|---|---|---|---|
| Worst LoadCase: | Wood - SDG&E Grade A - Known Local Wind <=3000 ft - At Replacement | | |
| Worst Wind Angle for Crossarm: | 150.5 degrees | | |
| Analysis Method Applied: | Superposition | | |
| | Modulus of Rupt | Strength Factor | Allowable Stress |
| Allowable Capacity: | 8000.0 psi | X 0.50 | = 4000.0 psi |
| Arm Actual Stress: | 401.8 psi | Result: | 0.10 |
| | Vertical | Longitudinal | Transverse |
| Moment Capacity: | 13776.0 ft-lbs | 17968.8 ft-lbs | N/A |
| Moment in Arm: | 333.2 ft-lbs | 1353.3 ft-lbs | N/A |
| Allowable Connection Load: | 2755.2 lbs | 3593.8 lbs | 2755.2 lbs |
| Load on Connection: | 122.2 lbs | 429.6 lbs | 161.1 lbs |
| Connection Interaction: | 0.07 | | |

| | | | | |
|---|---|---|---|---|
| 1 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 8.7 lbs | 81.6 lbs | 51.9 lbs |
| | Moment at Insul Base: | N/A | 40.8 ft-lbs | 25.9 ft-lbs |
| | Span | Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE) | | |
| 2 | Pin - Phase/Neutral - 12KV | | | |
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 8.7 lbs | 81.6 lbs | 51.9 lbs |
| | Moment at Insul Base: | N/A | 40.8 ft-lbs | 25.9 ft-lbs |
| | Span | Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE) | | |

| 3 | Pin - Phase/Neutral - 12KV | | | |
|---|---|---|---|---|
| | | Vertical | Longitudinal | Transverse |
| | Load at Insulator Base: | 8.7 lbs | 81.6 lbs | 51.9 lbs |
| | Moment at Insul Base: | N/A | 40.8 ft-lbs | 25.9 ft-lbs |
| | Span | Primary 180° 90.0 0.254" (COPPER 4 AWG 3 STRAND BARE) | | |

## *Wood Guard Arm 4ft 3.5in x 4.5in @ 22.0'*



| | | | |
|---|---|---|---|
| Worst LoadCase: | Wood - SDG&E Grade A - Known Local Wind <=3000 ft - At Replacement | | |
| Worst Wind Angle for Crossarm: | 324.8 degrees | | |
| Analysis Method Applied: | Superposition | | |
| | Modulus of Rupt | Strength Factor | Allowable Stress |
| Allowable Capacity: | 8000.0 psi | X 0.50 | = 4000.0 psi |
| Arm Actual Stress: | 31.2 psi | Result: | 0.01 |
| | Vertical | Longitudinal | Transverse |
| Moment Capacity: | 7875.0 ft-lbs | 12250.0 ft-lbs | N/A |
| Moment in Arm: | 28.0 ft-lbs | -51.9 ft-lbs | N/A |
| Allowable Connection Load: | 3937.5 lbs | 6125.0 lbs | 3937.5 lbs |
| Load on Connection: | 28.0 lbs | -51.9 lbs | 0.0 lbs |
| Connection Interaction: | 0.01 | | |