Decision **PROPOSED DECISION OF COMMISSIONER BAKER**
(Mailed 8/14/2026)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Proposed Changes to General Order 95 to Modernize the Rules and Regulations Governing the Design and Construction of Overhead Electric and Communications Facilities in California.	Rulemaking 24-10-005

DECISION ADOPTING GENERAL ORDER 95 MODIFYING METHODOLOGY TO LOAD AND RESISTANCE FACTOR DESIGN

TABLE OF CONTENTS

Title **Page**

DECISION ADOPTING GENERAL ORDER 95 MODIFYING METHODOLOGY TO LOAD AND RESISTANCE FACTOR DESIGN 1
Summary 2
1. Background 3
   1.1. Procedural Background 3
   1.2. Submission Date 5
2. Issues Before the Commission 5
3. Shifting General Order 95 Methodology to Load and Resistance Factor Design 6
4. Complicated Load and Resistance Factor Design-related Revisions in General Order 95 13
   4.1. Revision to Rule 12.2 – Maintenance of Lines 14
   4.2. Revision to Rule 12.3 – Lines Constructed Prior to this Order 14
   4.3. Revision to Rule 44.2 – Additional Construction 20
   4.4. Revision to Rule 48 – Strength of Materials 21
5. Uncontested Load and Resistance Factor Design-related Revisions in General Order 95 23
   5.1. Revision to Rule 12.1-C – Construction and Reconstruction of Lines 23
   5.2. Revision to Rule 34-G – Foreign Attachments 24
   5.3. Revision to Rule 43.1-C – Temperature 24
   5.4. Revision to Rule 43.2-C – Temperature 25
   5.5. Revision to Rule 44 – Safety Factors 25
   5.6. Revision to Rule 44.1 – Installation and Reconstruction 27
   5.7. Revision to Rule 44.3 – Replacement 28
   5.8. Revision to Rule 45 – Transverse Strength Requirements 28
   5.9. Revision to Rule 46 – Vertical Strength Requirements 28
   5.10. Revision to Rule 47 – Longitudinal Strength Requirements 28
   5.11. Revision to Rule 47.1 – Use of Guys and Braces 29
   5.12. Revision to Rule 47.2 – Change in Grade of Construction 29
   5.13. Revision to Rule 47.3 – End Supports in Grades "A" or "B" Construction 29
   5.14. Revision to Rule 48.1 – Wood 30

5.15. Revision to Rule 48.2 – Steel 30
5.16. Revision to Rule 48.3 – Concrete 31
5.17. Revision to Rule 48.4 – Fiber-Reinforced Polymer 31
5.18. Revision to Rule 48.5 – Other Engineered Materials 31
5.19. Revision to Rule 48.6 – Conductors, Span Wires, Guys and Messengers 31
5.20. Revision to Rule 48.7 – Tower or Pole Foundations and Footings 32
5.21. Revision to Rule 49.2-C – Crossarms (Strength) 32
5.22. Revision to Rule 49.3-C – Pins and Conductor Fastenings (Strength) 32
5.23. Revision to Rule 49.4-B – Conductors (Size) 33
5.24. Revision to Rule 49.4 – Table 8 (Minimum Conductor Sizes) 33
5.25. Revision to Rule 49.5 – Insulators 33
5.26. Revision to Rule 49.6-B – Guys and Anchors (Size) 33
5.27. Revision to Rule 49.7 – Messengers and Span Wires 34
5.28. Revision to Rule 54.5 – Sags 34
5.29. Revision to Rule 56.2 – Overhead Guys, Anchor Guys, and Span Wires 34
5.30. Revision to Rule 57.2 – Messengers and Insulated Cables 35
5.31. Revision to Rule 66.2 – Guys 35
5.32. Revision to Rule 77.3-B – Material and Strength 36
5.33. Revision to Rule 81.3 – Material and Strength 36
5.34. Revision to Rule 84.5 – Sags 36
5.35. Revision to Rule 86.2 – Use 37
5.36. Revision to Rule 87.2 – Use of Messenger 37
5.37. Revision to Rule 87.5 – Fastenings 37
5.38. Revision to Rule 94.3 – General Requirements 38
5.39. Revision to Appendix B – Mechanical/Loading Data for Conductors 38
5.40. Revision to Appendix C – Conductor Sags 38
5.41. Revision to Appendix F – Typical Problems 38
6. Need for Safety Impact Assessment 39
7. Summary of Public Comment 39
8. Procedural Matters 40
9. Comments on Proposed Decision 40
10. Assignment of Proceeding 43

Findings of Fact 43
Conclusions of Law 43
ORDER 45

Attachment A – General Order 95 Revisions (Redlined)
Attachment B – General Order 95 Revisions

DECISION ADOPTING GENERAL ORDER 95 MODIFYING METHODOLOGY TO LOAD AND RESISTANCE FACTOR DESIGN

Summary

General Order (GO) 95 provides rules governing the design, construction, and maintenance of overhead lines for electric and communications facilities in California. This decision (a) modifies GO 95 to adopt a new methodology based on Load and Resistance Factor Design (LRFD) in place of Working Stress Design (WSD), (b) revises GO 95 language accordingly,[1] and (c) requires utilities to participate in a workshop and write a subsequent workshop report.

LRFD and WSD are methodologies used to design overhead lines. LRFD uniquely provides the opportunity to isolate factors, such as wind, for a more customized design of overhead lines for safety outcomes, compared to WSD. The decision's implementation of LRFD is targeted to be algebraically equivalent to the current WSD methodology. The GO 95 LRFD-specific revisions adopted today are reflected as a final version of revisions to GO 95 in Attachment B and a redlined version of revisions to GO 95 in Attachment A. The regulations adopted in this decision go into effect January 1, 2028.

This proceeding is closed.

[1] LRFD uses two prescribed factors (a load factor and a strength factor) whereas WSD, uses one factor (a safety factor) to design structures. Since LRFD uses two factors, LRFD is more customizable, therefore (theoretically) can be customized to achieve more consistent safety outcomes compared to WSD. Since the implementation of LRFD adopted by this decision is algebraically equivalent to the existing WSD methodology, LRFD's customizable benefit is not yet realized.

1. Background

1.1. Procedural Background

On March 18, 2024, Southern California Edison Company (SCE), on behalf of the Rules Committee of General Order (GO) 95 and GO 128 (GO 95/128 Rules Committee), filed Petition 24-03-014 (Petition) to adopt, amend, or repeal a regulation pursuant to Public Utilities Code (Pub. Util. Code) Section 1708.5. The petition requested that the Commission consider updating the rules and regulations in GO 95, regarding the design and construction of overhead electric and communications facilities in California, through the incorporation of Load and Resistance Factor Design (LRFD), one of the engineering methodologies currently taught in engineering schools and adopted and applied throughout the United States (US) and North America.[2] The GO 95/128 Rules Committee conferred with the Commission's Safety and Enforcement Division's (SED) Electric Safety and Reliability Branch (ESRB) regarding their proposed rule changes.[3]

Parties filed timely responses to the petition, including California Municipal Utilities Association (CMUA), the Public Advocates Office at the California Public Utilities Commission (Cal Advocates), and SED. On October 17, 2024, the Commission opened this rulemaking to consider proposed changes to GO 95 to update the rules and regulations governing the design and construction of overhead electric and communications facilities in California. The Order Instituting Rulemaking (OIR) directed an investor-owned utility (IOU) led party

[2] Petition at 1.

[3] Petition at 6.

workshop, a subsequent joint party meeting report, and comments to the report. By November 22, 2024, the following parties filed opening comments to the OIR: Bear Valley Electric Service, Inc. (BVES); Cal Advocates; the California Broadband & Video Association (CalBroadband); the Coalition of California Utility Employees (CUE); Crown Castle Fiber LLC (Crown Castle); Liberty Utilities, LLC (Liberty), and PacifiCorp d/b/a Pacific Power (PacifiCorp) (jointly, the California Association of Small and Multi-Jurisdictional Utilities (CASMU); Pacific Bell Telephone Company (AT&T), Frontier California Inc., Citizens Telecommunications Company of California, Inc., and Frontier Communications of the Southwest Inc. (Frontier) (jointly AT&T/Frontier); Pacific Gas and Electric Company (PG&E); San Diego Gas & Electric Company (SDG&E); SCE; SED; the Small Local Exchange Carriers (Small LECs);[4] and Sonic Telecom, LLC. On December 9, 2024, the following parties filed reply comments on the OIR: CalBroadband, PG&E, SCE, SDG&E, and SED.

On January 8, 2025, PG&E, SCE, and SDG&E (Joint IOUs) held a party workshop. On January 17, 2025, SCE, on behalf of the Joint IOUs, filed the joint party meeting report. On February 6, 2025, SCE and SDG&E jointly filed comments on the meeting report. On February 18, 2025, PG&E and SED filed reply comments on the meeting report. On February 11, 2025, CMUA filed a motion for party status. On February 12, 2025, the motion was granted.

[4] The Small LECs consist of Cal-Ore Telephone Company, Calaveras Telephone Company, Ducor Telephone Company, Foresthill Telephone Company, Happy Valley Telephone Company, Hornitos Telephone Company, Kerman Telephone Company, Pinnacles Telephone Company, The Ponderosa Telephone Company, Sierra Telephone Company, Inc., The Siskiyou Telephone Company, Volcano Telephone Company, and Winterhaven Telephone Company.

On April 14, 2025, the assigned Commissioner issued the Scoping Memo and Ruling (Scoping Memo).

On June 23, 2025, an Administrative Law Judge (ALJ) ruling granted party status to Sacramento Municipal Utility District (SMUD).

The Commission's Safety and Policy Division (SPD) facilitated five workshops from May through October 2025 to discuss the GO 95/128 Rule Committee's proposed revisions to GO 95 and additional issues, such as retroactivity of load and strength factors.

SCE, on behalf of SCE, SDG&E, AT&T, and PG&E (Joint Parties), filed a timely Workshop Report to SPD.

On December 17, 2025, the ALJ issued a ruling with the workshop report (Workshop Report), appendices, and supplemental questions for comment. On January 16, 2026, opening comments to the Workshop Report were filed by CMUA, Crown Castle Fiber, SED, and Joint Parties. On February 17, 2026, reply comments to the Workshop Report were filed by CASMU, Joint Parties, and SED.

1.2. Submission Date

This matter was submitted on February 17, 2026, upon reply comments to the Workshop Report.

2. Issues Before the Commission

The issues to be determined or otherwise considered are:

1. Whether the Commission should revise GO 95 to replace the Working Stress Design methodology with the LRFD methodology.
2. If the LRFD methodology is adopted, what related revisions in GO 95 should be made to incorporate LRFD methodology for seamless use? This may include defining

load factors and strength factors to replace the existing safety factors associated with the Working Stress Design methodology.

3. Should the Commission create a process, including a framework, testing, or other means, to assess the safety impacts of the LRFD Load and Strength Factors? This may include a statistical framework to compare in-field performance against theoretical, statistically targeted, safety performance of the Load and Strength Factors.

3. Shifting General Order 95 Methodology to Load and Resistance Factor Design

GO 95 provides rules governing the design, construction, and maintenance of overhead lines for electric and communications facilities in California, to ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general. Among other things, GO 95 prescribes criteria on how to calculate the design loads, the strength of elements and the safety factor for different element types of overhead lines. The interrelationship between the criteria can result in overhead line elements being constructed to different strengths and costs. For example, a larger safety factor will increase the required strength of a pole at a higher cost.

The current GO 95 relies on the concepts from the engineering methodology, Working Stress Design (WSD),[5] for the design of overhead line elements, such as poles. Load effects from the design loads are the effects of forces from gravity or wind on the element. These load effects from the design

[5] This has also been referred to as Allowable Stress Design or ASD.

loads on the element must be less than the resistance (or strength) of the element divided by one prescribed factor, which is the safety factor:

$$Load\ Effect\ from\ Design\ Loads \leq \frac{Resistance\ of\ Element}{Safety\ Factor}$$

GO 95 Appendix F includes examples of how to implement different design criteria using WSD.

LFRD is a different engineering methodology adopted and applied to overhead lines. The application of LRFD in the National Electric Safety Code (NESC) is the standard applicable to design electric and communications overhead lines; LRFD has been adopted throughout North America and by the majority of states in the US.[6] In 2007, the NESC replaced WSD methodology with LRFD methodology. The implementation of design methodologies is dictated by design codes like GO 95 and the NESC, which may result in some variation. LRFD uses two prescribed factors (*i.e.*, a load factor and a resistance/strength factor) to be individually applied to the load effect and strength of poles and other overhead line elements, rather than the one prescribed factor of WSD. At a high level, the load factors in LRFD are used to describe the variability in different loads whereas the strength factor is used to describe the variability in strengths of materials.[7] LRFD can be expressed mathematically as follows, where *n* is equal to the total number of loads types contributing to the sum of the individual load effects:

[6] Petition at 4.

[7] Appendix A of Petition at 3.

$$\sum_{i=1}^{n} Load\ Factor_i * Load\ Effect\ from\ Design\ Load_i \leq Strength\ Factor\ \ * Resistance\ of\ Elemen$$

The key difference between LRFD and WSD is the methodologies' ability to control "structural reliability." LRFD uses two types of prescribed factors (load and strength) whereas WSD uses one prescribed factor (safety) to design overhead line elements.[8] The two prescribed factors in LRFD are treated separately,[9] which allows for a more customized design regarding safety and structural reliability compared to WSD.[10]

The effect of the additional factors using WSD and LRFD can be illustrated in a hypothetical case study in which the wind load is expected to increase.[11] A case study could propose increasing the safety factor by 50 percent to account for greater variation in wind loads in the future. When applying WSD, which uses a safety factor, the load effects due to the weight of conductors would also increase by 50 percent. If the increase in load effect due to the weight of conductors is large, the case study's proposal could result in a larger and more expensive element than is necessary to account for the greater variation in wind loads. When applying LRFD to the case study, only the relevant factor, in this case the load factor for wind force, would increase. The load factor for the weight of conductor could stay the same. As a result, the only increase in element size

[8] Appendix A of Petition at 3.

[9] Appendix A of Petition at 3.

[10] Appendix A of Petition at 3.

[11] This is a simplistic hypothetical meant to demonstrate the difference between LRFD and WSD and should not be construed as a disposition on how the Commission would choose to address the hypothetical issue.

would be due to the wind loads. Both LRFD and WSD can be modified to address the safety issue from this hypothetical case study. The benefit of LRFD is the ability to isolate the factor that may be changed for adequately designed elements.

The petition requests that the Commission consider modernizing GO 95 to update the rules and regulations governing the design and construction of overhead electric and communications facilities in California through the incorporation of LRFD.[12] The GO 95/128 Rules Committee included 21 proposed rule changes designed to incorporate LRFD into GO 95 with the intended purpose of improving the general order's fire-safety, public and worker safety, as well as electric and communications systems reliability. Moreover, the petition included a rationale for why shifting to the LRFD methodology would provide a "more complete understanding of material properties, actual loads, and the ways structures respond to loads."[13] The GO 95/128 Rules Committee indicated that the proposal is a starting point in a transition to using LRFD to improve control of safety outcomes (also known as structural reliability and Reliability-Based Design)[14] and the proposed changes to GO 95 would intentionally maintain identical results at this time.[15] In the Workshop Report, parties agreed upon proposed changes with an identical outcome with the load factor equivalent to 1.5 for all loads, and divided the safety factor by the load factor to get the

[12] Petition at 1.

[13] Petition at 4.

[14] Appendix A of Petition at 2.

[15] Petition at 4.

strength factor.[16] Mathematically, the choice to set the ratio between the load factors and strength factor of LRFD equal to the safety factor of WSD also means the ratio between the minimum required resistance (strength) of an overhead line element and the load effect from the required design loads should continue to be identical. If LRFD is adopted in GO 95 and the Commission decided to make further modifications to GO 95, the mathematical outcomes for projects could shift from today's status quo.[17]

The majority of parties[18] generally support GO 95 shifting to LRFD-based methodology. SCE stated that adopting LRFD in GO 95 "will provide a framework for adopting new and/or improved information on loads, load effects, and strengths and structural behavior, and for identifying the limitations and deficiencies of current data, among other things… all of which should ultimately help California's electric and communication companies produce improved designs for overhead line construction."[19]

Some parties provided considerations before replacing the methodologies, which are discussed below. The petition introduced LRFD-related language on the concept of allowable failures, which SED was concerned might undermine safety and the existing safety standards in Rule 48 on strength of materials.[20] This

---

[16] Workshop Report at 4.

[17] Appendix A of Petition at 2.

[18] OIR opening comments of AT&T, Cal Advocates, CASMU, Crown Castle Fiber, CUE, PG&E, SCE, SDG&E, Small LECs, and Sonic Telecom.

[19] SCE Opening Comments to the OIR at 3.

[20] SED Opening Comments to the OIR at 2.

matter was discussed in the workshop. Ultimately, parties agreed upon revisions to GO 95 that implement LRFD that is algebraically comparable to WSD,[21] which is discussed further under Revision to Rule 48.

The utilities expressed an urgency to implement LRFD, while also needing time to prepare for the transition. CMUA proposed and many utilities supported a one-year transition to LRFD.[22] SED was amendable to a phase in period.[23]

We find that LRFD is a widely accepted engineering methodology applied in the NESC for electric and communications overhead lines in the US. We agree with parties that the purpose of transitioning to LRFD is to support improved control of structural reliability and safety. We find that LRFD with the two prescribed factors for loads and strength, allows for more customizable design than WSD with the single safety factor. We find that LRFD changes to GO 95 in this decision are designed to produce algebraically equivalent results to that of WSD in GO 95. We determine that it is reasonable to adopt the LRFD for GO 95 as a replacement for the WSD.

We agree with parties that it is appropriate to make gradual changes when revising GO 95 to include LRFD. Accordingly, we support the initial approach of setting the load factor so that there are no algebraic changes in this transition from WSD to LRFD. As the Commission considers future modifications to GO 95

[21] Workshop Report Appendix A at 3.

[22] CMUA Opening Comments to the OIR. Workshop Report reply comments of CASMU and Joint Parties.

[23] SED Workshop Report Reply Comments at 2.

and the application of LRFD, there will be opportunity to analyze changes in calculations and impacts.

The revisions to GO 95 in this decision support the transition to LRFD. The revisions that required more complicated discussions by parties are separated in Section 4. Meanwhile, most revisions in this decision update the terminology in GO 95 as is required to transition the methodology from WSD to LRFD in Section 5. For example, a common revision is the replacement of "safety" used for WSD with "load and strength" used for LRFD. Some revisions include uncontested nonsubstantial revisions such as updating nomenclature of the formerly American Society for Testing Materials to ASTM or ASTM International. The GO 95 LRFD-specific revisions adopted today are reflected as a final version of the GO 95 revisions in Attachment B and a redlined version of the GO 95 revisions in Attachment A. GO 95 rules that are not revised in this proceeding are not included in these attachments. We agree with parties that there is an urgency to update the general order and also want to provide utilities time for implementation. The regulations adopted in this decision go into effect January 1, 2028. SED should publish the amended GO 95 set forth in Attachment B to this decision on the Commission's website 30 days before the effective date.

Based on the petition and workshops, we anticipate that members of the GO 95/128 Rules Committee and parties will consider further modifications to GO 95 following this decision adopting LRFD. We agree with SCE that having LRFD in GO 95 provides an opportunity for the utilities to get further information on loads, load effects, strengths, structural behavior, and identifying

gaps in the current data. We find that in a workshop participants may share lessons learned from the initial implementation of LRFD and how GO 95 may be further modified. We direct SPD to host a GO 95 workshop within 24 months of this decision and notice the service list of this proceeding, which includes investor-owned electric utilities and telecommunication corporations, with information on the workshop and materials. The workshop should include, but is not limited to, the following topics:

a. proposed revisions to GO 95 based on the revised Load and Resistance Factor Design methodology,
b. enhanced requirements for potentially obsolete construction configurations (such as wood pins),
c. enhanced requirements for construction configurations (such as covered conductor, fiberglass crossarms) that are becoming more prominent, and
d. updated language streamlining GO 95, eliminating known typographical errors and referencing more modern standards.

AT&T, Frontier, PG&E, SCE, and SDG&E shall participate in the workshop. AT&T, Frontier, PG&E, SCE, and SDG&E shall work with the workshop participants to write a workshop report. PG&E, SCE, and SDG&E shall serve it to Commission staff and the service list of this proceeding 45 days after the workshop.

4. Complicated Load and Resistance Factor Design-related Revisions in General Order 95

This section includes more complicated party discussions on LRFD-related revisions to GO 95. This includes a discussion on retroactivity regarding the applicability of LRFD-related revisions to GO 95 to existing utility assets that

were constructed under the WSD methodology. We adopt the proposed revisions to the GO 95 Rules as described below.

4.1. Revision to Rule 12.2 – Maintenance of Lines

Rule 12.2 provides requirements for the maintenance of lines. Rule 12.2 is referenced in Rule 12.3. Parties discussed revisions to Rule 12.2 and retroactivity, which is captured in the Workshop Report. SED proposes that the application of Rule 12.2 on maintenance of lines meet the requirements of Rule 44.1 (installation and reconstruction), Rule 44.3 (replacement), and Rule 48 (strength of materials). The contention among parties is on retroactivity and proposed edits, which are specific to Rule 12.3 and discussed in that section. We agree with SED that the application of Rule 12.2 on maintenance of lines shall meet the requirements of Rule 44.1, Rule 44.3, and Rule 48, and that this revision supports the transition to LRFD.

4.2. Revision to Rule 12.3 – Lines Constructed Prior to this Order

Rule 12.3 indicates that lines or portions of lines constructed or reconstructed must conform with the effective order at the time of their construction or reconstruction, except for the requirements in Rule 12.2 (maintenance of lines). The Workshop Report includes an uncontested revision to Rule 12.3 to eliminate reference to a safety factor which is WSD specific.

Parties disagree about whether the requirements of LRFD should apply retroactively to existing overhead line elements built under the WSD criteria.[24] CalBroadband suggested that the proposed changes only apply prospectively

[24] Workshop Report at 13.

and not retroactively. The current version of Rule 12.3 contains language describing how existing lines are required to conform to the standards of Rule 12.2 for current safety factors. Utilities are concerned that they would be required to show conformance with the LRFD and redo pole calculations, even though the GO revision is set to be algebraically equivalent to the existing WSD methodology.[25]

This matter was discussed extensively in the workshop, resulting in changes from the initial petition and resulted in a note added to Rule 12.3 and Rule 44.2.[26] The note states the following:

> *Note: R.24-10-005 replaced the working stress design methodology previously incorporated in Section IV of this Order with load and resistance factor design (LRFD) methodology. The previous working stress design methodology may be used to show compliance with the rules of this Order for lines or portions of lines constructed, or reconstructed prior to the adoption of the load factor and strength factor requirements under R.24-10-005.*

SED's comment on the ruling questions neither supports nor opposes the note, yet indicate that the proposed note is not necessary.[27]

PG&E, SDG&E, SCE, AT&T, Crown Castle, and CMUA support the note added to Rule 12.3 and Rule 44.2.[28] The Joint Parties argue that the proposed note ensures that any new rules adopted in this proceeding would not require them to

[25] Workshop Report at 13.

[26] Joint Parties Opening Comments on Workshop Report at 2.

[27] SED Opening Comments on Workshop Report at 1-2.

[28] Opening comments on Workshop Report of Joint Parties at 2; Crown Castle at 1; CMUA at 2.

redesign their existing overhead lines.[29] The Joint Parties allege that the note is necessary to reduce regulatory exposure such as allegations of violations for not having designed existing facilities (which were built under previous editions of the GO 95 that required WSD) with the LRFD methodology.[30] The Joint Parties further explain that they do not wish to redo calculations to justify the poles with the LRFD methodology, that the methods are algebraically equivalent to WSD and that existing poles in the field designed in compliance with the WSD methodology should meet the proposed LRFD requirements.[31] The Joint Parties clarify the position further stating that any given pole (existing) will need to meet the level of safety inherent to LRFD as it pertains to its physical presence in the field and should have the same level of safety whether the design was performed using WSD or LRFD.[32]

All parties agreed that existing poles in the field that physically meet the existing WSD will meet the new criteria for LRFD based on the current algebraic equivalency of the two methods. No party provided an example of an overhead line asset designed under the WSD criteria that would not meet the current proposed criteria for LRFD.

We agree with SED on lack of need for the note at this time. The Joint Parties attempted to identify regulatory exposure in three examples where another party could allege a violation of GO 95 of an asset owner under the

---

[29] Joint Parties Opening Comments on Workshop Report at 3.

[30] Joint Parties Opening Comments on Workshop Report at 8.

[31] Joint Parties Opening Comments on Workshop Report at 8.

[32] Joint Parties Workshop Report Reply Comments at 3.

revision to Rule 12.3: (1) an existing pole was designed under WSD, (2) an existing pole has calculations but they are in WSD, (3) where an existing pole does not have calculations, but a utilities' procedures could indicate WSD design should have been used to design the pole. The Joint Parties failed to provide clear evidence as to how the hypotheticals are subject to Rule 12.3, which references Rule 12.2. Rule 12.2 states that lines must be maintained to meet the requirements of Rule 44.1, Rule 44.3, and Rule 48 that include the proposed LRFD revisions. The key word is that the lines must be "maintained" to meet requirements. We do not see how the hypothetical examples show a line designed using WSD that cannot be maintained to meet the requirements of Rule 12.3, when WSD and LRFD are algebraically equivalent. The Joint Parties cite that Rule 44.1 (which is cited by Rule 12.3 through Rule 12.2) states overhead lines must be designed using LRFD requirements. The Joint Parties indicate this requirement could lead to re-designing lines to meet the LRFD methodology in order to reduce perceived regulatory exposure. However, the Joint Parties fail to explain why maintaining a line per the requirements of Rule 12.3 would relate to how the line was designed.

Since proposed changes related to LRFD are implemented to be algebraically identical to WSD, no evidence is provided as to how existing programs which maintain overhead lines according to existing requirements would not automatically meet new requirements.

We should also consider the risk associated with the proposed note. The Joint Parties commented on the importance of safety factor for safety and that the current intent is not to undo the retroactive application of minimum safety

factors. However, the note in Rule 12.3 and Rule 44.2 undermines the current requirements of Rule 12.3. The current version of Rule 12.3 provides a clear pathway for the Commission to retroactively change the safety factor if there is a demonstrated need to do so, which the Commission exercised to address wildfires resulting in Decision 14-02-015. The proposed note is ambiguous on how future updates to LRFD standards for safety will apply to existing overhead lines originally designed by WSD. This unintended ambiguity changes the current standard of Rule 12.3.

By requiring existing lines to be maintained to the LRFD requirements, there is no ambiguity on how the Commission can address safety in the future; the Commission can update the load and strength factors. If a demonstrated safety need results in changes to GO 95 where WSD and LRFD are no longer algebraically equivalent, the Commission may choose to re-weigh the matter when the specific demonstrated safety need is under scrutiny and it is clear what the impacts are on existing assets. We see no reason to undermine the current purpose of Rule 12.3, which has been in place since 1941, and ensures that all existing assets are maintained to current safety standards.

In comments on the workshop report, different parties appear to interpret the proposed note in different ways with regards to when calculations are required to be updated to LRFD. SED indicated that the language is intended to clarify that regulated entities may use existing WSD records for facilities before the adoption of the LRFD methodology, but that utilities would need to update

to LRFD when updating records or creating new records.[33] Alternatively, Joint Party reply comments to the Workshop Report stated that poles would not necessarily need to be re-designed if new pole loading calculations were not required for installation of post-LRFD facilities.

SED's position and the Joint Parties position differ in that SED indicates any new calculations performed would need to use the LRFD methodology, whereas the Joint Parties indicate only a subset of cases would trigger new calculations using the LRFD methodology. Importantly, there appears to be a disagreement on how the proposed note would be interpreted if parties were required to provide calculations for poles in the field when there are no existing calculations. GO 95 already has specific criteria for when a calculation is required to be updated, for instance during a reconstruction. Removal of the proposed note would clarify that current practice for when calculations are required to be updated should be continued. The difference will be that when GO 95 requires calculations to be updated, the calculations must be performed using the updated LRFD requirements.

To summarize, we will not include the proposed note in Rule 12.3 and Rule 44.2 for the following reasons:

(1) since Rule 12.3 only requires lines to be maintained to the LRFD requirements and the proposed requirements are algebraically equivalent to existing requirements, the concerns about regulatory exposure of existing assets

[33] SED Workshop Report Opening Comments at 1 and 2.

which were designed under previous versions of GO 95 appear to be from a misreading of the rules,

(2) the proposed note may hamper the Commission's ability to address safety in the future, and the Commission should preserve its flexibility to address safety in the future if there is a specific demonstrated need, and

(3) as there is already confusion between parties about how to apply the proposed note, removing the note maintains the status quo regarding when calculations are required to be updated, and that calculations that are required to be updated should be performed using the LRFD methodology.

We agree that the uncontested revised language in that it eliminates WSD specific language. We agree that the proposed revised language in Attachment B of this proposed decision supports the transition to LRFD.

4.3. Revision to Rule 44.2 – Additional Construction

Rule 44.2 provides requirements for loading calculations when there is additional construction of facilities that meet requirements in Rule 44.3. During the workshop, parties agreed to revised terminology in Rule 44.2. The Workshop Report suggested incorporating language so that WSD could be used as an alternative methodology to show compliance for lines or portions of lines designed, constructed, added, or reconstructed prior to the adoption of the LRFD.

As described in the revision to Rule 12.3, the Workshop Report included additional language on retroactivity and compliance. We choose not to implement the proposed language for the same reasons discussed in Rule 12.3. Overhead lines designed before Rulemaking 24-10-005 need not have been

designed with the load factors in Table 4-1 and strength factors in Table 4-2 to meet the requirements of Rule 12.2 and Rule 12.3, but must meet the requirements of Rule 12.2 and Rule 12.3 if assessed under the current requirements. We agree that the proposed revised language in Attachment B of this proposed decision supports the transition to LRFD.

4.4. Revision to Rule 48 – Strength of Materials

Rule 48 provides compliance requirements on the strength of materials. The petition proposed updating standard terminology for LRFD in Rule 48. In comments to the OIR, SED raised concerns regarding LRFD permitting failures in the petition revision and requested a statistical survey to ensure the change to LRFD did not result in a standard which was less safe than the existing Rule 48. SED contended that Rule 48 does not permit structural failures, and that the long-term goal of using LRFD for more control over structural reliability could be constituted as permitting a certain number of structural failures. SED argued this was less safe, and so a statistical survey should be performed to ensure the actual number of failures observed in the field were less than the number of failures which the LRFD methodology would predict. This position was heavily contested between parties in comments which disagreed with SED's interpretation of Rule 48 and that a statistical study was needed when the petition was written to be algebraically equivalent. SED met with members outside of the workshops to resolve Rule 48 concerns.[34] Subsequently, SCE and

[34] SCE and SDG&E Opening Comments on Joint Party Meeting Report at 2.

SDG&E provided another proposed revision.[35] Workshop participants used a sample calculation in the Workshop Report to illustrate the application of Rule 48 and Rule 44.3.[36] Following the workshop, SED met with members of the GO 95/128 Rules Committee. In the workshop, parties were asked about the need to develop a process to assess the safety impacts of LRFD based on the recommendations developed in the workshop process. In comments to the Workshop Report, no parties, including SED, found a need for assessing safety impacts of LRFD based on its algebraic equivalency to WSD. We agree with parties that there is not a need for a statistical study now based on a transition to LRFD with an algebraic equivalency to WSD. If future changes are proposed where LRFD is no longer equivalent to the existing WSD, the Commission may choose to require a statistical study to justify the change. We understand that parties agreed that a statistical study was not required based on the workshop example showing how to apply Rule 48. Yet, the proposed revised language in the Workshop Report offered unnecessary changes to Rule 48. The proposed revised language presumably settles the debate between parties on the interpretation of Rule 48; which extends beyond the scope of this proceeding if changes are not necessary to transition to LRFD. The workshop example regarding Rule 48 and Rule 44.3 does not describe the full extent of Rule 48. The workshop example solely states that a line will not fail upon installation (including the effect of deterioration) at any load less than the specified

[35] Workshop Report at 7.

[36] Workshop Report, Examples 10 and 11 in Appendix F, Part 1.

at-replacement criteria. The workshop example does not explain how the new language would be applied in an enforcement case, and therefore does not demonstrate a consensus among parties on the interpretation. We are concerned the added language could be reinterpreted or result in an unintended change to GO 95 which is unnecessary to implement LRFD and the Workshop Report example is not enough to assuage our concerns.

We agree with revised language that is as close to the original language in Rule 48 to avoid unintended impacts consistent with the Workshop Report example. We agree that the proposed revised language in Attachment B of this proposed decision supports the transition to LRFD.

5. Uncontested Load and Resistance Factor Design-related Revisions in General Order 95

We find that parties sufficiently supported the proposed revisions in this section to transition the GO 95 methodology from WSD to LRFD. We adopt the proposed revisions to the GO 95 Rules as described below.

5.1. Revision to Rule 12.1-C – Construction and Reconstruction of Lines

Rule 12.1 provides requirements for construction and reconstruction of lines and extension lines with Rule 12.1-C specifically for a subordinate element such as a crossarm or a conductor. Appendix B of the Workshop Report proposed revisions to strike WSD terminology. This was supported by parties. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.2. Revision to Rule 34-G – Foreign Attachments

Rule 34-G addresses foreign attachments on poles and structures specifically related to guys. Initially, the GO 95/128 Rules Committee proposed replacing the term "safety factors" with "strength requirements".[37] During the workshop, parties agreed that removing "strength safety factors" was appropriately comprehensive since the requirements of the Rules extend beyond strength requirements. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.3. Revision to Rule 43.1-C – Temperature

Rule 43.1-C addresses temperatures of conductors ranging from 0 to 130 degrees Fahrenheit. The petition did not directly propose revising this rule based on the WSD or LRFD terminology but clarified that messengers[38] should be held to similar temperature requirements as conductors. This rule is meant to create requirements to account for the impact of the change in temperature on lines assumed in computing sag and its effect on structural loads. The current rules imprecisely use "conductor," but in some cases a conductor is not self-supported and is instead supported by a messenger. It may be necessary to consider both conductor sag and messenger sag. There may also be cases when a conductor's sag may be negligible because the conductor is supported along its length by a messenger, where the messenger's sag would effectively be the conductor's sag. In this context, the addition of the rule is closer to a

---

[37] SCE OIR Reply Comments on OIR in Attachment A at 5.

[38] GO 95 Rule 22.3 defines a messenger as, "stranded wires in a group and which generally is not a part of the conducting system, its primary function being to support wires or cables of the conducting system; sometimes called "suspension strand"."

typographical error correction than a change in practice or the rule — and given the lack of discussion and comments on the rule change, we understand this is how the rule is currently interpreted by industry. Parties supported this revision in the Workshop Report. We agree that the proposed revised language in the Workshop Report provides additional clarification.

5.4. Revision to Rule 43.2-C – Temperature

Rule 43.2-C addresses temperatures of conductors ranging from 25 to 130 degrees Fahrenheit. The petition proposed revising Rule 43.2-C as mentioned with the revision to Rule 43.1-C, which parties supported. We agree that the proposed revised language in the Workshop Report provides additional clarification.

5.5. Revision to Rule 44 – Safety Factors

Rule 44 specifies the "minimum allowable ratios of material and/or line element strengths to the effect of design loads as specified in Rule 43." In the Petition, GO 95/128 Rules Committee proposed modifying the terminology in Rule 44 to align with LRFD. "The ratios of the load factors in Table 4-1 to the strength factors in Table 4-2 are analogous to factors of safety (*i.e.*, safety factors). These factors are applied to account for variabilities (*e.g.*, deterioration, material properties, environmental loads, additional attachments, construction details and workmanship)" and in reference to Rule 43.[39] In the workshop, parties agreed with this proposed revision with one adjustment to move a statement into Note 2 informing readers that the ratio of load factors to strength factors in LRFD is

[39] Petition Appendix A at 5-6.

analogous to the safety factors in WSD.[40] The note also revised labeling in tables (*i.e.*, Minimum Safety Factors table is now Table F-1 in Appendix F).

In comments to the Workshop Report, the Joint Parties requested that the language in Note 1 be optional to make it (1) easier to implement with the structural analysis software, and (2) closer to a "true" LRFD approach.[41] This topic was not discussed in the Workshop Report. Note 1 describes how to perform structural analysis when deformation, deflection or displacement is accounted for in the structural analysis of an overhead line.[42] SED agreed with the Joint Parties and suggested two potential edits.[43]

We are concerned about broadly making Note 1 optional because it would no longer guarantee the algebraic equivalence between the implementation of LRFD and WSD when the structural design of overhead lines is performed. Specifically, we are concerned about structural analysis results where making Note 1 optional could result in overhead lines components that would be weaker than the current rules would require. This issue has not been fully deliberated in the workshops and might compromise the algebraic equivalence intended by this current GO 95 update. However, we are persuaded by the parties' support and that it is important that the new rules be easy to implement by the structural

---

[40] Workshop Report Appendix A at 5-6.

[41] Joint Parties Opening Comments on Workshop Report at 13.

[42] Structural analysis of overhead lines is often performed assuming deformation, deflection or displacement is negligible to simplify the structural analysis. However, this simplifying assumption can lead to designs that are inappropriate when deformation, deflection or displacement is not negligible.

[43] SED Reply Comments on Workshop Report at 3.

analysis software used by utilities. We include language to make Note 1 optional in cases where the load effects increase beyond that currently required by Note 1.[44]

We agree that the revised language for Rule 44 from the workshop supports the transition to LRFD. We also agree with revised language to make Note 1 optional in cases where it would increase the load effects beyond that currently required by Note 1.

5.6. Revision to Rule 44.1 – Installation and Reconstruction

Rule 44.1 specifies that "lines and elements of lines, upon installation or reconstruction, shall provide as a minimum the safety factors." In the Petition, GO 95/128 Rules Committee proposed modifying the terminology in Rule 44.1 to align with LRFD methodology, including the minimum load factors and maximum strength factors.[45] During the workshop, parties discussed adding a third decimal place to the LRFD load and strength factors in the Table 4-1 and Table 4-2 in the Petition in order to "achieve better agreement when comparing the ratios of load factors to strength factors to the original safety factors."[46] In other words, the third decimal place is intended to support algebraic equivalency in transitioning from WSD to LRFD. We agree that the proposed revised language from the Workshop Report for standard terminology for LRFD will

[44] The proposed version of Note 1 from the Workshop Report refers to "stress and loads." We edited the note to read "load effects" in lieu of "stress and loads" to be consistent the proposed version of rules from the Workshop Report.

[45] Petition Appendix at 7-12.

[46] Workshop Report at 9.

support the transition to LRFD. We also find that adjusting the decimal place in the LRFD load and strength factors will provide comparable calculations of LRFD and WSD.

5.7. Revision to Rule 44.3 – Replacement

Rule 44.3 addresses replacement of lines or parts thereof. The petition proposed LRFD appropriate terminology and an adjusted note in reference to a table. In the workshop, parties supported the proposed language but agreed to keep the existing language of "use" rather than the proposed "design" in the last sentence. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.8. Revision to Rule 45 – Transverse Strength Requirements

Rule 45 addresses required transverse strength of lines. The petition proposed updating standard terminology to transition to LRFD, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.9. Revision to Rule 46 – Vertical Strength Requirements

Rule 46 addresses required vertical strength of lines. The petition proposed updating standard terminology to transition to LRFD, which parties supported in the Workshop Report. We agree with the proposed revised language in the Workshop Report.

5.10. Revision to Rule 47 – Longitudinal Strength Requirements

Rule 47 addresses required longitudinal strength. The petition proposed updating standard terminology to transition to LRFD, which parties supported

in the Workshop Report. We agree with the proposed revised language in the Workshop Report that supports the transition to LRFD.

5.11. Revision to Rule 47.1 – Use of Guys and Braces

Rule 47.1 addresses required longitudinal strength specifically on use of guys and braces. The petition proposed updating standard terminology to transition to LRFD, which parties supported in the Workshop Report. We agree with the proposed revised language in the Workshop Report that supports the transition to LRFD.

5.12. Revision to Rule 47.2 – Change in Grade of Construction

Rule 47 addresses required longitudinal strength specifically on change in grade of construction. The petition proposed updating standard terminology for LRFD, which parties supported in the Workshop Report. Additionally, the petition proposed updated language to maintain the current standard as the existing standard, but the language was more nuanced than typical updates for LRFD since the original language was atypical. We agree with the proposed revised language in the Workshop Report that supports the transition to LRFD.

5.13. Revision to Rule 47.3 – End Supports in Grades "A" or "B" Construction

Rule 47.3 addresses required longitudinal strength specifically on end supports in grades "A" or "B" construction. The petition proposed updating standard terminology for LRFD, which parties supported. Additionally, the petition proposed updated language to maintain the current standard as the existing standard, but the language was more nuanced than typical updates for

LRFD since the original language was atypical. We agree with the proposed revised language in the Workshop Report that supports the transition to LRFD.

5.14. Revision to Rule 48.1 – Wood

Rule 48.1 addresses required strength of natural wood and laminated wood. The petition proposed updating standard terminology for LRFD in Rule 48.1. Parties supported the proposed revision to Rule 48.1 with the insertion of "designated" in Rule 48.1-A(1), when referring to the fiber strength, and to clarify the application of the 0.55 factor for long-time loading. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.15. Revision to Rule 48.2 – Steel

Rule 48.2 addresses required strength of steel. The petition proposed revising Rule 48.2, which parties supported. The proposed revisions uses the terminology "allowable stresses" throughout the section, which is WSD-related terminology rather than LRFD terminology. Certain references such as "AISC Manual of Steel Construction: Allowable Stress Design, 9th Edition" are specifically related to allowable stresses. With the changes made for algebraic equivalency, it is not necessary to make full revisions to LRFD in Rule 48.2 at this time as it would require updating to more recent design manuals, which could have unforeseen consequences. We note the discrepancy in this decision and note that if GO 95 is revised to further implement the LRFD methodology, further revision to terminology in this section to may be considered. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.16. Revision to Rule 48.3 – Concrete

Rule 48.3 addresses required strength of concrete. The petition proposed revising Rule 48.3 to eliminate WSD specific terminology, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.17. Revision to Rule 48.4 – Fiber-Reinforced Polymer

Rule 48.4 addresses required strength fiber-reinforced polymer. The petition proposed revising Rule 48.4 with LRFD specific terminology and clarification, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.18. Revision to Rule 48.5 – Other Engineered Materials

Rule 48.5 addresses required strength of other engineered materials. The petition proposed revising Rule 48.5 with LRFD specific terminology, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.19. Revision to Rule 48.6 – Conductors, Span Wires, Guys and Messengers

Rule 48.6 addresses values used for strengths of conductors, span wires, guys, and messengers. The petition did not directly propose revising this rule based on the WSD or LRFD terminology but provided clarifying language that parties support. The revision includes the acronym ASTM and currently used terminology. We agree that the proposed revised language in the Workshop Report provides clarification.

5.20. Revision to Rule 48.7 – Tower or Pole Foundations and Footings

Rule 48.7 addresses requirements for tower or pole foundations and footings. The petition proposed revising Rule 48.7 with LRFD specific terminology with design consistent with Rule 48 regarding strength of materials, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.21. Revision to Rule 49.2-C – Crossarms (Strength)

Rule 49.2-C addresses strength requirements for crossarms. The petition proposed revising Rule 49.2-C with LRFD specific terminology. In the workshop, parties supported the proposed language with minor changes.[47] We generally agreed that the proposed revised language in the Workshop Report supports the transition to LRFD but have revised language below from SPD staff for more clarity:

> Longitudinal Loads Normally Unbalanced: Crossarms subjected to unbalanced longitudinal loads shall meet the load and strength factor requirements specified in Rule 44.

5.22. Revision to Rule 49.3-C – Pins and Conductor Fastenings (Strength)

Rule 49.3-C addresses strength requirements for pins and conductor fastenings. The petition proposed revising Rule 49.3-C with LRFD specific terminology, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

---

[47] Workshop Report at 12.

5.23. Revision to Rule 49.4-B – Conductors (Size)

Rule 49.4-B addresses size of conductors. The petition proposed revising Rule 49.4-B with LRFD specific terminology. During the workshop, parties supported the proposed revision with an amendment. Rather than "be consistent with the load and strength" parties agreed to "meet the load and strength." We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.24. Revision to Rule 49.4 – Table 8 (Minimum Conductor Sizes)

Rule 49.4 has a table on minimum wire sizes based on conductor material or type. The petition proposed revising wire size terminology from Birmingham Wire Gauge or BWG to diameters in inches in the Rule 49.4 table. The workshop participants agreed with a modification to specify three decimal places instead of the petition's two decimal places. We agree with the proposed revised language in the Workshop Report since the move to diameters in inches is clearer than the existing reference to the BWG.

5.25. Revision to Rule 49.5 – Insulators

Rule 49.5 addresses strength requirements for insulators. The petition proposed revising Rule 49.5 with LRFD specific terminology, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.26. Revision to Rule 49.6-B – Guys and Anchors (Size)

Rule 49.6 addresses size requirements for guys and anchors. The petition proposed revising Rule 49.6 with LRFD specific terminology. During the workshop, parties supported the proposed revision with an amendment. Rather

than "be consistent with the load and strength," parties agreed to "meet the load and strength." We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.27. Revision to Rule 49.7 – Messengers and Span Wires

Rule 49.7 addresses strength requirements for messengers and span wires. The petition proposed revising Rule 49.7 with LRFD specific terminology, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.28. Revision to Rule 54.5 – Sags

Rule 54.5 addresses minimum sags permitted for conductors under normal temperatures. In Attachment A of SCE's reply comments on the OIR, the GO 95/128 Rules Committee proposed replacing the term "safety factors" with "strength requirements". During the workshop, parties agreed to replacing "safety factors" with "requirements" and maintaining broad reference to Rule 44. Reference to Table 4 of Rule 44 is omitted because the broad reference to Rule 44 sufficiently communicates the requirement to use the new Tables 4-1 and 4-2 in lieu of the deleted Table 4. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.29. Revision to Rule 56.2 – Overhead Guys, Anchor Guys, and Span Wires

Rule 56.2 addresses use of overhead guys, anchor guys and span wires when needed to support poles, towers or structures. In Attachment A of SCE's reply comments on the OIR, the GO 95/128 Rules Committee proposed replaced the term "safety factors" with "strength requirements". During the workshop

and in comments to the Workshop Report, parties agreed on a modification of replacing "safety factors" with "requirements." Additionally, parties agreed on, or were neutral about, adding "the effects of the" in front of "mechanical loads" to clarify the language.[48] We agree that the proposed revised language included here supports the transition to LRFD.

5.30. Revision to Rule 57.2 – Messengers and Insulated Cables

Rule 57.2 addresses use of messenger. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed to replacing the term "safety factors of Table 4" referencing Table 4 of Rule 44 with "requirements of Rule 44". We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.31. Revision to Rule 66.2 – Guys

Rule 57.2 addresses use of guys. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed to replacing the term "safety factors" with "requirements of Rule 44". During the workshop and in comments to the Workshop Report, parties also agreed, or were neutral about, adding "the effects of the" in front of "mechanical loads" to clarify the language.[49] We agree that the proposed revised language included here supports the transition to LRFD.

---

[48] While discussed in the workshop, this was reflected in the Workshop Report. Workshop Report opening comments of Joint Parties at 11; Crown Castle at 3; CMUA at 2; SED at 6.

[49] While discussed in the workshop, this was reflected in the Workshop Report. Workshop Report opening comments of Joint Parties at 11; Crown Castle at 3; CMUA at 2; SED at 6.

5.32. Revision to Rule 77.3-B – Material and Strength

Rule 77.3-B addresses strength of span wires, backbones, messengers, etc. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed to replacing the term "safety factors" with "requirements of Rule 44". We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.33. Revision to Rule 81.3 – Material and Strength

Rule 81.3 addresses material and strength requirements for communication poles. The petition proposed revising Rule 81.3 with LRFD specific terminology in accordance with Rule 44.3 regarding replacement of lines and eliminating WSD language on safety factors, which parties supported. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.34. Revision to Rule 84.5 – Sags

Rule 84.5 addresses permissible sag of conductors under loading conditions. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed that replacing the reference to safety factors and Table 4 of Rule 44 with "requirements of Rule 44" provided necessary terminology change. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.35. Revision to Rule 86.2 – Use

Rule 86.2 addresses use of guys on poles tower and structures. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed to replacing the term "safety factors" with "requirements of Rule 44". During the workshop and in comments to the Workshop Report, parties also agreed, or were neutral about, adding "the effects of the" in front of "mechanical loads" to clarify the language.[50] We agree that the proposed revised language included here supports the transition to LRFD.

5.36. Revision to Rule 87.2 – Use of Messenger

Rule 87.2 addresses use of messenger. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed that replacing the "safety factors of Table 4" in Rule 44 with "requirements of Rule 44" provided necessary terminology change. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.37. Revision to Rule 87.5 – Fastenings

Rule 87.5 addresses messenger fastenings. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed to replacing the term "safety factors" with "requirements". We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

---

[50] While discussed in the workshop, this was reflected in the Workshop Report. Workshop Report opening comments of Joint Parties at 11; Crown Castle at 3; CMUA at 2; SED at 6.

5.38. Revision to Rule 94.3 – General Requirements

Rule 94.3 addresses general requirements for application to certain joint poles. Specifically, the note in Rule 94.3 describes requirements for support elements and pole-top extensions. The GO 95/128 Rules Committee first raised the revision in Attachment A of SCE's reply comments on the OIR. During the workshop, parties agreed to eliminate reference to safety factors and Table 4 of Rule 44 and only reference requirements of Rule 44. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.39. Revision to Appendix B – Mechanical/Loading Data for Conductors

Appendix B contains mechanical data for conductors commonly used in supply and communication lines. The petition proposed nomenclature revision on ASTM that parties support. We agree with the proposed revised language in the Workshop Report.

5.40. Revision to Appendix C – Conductor Sags

Appendix C details conductor sag.[51] The proposed change was first added in SCE's reply comments on the OIR. We agree that the proposed revised language in the Workshop Report supports the transition to LRFD.

5.41. Revision to Appendix F – Typical Problems

Appendix F provides examples of typical problems. The Workshop Report proposed revisions to update the examples from WSD to LRFD.[52] The Workshop

[51] Conductor sag is the amount the conductor "sags" or "deflects" from an imaginary straight line drawn between the two supports (*i.e.*, the two crossarms).

[52] Workshop Report at 14.

Report also added the table with the original minimum safety factors (Table 4 of Rule 44.1) as Table F-1 in Appendix F so other General Orders which incorporate Table 4 may continue to reference Table 4.[53] We agree that the proposed revised language in the workshop supports the transition to LRFD.

6. Need for Safety Impact Assessment

SED initially suggested a statistical framework might be needed. Parties felt an example demonstrating how to implement the new rules would be helpful, and implemented an example in the Workshop Report.[54] Following the workshop and Workshop Report, particularly regarding strength of materials in Rule 48, no party has raised concern regarding the proposed changes. As described in earlier sections, the replacement of WSD with LRFD in GO 95 should provide algebraic equivalency. Therefore, we agree that it is not necessary to consider a safety impact assessment for this decision.

7. Summary of Public Comment

Rule 1.18 allows any member of the public to submit written comment in any Commission proceeding using the "Public Comment" tab of the online Docket Card for that proceeding on the Commission's website. Rule 1.18(a) requires that all written public comment submitted prior to the submission of the proceeding are part of the administrative record of the proceeding. Rule 1.18(b) requires that relevant written comment submitted in a proceeding be summarized in the final decision issued in that proceeding.

There are no public comments on the Docket Card of this proceeding.

---

[53] Workshop Report at 6.

[54] Workshop Report at 7.

8. Procedural Matters

This decision affirms all rulings made by the ALJ or the assigned Commissioner in this proceeding. All motions not ruled on are deemed denied.

9. Comments on Proposed Decision

The proposed decision of Commissioner Matthew Baker in this matter was mailed to the parties in accordance with Pub. Util. Code Section 311 and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on September 3, 2026 by Joint Parties and SED, and reply comments were filed on September 8, 2026 by CMUA and SED. The Commission makes the following revisions to the proposed decision in response to comments.

Parties support shifting the methodology in GO 95 to LRFD and maintaining the algebraic equivalency to WSD.

Joint Parties repeat their position that the new LRFD requirements should not retroactively apply to the existing lines and elements of lines. Joint Parties propose that the Commission include language for Rule 12.3 and Rule 44.2 regarding retroactivity, which CMUA supports. While SED supports the decision or language in the workshop report, it does not support the Joint Parties language from comments to the proposed decision. Alternatively, Joint Parties propose modifying Rule 44.1 and Rule 48 to eliminate reference to Rule 12.2 to address their issue regarding retroactivity. SED opposes this suggestion as it would negate extensive workshop compromise. We stand by the explanation in Section 4 and see no need to make further modification to the rules on the matter of retroactivity.

On Rule 48, SED recommends that the Commission use the language from the workshop report. We disagree as discussed in Section 4.4. SED disagrees with the decision language on Rule 48. SED is concerned that if Rule 48 omits the reference to Table 4-1 and Table 4-2 of Rule 44, it could lead to ambiguity and reduced safety standards. SED also argues that removing "multiplied by... and divided by" formula will create a technical loophole that drastically lowers the required failure threshold of a structure. We disagree. Rule 48 mandates that structures must not fail "under the requirements of Rule 44". Rule 44 contains the strict algebraic requirements (in Table 4-1 and Table 4-2) that the effects of the loads multiplied by the load factors must be less than or equal to the strengths of materials multiplied by the applicable strength factors. Restating these operational mechanics from Rule 44 within Rule 48 is unnecessary for compliance.

SED is also concerned that despite algebraic equivalency of the methodologies, there could be a different risk profile. We disagree because the proposed methodology does not allow utilities to arbitrarily pair different numerators and denominators to achieve a target ratio. Under the revised Rule 44, the numerator is strictly defined as the mandated load factor from Table 4-1, and the denominator is strictly defined as the mandated strength factor from Table 4-2. For any given construction grade and line element (such as a wood pole or conductor), the rules dictate exactly one permissible load factor and one permissible strength factor based on the exact values codified in the tables. The resulting ratio of these two fixed values is engineered to be algebraically equal to the current WSD safety factor, ensuring a consistent,

unambiguous, and enforceable design standard. We understand SED's concern and acknowledge that in future revisions to LRFD in GO 95 may require further consideration. This issue is moot with today's decision where WSD and LRFD are algebraically equivalent and therefore do not have different risk profiles.

On Rule 49.2-C SED support the clarity in the amended language on unbalanced longitudinal loads, yet recommends keeping the "shall have sufficient strength" from the workshop report and proposes additional language. We appreciate SEDs suggestion, though find the concept already required within "shall meet the load and strength factor requirements specified in Rule 44."

Joint Parties request that the effective date shift from July 1, 2027 to December 1, 2027 as practical and reasonable to implement LRFD. CMUA supports this request. We agree that this request for additional time is reasonable and revise the effective date to January 1, 2028.

So that the website has a more relevant version of GO 95 for compliance, we amend the direction to SED to publish the amended GO 95 set forth in Attachment B to this decision on the Commission's website 30 days before the effective date. SED recommends removing the requirements for a follow-up workshop or clarifying a procedural venue for including the correct participants. We require that both the follow up workshop and subsequent workshop report are noticed to the service list in this proceeding. Subsequently, we are not concerned that interested parties will not have adequate information and opportunity to participate. SED also suggests that evidence, such as new LRFD factors to improve structural reliability, could become available and could be subject to a petition to open a new OIR. We agree with SED about the possible

next steps. We also anticipate that information from the follow-up workshop could support a new OIR. We do not see a need to amend the follow-up workshop and schedule.

10. Assignment of Proceeding

Matthew Baker is the assigned Commissioner and Joanna Perez-Green is the assigned ALJ in this proceeding.

Findings of Fact

1. LRFD is an engineering methodology applied in the NESC, which is the standard applicable to power and communications overhead lines and adopted by the majority of states in the US.
2. LRFD with the two prescribed factors for loads and strength allows for more customizable design than WSD with the single safety factor.
3. The LRFD changes to GO 95 in this decision are designed to produce algebraically equivalent results to that of WSD in GO 95.

Conclusions of Law

1. It is reasonable to shift the GO 95 methodology from WSD to LRFD.
2. It is reasonable to revise terminology in GO 95 to be LRFD-specific.
3. It is reasonable to make nonsubstantive, uncontested revisions to GO 95 language to provide clarity and update nomenclature.
4. It is premature to address the issue of retroactivity based on LRFD and WSD being algebraically equivalent.
5. It is reasonable to adopt the revisions in GO 95 shown as redlines in Attachment A and in Attachment B to this decision.
6. SED should publish the amended GO 95 set forth in Attachment B to this decision on the Commission's website 30 days before the effective date.

7. The revisions to GO 95 set forth in Attachment B to this decision should be effective January 1, 2028.

8. It is reasonable to direct SPD to host a workshop on GO 95 within 24 months of issuance of this decision in which Commission staff notice the workshop and materials to the service list for this proceeding with an agenda that covers, but is not limited to, the following topics: (a) proposed revisions to GO 95 based on the revised Load and Resistance Factor Design methodology, (b) enhanced requirements for potentially obsolete construction configurations (such as wood pins), (c) enhanced requirements for construction configurations (such as covered conductor, fiberglass crossarms) that are becoming more prominent, and (d) updated language streamlining GO 95, eliminating known typographical errors and referencing more modern standards.

9. It is reasonable to require AT&T, Frontier, PG&E, SCE, and SDG&E to participate in the workshop and develop a workshop report with workshop participants.

10. It is reasonable to require PG&E, SCE, and SDG&E to serve a workshop report to the Commission staff and the service list of this proceeding.

11. All rulings made by the ALJ or the assigned Commissioner in this proceeding should be affirmed, and all motions not ruled on should be deemed denied.

12. This proceeding should be closed.

O R D E R

IT IS ORDERED that:

1. Attachment B to this decision with revised rules to General Order 95 is adopted.

2. The revisions to General Order 95 approved by this decision will be effective January 1, 2028.

3. Frontier California Inc., Citizens Telecommunications Company of California, Inc., and Frontier Communications of the Southwest Inc., Pacific Bell Telephone Company, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall:

   (a) participate in the workshop on proposed revisions to the General Order that will be hosted by Commission staff, and

   (b) work with workshop participants to write a joint workshop report.

4. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall serve a joint workshop report to Commission staff and the service list of this proceeding within 45 days after the workshop on proposed revisions to the General Order that will be hosted by Commission staff.

5. All rulings made by the assigned Administrative Law Judge or the assigned Commissioner in this proceeding are affirmed, and all motions not ruled on in this proceeding are deemed denied.

6. Rulemaking 24-10-005 is closed.

This order is effective today.

Dated _____, at Sacramento, California.

ATTACHMENT A

ATTACHMENT B