

Decision No. 91186 Application No. 56468 (Filed May 6, 1976)

In the Matter of the Application of PACIFIC GAS AND ELECTRIC COMPANY for an order or orders amending General Order No. 95, "Rules for Overhead Electric Line Construction", to amend certain Rules with respects to radial clearances from overhead conductors to non-climbable street lighting or traffic signal poles or standards.

(Electric)

(Appearances are listed in Appendix A.)

### O P I N I O N

By this application filed May 6, 1976, Pacific Gas and electric Company (PG&E) seeks an order amending and revising certain paragraphs and parts of General Order No. 95 (G.O. 95), "Rules for Overhead Electric Line Construction:"

The proposed amendment adds radial clearances from non-climbable poles for street lights and traffic signals. Presently, G.O. 95 does not show specific clearances for conductors passing and unattached. The proposal consists of additions, modifications, and deletions to Table 1, Rule 37 and related rules in G.O. 95 showing the clearances for different types of wires, conductors, or cables.

This application is the culmination of discussions between PG&E and the Commission staff (staff) that were staff-initiated in 1972 about what clearances should be applicable to underground- fed electroliers. Further, PG&E coordinated the proposal with the other major electric and communication line operators in the state.

PG&E submitted the proposed modification to G.O. 95 to Southern California Edison Company (Edison); San Diego Gas & Electric Company; Sacramento Municipal Utility District; Sierra Pacific Power Company; Pacific Power and Light Company; Department of Water and POf4er, City of Los Angeles (DWP); Hetch-Hetchy Water and Power, City and County of San Francisco; Continental Telephone of California; General Telephone Company of California; and the Pacific Telephone and Telegraph Company. These utilities have indicated concurrence in their w-written responses.

PG&E avers that the proposed modification to G.O. 95 will speed the resolution of conflicts over clearances from non- climbable poles while protecting the safety of persons engaged in the construction, maintenance, and operation of facilities in the vicinity of energized conductors.

PG&E, in its application, proposed to add Case 10 to Table of Rule 37 in G.O. 95. Proposed Case 10 lists radial centerline clearance of conductor or cable passing unattached from non-climbable street light and traffic signal poles or standards, including mastarms, brackets, and lighting fixtures by class of conductor as follows:

1. Communication conductors (including open wire, cables, and service drops) and supply service drops of 0 - 750 volts, A one-foot clearance except that the minimum clearance may be modified as follows:
  - (a) Communication cables passing non-climbable street light poles and the like. (Reference Rule 84.4-D4a to G.O. 95).
  - (b) May be reduced for grounded or multi-conductor cables. (Reference Rule 57.4-H for grounded cables and Rule 54.7-B6 for multi-conductor cables).
  - (c) May be reduced for supply service drops. (Reference Rule 54.8-D1).
  - (d) May be reduced for communications service drops. (Reference Rule 84.4-E1)
2. Trolley contact, feeder and span wires 0 - 5,000 volts. A 15 inch clearance except that the minimum clearance may be modified as follows:
  - (a) May be reduced for class T conductors of not more than 750 volts (See Rule 74.4-D).
  - (b) Not applicable to trolley span wires (Reference Rule 74.4-C).
3. Supply conductors of 0-750 volts and supply cables treated as in Rule 57.8. A three-foot clearance except that the minimum clearance may be reduced for grounded or multi-conductor cables as indicated in 1(b) above.
4. Supply conductors and supply cables 750V-22,500 volts. A six-foot clearance except that the minimum clearance may be reduced to four feet for voltages below 7,500 volts. (Reference Rule 54.4-D3).

5. Supply conductors and supply cables 22,500-300,000 volts. A ten-foot clearance except that the minimum clearance may be reduced to six feet for voltage below 75,000 volts.
6. Supply conductors and supply cables 300,000-500,000 volts. A ten-foot clearance except the minimum clearance shall be increased by 0.04-foot per 1,000 volts in excess of 300,000 volts.

By letter dated March 29, 1977, the State Division of Industrial Safety (DIS) opposed the application, and, in particular, the four-foot and six-foot rules proposed under Nos. 4 and 5 above. DIS further states that such clearances would cause a workman employed by other than a utility company to be in violation of DIS Electrical Safety Order 2946 (8 Cal. Adm. Code 2946) and Penal Code Section 385. 8 Cal. Adm. Code III 2946 provides minimum clearances of equipment and materials being used in proximity to overhead high voltage lines (HV lines) from HV lines, starting at 10 feet for 750 to 50,000 volts. However, 8 Cal. Adm. Code 2949 exempts work on HV lines by qualified electrical workers and work in proximity to HV lines by qualified persons using approved equipment and work procedures. P.C. Sec. 385 requires a six-foot clearance of tools, machinery, equipment, material, building, or structure from electric lines over 750 volts; it does not apply to work on overhead lines, the operation of trains or maintenance of overhead structures covered by the rules for overhead line construction prescribed by the Commission.

An Administrative Law Judge was assigned and by letter dated June 27, 1977, requested PG&E CO respond to the DIS allegations. PG&E, in its response dated July 28, 1978, suggested an informal meeting of DIS, the utilities, and staff to identify concerns and issues. Such meeting was held on October 13, 1978, in San Francisco. DIS presented its position, by letter dated October 12, 1978, that line clearances are being reduced by the application. It is PG&E's position that the application provides for the establishment of clearances for underground-fed street light and traffic signal poles or standards that are presently not regulated by G.O. 95. PG&E further states that adopting such standards should result in increased safety for qualified workmen. PG&E continued to informally discuss the application with DIS in order to resolve issues.

After notice, public hearing was held before Administrative Law Judge J. J. Doran in San Francisco on July 12, 1979, and in Los Angeles on August 7, 1979. The matter was submitted on August 7, 1979.

#### Position of the Parties

During the July 12, 1979, hearing, PG&E's attorney offered a modification to its proposal for consideration as a compromise to the position of State Division

of Occupational Safety and Health (DOSH) (formerly DIS). The modification relates to the clearance of supply conductors and supply cables operated at 750 to 7,500 volts from non-climbable street light and traffic signal poles. The application proposed that the minimum clearance "may be reduced to four feet for voltages below 7,500 volts". The modification proposed a six-foot minimum clearance except that. "existing clearances of not less than four feet for voltages below 7,500 volts shall be maintained." PG&E states that it has generally utilized the six-foot clearance for street light and traffic signal pole construction. PG&E also states the four-foot rule has been the historic standard on other systems in the State and is consistent with other provisions for overhead-fed street light and traffic signal poles. PG&E's modification is acceptable to DOSH's attorney.

The modification is not acceptable to Edison. Edison's counsel states that for years it has permitted four-foot clearances on electroliers that are owned or maintained by Edison, by qualified electrical workmen. He further states that it maintains six-foot clearances on electroliers that are owned and maintained by others.

PG&E's modification is not acceptable to the Bureau of Street Lighting, Department of Public Works, City of Los Angeles (LA Street Lighting). The LA Street Lighting appearance stated that it has utilized the four-foot clearance for many years. He further stated that the continued use of the four-foot rule would not result in the extensive cost implications that would otherwise result and there would be no detrimental effect on the safety of its workmen.

The appearance for the International Brotherhood of Electrical Workers, Local No. 11, Los Angeles (IBEW 11) concurs with the position of DOSH.

The appearance for the city of San Diego is opposed to the original application but not to PG&E's modification.

An adjourned hearing was held to provide the parties opportunity to clarify their oral statements by counsel and to support their positions by expert testimony.

During the adjourned hearing DWP and Edison stated that they support PG&E's application in its original form.

The appearance for the State Department of Transportation (Caltrans) objects to the application basically because it has very few qualified linemen.

IBEW 11 (Los Angeles County District) stated its position is for a six-foot clearance as contained in PG&E's proposed modification because it is a construction local which installs poles rather than maintains lighting units.

DOSH objects to the original application. DOSH recommends the compromise that PG&E offered. Further, it states that six-feet is a necessary safe clearance. If there has been a four-foot clearance concerning overhead-fed systems, any new rule adopted should apply to safe conditions for the workers. DOSH is concerned about contractors who have unqualified people.

PG&E states that it made a "proposed change in Table 1, Case 10, . . . in an attempt to resolve differences with the Division of Occupational Safety and Health," and that "the real parties in interest, in essence, the Southern California Edison Company and the City of Los Angeles, have made their position clear, and that position is also acceptable to us . . ."

The staff agrees with PG&E's position.

### Discussion

A DWP senior line mechanic supervisor with 34 years experience in the electrical trade presented testimony supporting the original application. He testified that G.O. 9S currently establishes a four-foot/six-foot clearance between overhead-fed lighting units and overhead conductors energized at 0-7,500 volts/ 7,500-22,500 volts (Rule 38). Units fed from underground sources are exempt from these minimum clearance standards (Rule 58.2.C). He further testified that the clearances shown in the original application for underground-fed units are the same as that required for overhead-fed units.

The witness testified that while minimal clearance is necessary the single factor which contributes toward safety is training and not distances from the electrical conductor, Further, to increase this historic clearance to employ less qualified workers is hazardous. He also testified that there is no justification to have a stricter standard for underground as compared to overhead- fed units.

DWP historically and currently follows the four-foot/six-foot clearances contained in the original application. The DWP witness could not find a record of or recall in his 34 years of experience an injury caused by a person involved in street lighting maintenance or reconstruction coming in contact with an energized overhead line. The witness stated that increased clearance over the requirement in the application would require more street light poles or raised electric lines resulting in millions of dollars of expenditure and impact the environment by obstructing views, disturbing sidewalk surfaces, and removing some forest products prior to the end of their useful lives.

DWP's superintendent of pole line specifications presented testimony reinforcing the economic: and environmental impacts. He testified that prior to

1960 DWP embarked on an extensive beautification program to reduce the mass of clutter associated with poles line designs. Further, if clearance were increased over those in the application, DWP would be regressing rather than progressing.

Edison presented an exhibit proposing clearances identical to those contained in the application.

The superintendent of construction and repair of the electrolier lighting system of the city of Los Angeles testified that he could not recall any accident involving its personnel working in close proximity to overhead HV lines during his 32 years of experience. It has been its practice for many years to observe a four-foot clearance when repairing or maintaining street lights, and 10 feet from energized lines during installation of standards. It coordinates safe working distances with the DWP. The witness knows of no basis that would justify a different standard for underground as compared to overhead-fed street lights. Further, the witness recommends that the proposal in the original application be adopted.

Caltrans' electrical superintendent, in District 7, with 33 years of experience in electrical work including five years in high voltage distribution, stated that he had a problem with the proposal because he understands it is to reduce clearances from six feet to four feet. He states it has very few qualified linemen and is therefore operating at a 10-foot clearance. He believes that underground-fed distances should be greater than overhead-fed because of lack of training of personnel working on underground-fed lights.

The electrical maintenance supervisor of street lighting and traffic signals for the city of San Diego with 18 yrs experience as an electrician, made a statement that the rules proposed in the application could prevent the city from maintaining plant because of Penal Code Sec. 385B and 8 Cal. Adm. Code 2946 which require six-foot and 10-foot clearances, respectively. He testified as supporting the modification offered by PG&E. He objects to the original application because it has some semi-skilled people not qualified as linemen, and he sees a problem with such persons coming within the four-foot area. The city has a training program for its employees. The city also contracts out some of the work on street light poles. The witness sees a difference between underground and overhead-fed street light standards because overhead primary lines must be close to overhead-fed but not to underground-fed street lights. He does not recall any electrical accidents related to street lights during the period he has worked for the city.

The IBEW 11 witness with 34 years experience in electrical work is in favor of the modification and opposed to the application. He favors a six-foot clearance for construction because members of his local ". . . don't play with the

high voltage or anything like that.” The witness would like 10 feet but will accept six feet. He states his members observe a 10-foot clearance during installation. In construction he does not see any difference between underground and overhead-fed lights.

A DOSH safety engineer with 33 years of electrical work testified that the training requirements for a qualified electrical worker to work on voltages above 600 volts were for example, a minimum of two years with a utility. He further said that six-foot clearance is safer than four feet. The witness was not aware of any accident resulting in injury, involving a contact with overhead conductors while a workman was maintaining street lights, during his six years with DOSH.

A staff engineer with DOSH for six years testified that he reviews all accident reports that the division investigates. He testified that utilities are exempt from all of DOSH's High Voltage Electrical Safety Orders (HVESO) except for Article 85, Work Procedures-operating Procedures, and Article 87, Power Transmission and Distribution, (a copy of the Federal Occupational Safety and Health Administration Standard Subpart V) dealing with the erection and construction of overhead high voltage conductors. Further, he said that utilities and some others are exempt from the basic 10-foot clearance in HVESO 2946 (Part of Article 86).

HVESO 2949 exempts work on HV lines by qualified electrical workers and work in proximity to HV lines by qualified persons using approved equipment and work procedures.

A qualified electrical worker requires a minimum of two years experience on HV lines. The witness states that a qualified person is less experienced and less trained than a qualified electrical worker. Further, qualified persons must work under a DOSH- approved safety training program and have tools and methods which prevent persons from having accidental contact with HV lines. The witness considered six feet safer than four feet because a person can reach four feet but cannot reach six feet as easily. He thinks distance is more important than training. He sees no difference in clearance between overhead-fed and underground-fed systems. Further, he does not argue that G.O. 95 covers overhead-fed systems. The witness agreed that overhead structures governed by the rules for overhead Line construction of the Commission are exempt from Penal Code Section 385. The witness did not know of any contact with HV lines by employees maintaining street lights.

A staff engineer, who enforces the rules of G.O. 95, testified that there has been no injury or death to personnel performing street light pole or standard maintenance in the proximity of power lines in over 1,000 electric line contact accident reports he has reviewed over a period of years. The staff engineer testified that Rule 38, Table 2, in G.O. 95 sets forth the standard for distance

that an overhead-fed street light standard must be kept from an overhead power line. Further, he does not know any reason for having a different distance standard for underground-fed as opposed to overhead-fed street lights in relation to overhead lines.

Minimum clearances of non-climbable overhead-fed street lights and traffic signals from overhead electric and communications lines are included in G.O. 95. However, G.O. 95 does not include clearances for such underground-fed units. The proposed underground-fed standards are similar to those now effective for overhead-fed units and will fill a gap in the regulation of overhead electric line construction.

There have been no accidents involving personnel maintaining street lights and traffic signals in close proximity to overhead electric lines known to any of the witnesses during their extensive experience. Training and experience are important factors that promote public safety. Clearances are not more important than training.

There is no justification for a stricter underground fed standard. Further, uniformity of standards should promote public safety.

The proposed rule changes are reasonable and should be adopted. Clearance requirements greater than those adopted would increase costs and impact the environment without offsetting benefits to public safety.

#### Findings of Facts

1. Minimum clearances of underground-fed non-climbable street light and traffic signal units from overhead electric and communication lines are not governed in G.O. 95.
2. Minimum clearances of non-climbable overhead-fed street light and traffic signal units from overhead electric and communication lines are regulated in G.O. 95 (Rule 38, Table 2).
3. The minimum clearances contained in' the application, for underground-fed non-climbable street light and traffic signal units are similar to those regulated in G.O. 95 for overhead-fed systems.
4. Establishing standards for underground-fed non-climbable units will fill a gap in the regulation of overhead electric line construction and should result in increased safety for qualified workmen and promote public safety.



5. The controversial part of the application relates to the minimum clearance from supply conductors, 750 to 7,500 volts, wherein a four-foot clearance is proposed to be established.
6. PG&E's modification at hearing proposed a six-foot minimum clearance, except that existing clearances of not less than four-feet for voltages below 7,500 volts, shall be maintained.
7. PG&E's modification was offered as a compromise to DOSH, without amending the application and without the concurrence of other line operators, who had concurred in the application.
8. The four-foot clearance has been the historic standard in the State on systems other than PG&E which generally uses six feet.
9. No accidents involving personnel maintaining street light and traffic signal units in close proximity to overhead electric lines have been reported.
10. Training is a factor that promotes public safety.
11. There is no justification in having ~ stricter standard for underground-fed units than for overhead-fed units.
12. Uniformity of standards for overhead-fed and underground- fed street light and traffic signal units clearances should result in increased safety for qualified workmen and promote public safety.
13. The standard of minimum clearances and rule changes proposed in the application will establish reasonable rules for facilities that are presently not regulated in G.O. 95.
14. Clearance requirements greater than those adopted would increase costs and impact the environment without offsetting benefits to public safety.
15. Pursuant to Government Code Sections 11380, 11423(b), and 11445(b), the Executive Director of the Commission transmitted on November 27, 1979 five copies of the order amending G.O. 95 to the Speaker of the Assembly and five copies to the Chairman of the State Committee on Rules. No comments or objections to the adoption of the revised General Order have been received.

#### Conclusion of Law

We conclude that G.O. 95 should be amended to provide a standard of clearances from non-climbable street light and traffic signal units as set forth in the following order.

O R D E R

IT IS ORDERED that:

1. The Commission's General Order No. 95, Rules for Overhead Electric Line Construction, is hereby amended to read as set forth in Appendix B attached to this order.
2. The Executive Director shall cause a copy of this decision to be served upon each electric and telephone utility operating within the State of California and the State Division of Occupational Safety and Health.

The effective date of this order shall be thirty date after the date hereof.

Dated January 8, 1980 at San Francisco, California.

## Appendix A

### LIST OF APPEARANCES

Applicant: Malcolm R. Furbush, Robert Ohlbach, and Kermit R. Kermit by Kermit R. Kubitz, Attorney at Law, for Pacific Gas and Electric Company.

Interested Parties: W. R. Jones and Daniel H. McEntire, for Sacramento Municipal Utility District; Harold D. Adelman and Howard L Collins, Attorneys at Law, for Southern California Edison Company; Genaro R. Sornoso, and David L. Nye, Attorney at Law, for Los Angeles Department of Water & Power; Paul M. Jurkoic, Attorney at Law for San Diego Gas & Electric Company; George A. Eslinger, for City of Los Angeles Department of Public Works, Bureau of Street Lighting; Don F. Sokol, for International Brotherhood of Electrical Workers Local #11 - Los Angeles; Michael D. Mason, John W. Hawkes, Attorneys at Law, and Pamela White McCullum, for Division of Occupational Safety and Health; Herbert H. Chew, for Caltrans District 04; Ernest M. Shaffer, for the City of San Diego; Michael Waldorf, Attorney at Law, for the City of Los Angeles; and James E. Hicks, for Traffic Signal Lab, California Department of Transportation

Commission Staff: Elmer Sjostrom, Attorney at Law, and V. A. Bevc

## Appendix B

### REVISIONS TO GENERAL ORDER NO. 95

1. Rule 22.0.0 Page 28

(Modification)

Non-climbable pole means a non-wood pole of smooth exterior surface (not latticed) that is not equipped with pole steps or other provisions for climbing, and upon which work is performed only from aerial lifts.

2. Rule 32.3 Page 38

(Addition)

Last paragraph, Line 3; add to the end of sentence:  
. . . and the provisions of Table 1, Case 10.

3. Rule 37 Page 42 :

(Modification)

Second paragraph, Line 4; modify to read:  
The clearance specified in Table 1 Cases 2 to 10, inclusive. . .

4. Rule 54.4-D(3) Page 108

(Modification)

First paragraph, Line 5; add to end of sentence:

. . . or where the provisions of Table 1, Case 10, Columns D, E, F, and G can be applied.

5. Rule 54.8.D(1) Page 130

(New Rule)

From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Supply service drops of 0 - 750 volts passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards,

including mastarms, brackets and lighting fixtures; a radial distance of 12 inches as specified in J Table I, Case 10, Column B; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from center line of pole. standard, attaching mastarms or fixtures; whether passing above. below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen when changing lamps or maintaining equipment.

6. Rule 54.10-B(1) Page 135

(Modification)

Add new line to end of paragraph:

Modifications of these basic clearances for conductors passing unattached are specified in Rule 54.10-B(6).

7. Rule 54.10-B(6) Page 135 ,

(New Rule)

From Non-climbable Street Lighting or Traffic Signal Poles Standards:

Multi-conductor cables passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms brackets, and lighting fixtures; a radial distance of 15 inches as specified in Table 1, Case 10, Column D; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from center line of pole, standard, attaching mastarms or fixture; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

8. Rule 57.4-H Page 153

(New Rule)

From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Messengers and metal-sheathed cables passing unattached which are bonded and grounded as specified in Rule 57.8, shall clear non-climbable street lighting and traffic signal poles or standards, including mastarms, brackets, and lighting fixtures; a radial distance of 15 inches as specified in Table 1, Case 10, Column D; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

9. Rule 74.4.D

(New Rule)

D. From Poles

(Third paragraph)

Class T conductors of not more than 750 volts passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms, brackets, and lighting fixtures: a radial distance of 15 inches as specified in Table 1, Case 10, Column C; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms, or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

10. Rule 84.4-D(4)

(Deletion)

Resolution E.999 effective October 7, 1958, is hereby rescinded and replaced by new Rule 84.4-D(4)(a).

11. Rule 84.4.D(4) (a)

(New Rule)

From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Communications cables passing unattached to non-climbable street lighting and traffic signal poles or standards including mastarms, brackets and lighting fixtures, shall clear a radial distance of 12 inches as specified in Table 1, Case 10, Column B; except when the cable sheath and messenger are suitably insulated for the highest voltage involved and mechanically protected from abrasion where necessary. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The cable shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

12. Rule 84.8-E(1)

(New Rule)

From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Communications service drops passing unattached shall clear non-climbable street lighting and traffic signal poles or standards, including mastarms, brackets and lighting fixtures; a radial distance of 12 inches as specified in Table 1, Case 10, Column B; except when the service drops are suitably insulated for the voltage involved and mechanically protected from abrasion where necessary. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

13. Rule 87.4-D(5)

(New Rule)

Conductors passing Unattached From Non-climbable Street Lighting and Traffic Signal Poles or Standards (see Rule 84.4-D(4))

Case No	Nature of Clearance	A Span Wires (other than trolley span wires), overhead guys & messengers	B Communication conductors (including open wire, cables & service drops), supply service drops of 0-750 volts	C Trolley contact feeder and span wires 0-5000 volts	D Supply conductors of 0-750 volts, & supply cables treated as in Rule 57.8	E Supply conductors and supply cables 750-22,500 volts	F Supply conductors and supply cables 22.5-300 kV	G Supply conductors and supply cables 300-550 kV (mm)
10	Radial centerline clearance of conductor or cable (unattached) from non-climbable street lighting or traffic signal poles or standards, including mastarms, brackets and lighting fixtures.	-	1ft. (oo) (u) (rr) (ss)	15 in (bb) (cc)	3 ft. (oo)	6 (ft) (pp)	10 ft (qq)	10 ft (ll)

- (u) Communication cables passing non-climbable poles, etc 84.4-D4a 210
- (bb) May be reduced for Class T Conductors of not more than 750 volts 87.4-D5 232
- (cc) Not applicable to trolley span wires 74.4-D 186
- (ll) shall be increased by 0.04 foot per kV in excess of 300 kV 74.4-E 189
- (oo) May be reduced for grounded or multi-conductor cables.
1. Grounded cables 57.4-H 153
  2. Multi-Conductor cables 54.10-B6 135
- (pp) May be reduced to 4 feet for voltages below 7,500 volts 54.4-D3 108
- (qq) May be reduced to 6 feet for voltages below 75 kV 54.8-D1 130
- (rr) May be reduced for supply service drops 84.4-E1 222
- (ss) May be reduced to communication service drops



Strikeout and Underline Section Added, August 12, 2002 by Raymond G Fugere

**Original Version**

Rule 22.0-D

22.0 Pole

- D Non-Climbable Pole means a metal pole of smooth exterior surface (not latticed), that is not equipped with pole steps or other provisions for climbing, and upon which work is performed only from aerial lifts.

**Strikeout and Underline Version**

Rule 22.0-D

22.0 Pole

- D Non-Climbable Pole means a non-wood ~~metal~~ pole of smooth exterior surface (not latticed), that is not equipped with pole steps or other provisions for climbing, and upon which work is performed only from aerial lifts.

**Final Version**

Rule 22.0-D

22.0 Pole

- D Non-Climbable Pole means a non-wood pole of smooth exterior surface (not latticed), that is not equipped with pole steps or other provisions for climbing, and upon which work is performed only from aerial lifts.

**Original Version**  
Rule 32.3

32.3 Colinear Lines

The center-line clearance between poles and conductors which pass unattached shall not be less than 1 ½ times the clearance specified in Table 1, Case 8, except where the interest pole is within 10 feet apart, clearances not less than as specified in Table 1, Case 8 shall be maintained between the center line of any pole and conductors which pass unattached. Where clearance crossarms are installed in the construction and maintenance of collinear lines or crossings, clearances not less than as specified in Table 1, Case 8 shall be maintained between all conductors on the clearance crossarms and the center line of poles to which such crossarms are attached.

The provisions of the foregoing rules for collinear lines are subject to modifications specified in Rule 84.4-D3 where communication circuits only are concerned.

**Strikeout and Underline Version**  
Rule 32.3

32.3 Colinear Lines

The center-line clearance between poles and conductors which pass unattached shall not be less than 1 ½ times the clearance specified in Table 1, Case 8, except where the interest pole is within 10 feet apart, clearances not less than as specified in Table 1, Case 8 shall be maintained between the center line of any pole and conductors which pass unattached. Where clearance crossarms are installed in the construction and maintenance of collinear lines or crossings, clearances not less than as specified in Table 1, Case 8 shall be maintained between all conductors on the clearance crossarms and the center line of poles to which such crossarms are attached.

The provisions of the foregoing rules for collinear lines are subject to modifications specified in Rule 84.4-D3 where communication circuits only are concerned and the provisions of Table 1, Case 10.

**Final Version**  
Rule 32.3

32.3 Colinear Lines

The center-line clearance between poles and conductors which pass unattached shall not be less than 1 ½ times the clearance specified in Table 1, Case 8, except where the interest pole is within 10 feet apart, clearances not less than as specified in Table 1, Case 8 shall be maintained between the center line of any pole and conductors which pass unattached. Where clearance crossarms are installed in the construction and maintenance of collinear lines or crossings, clearances not less than as specified in Table 1, Case 8 shall be maintained between all conductors on the clearance crossarms and the center line of poles to which such crossarms are attached.

The provisions of the foregoing rules for collinear lines are subject to modifications specified in Rule 84.4-D3 where communication circuits only are concerned and the provisions of Table 1, Case 10.

**Original Version**  
Rule 37

37 Minimum Clearances of Wires Above Railroads, Thoroughfares, Buildings, Etc.

Clearance between overhead conductors, guys, messengers or trolley span wires and tops of rails, surfaces of thoroughfares or other generally accessible areas across, along or above which any of the former pass; also clearances between conductors, guys, structures, or other objects, shall not be less than those set forth in Table 1, at a Temperature of 60°F and no wind.

The clearance specified in Table 1, Case 1, shall in no case be reduced more than 5% below the tabular values because of temperature and loading as specified in Rule 43. The clearances specified in Table 1, Cases 2 to 9 inclusive, shall in no case be reduced more than 10% below the tabular values because of temperature and loading as specified in Rule 43.

Where supply conductors are supported by suspension insulators at crossings over railroads which transport freight cars, the initial clearances shall be sufficient to prevent reduction to clearances less than 95% of the clearances specified in Table 1, Case 1 through the breaking of a conductor in either of the adjoining spans.

Where conductors, dead ends, and metal pins are concerned in any clearance specified in these rules, all clearances of less than 5 inches shall be applicable from surface of conductors (not including tie wires), dead ends, and metal pins, except clearances between surface of crossarm and conductors supported on pins and insulators (referred to in Table 1, Case 9) in which case the minimum clearance specified shall apply between center line of conductor and surface of crossarm or other line structure on which the conductor is supported.

All clearances of 5 inches or more shall be applicable from the center lines of conductors concerned.

## Strikeout and Underline Version

### Rule 37

#### 37 Minimum Clearances of Wires Above Railroads, Thoroughfares, Buildings, Etc.

Clearance between overhead conductors, guys, messengers or trolley span wires and tops of rails, surfaces of thoroughfares or other generally accessible areas across, along or above which any of the former pass; also clearances between conductors, guys, structures, or other objects, shall not be less than those set forth in Table 1, at a Temperature of 60°F and no wind.

The clearance specified in Table 1, Case 1, shall in no case be reduced more than 5% below the tabular values because of temperature and loading as specified in Rule 43. The clearances specified in Table 1, Cases 2 to 9 10 inclusive, shall in no case be reduced more than 10% below the tabular values because of temperature and loading as specified in Rule 43.

Where supply conductors are supported by suspension insulators at crossings over railroads which transport freight cars, the initial clearances shall be sufficient to prevent reduction to clearances less than 95% of the clearances specified in Table 1, Case 1 through the breaking of a conductor in either of the adjoining spans.

Where conductors, dead ends, and metal pins are concerned in any clearance specified in these rules, all clearances of less than 5 inches shall be applicable from surface of conductors (not including tie wires), dead ends, and metal pins, except clearances between surface of crossarm and conductors supported on pins and insulators (referred to in Table 1, Case 9) in which case the minimum clearance specified shall apply between center line of conductor and surface of crossarm or other line structure on which the conductor is supported.

All clearances of 5 inches or more shall be applicable from the center lines of conductors concerned.

**Final Version**  
Rule 37

37 Minimum Clearances of Wires Above Railroads, Thoroughfares, Buildings, Etc.

Clearance between overhead conductors, guys, messengers or trolley span wires and tops of rails, surfaces of thoroughfares or other generally accessible areas across, along or above which any of the former pass; also clearances between conductors, guys, structures, or other objects, shall not be less than those set forth in Table 1, at a Temperature of 60°F and no wind.

The clearance specified in Table 1, Case 1, shall in no case be reduced more than 5% below the tabular values because of temperature and loading as specified in Rule 43. The clearances specified in Table 1, Cases 2 to 10 inclusive, shall in no case be reduced more than 10% below the tabular values because of temperature and loading as specified in Rule 43.

Where supply conductors are supported by suspension insulators at crossings over railroads which transport freight cars, the initial clearances shall be sufficient to prevent reduction to clearances less than 95% of the clearances specified in Table 1, Case 1 through the breaking of a conductor in either of the adjoining spans.

Where conductors, dead ends, and metal pins are concerned in any clearance specified in these rules, all clearances of less than 5 inches shall be applicable from surface of conductors (not including tie wires), dead ends, and metal pins, except clearances between surface of crossarm and conductors supported on pins and insulators (referred to in Table 1, Case 9) in which case the minimum clearance specified shall apply between center line of conductor and surface of crossarm or other line structure on which the conductor is supported.

All clearances of 5 inches or more shall be applicable from the center lines of conductors concerned.

## Original Version

**Table 1**  
Basic Minimum Allowable Vertical Clearance of Wire Above Railroads, Thoroughfares and Ground; Also clearances from Poles, Buildings, Structures or Other Objects(m)  
(Letter References Denote Modifications of Minimum Clearances as Referred to in Note Following this Table)

Case No	Nature of Clearance	Wire or Conductor Concerned						
		A Span wires other than trolley span wires), overhead guys and messengers	B Communication conductors (including open wire, cables and service drops), supply service drops of 0-750 volts	C Trolley Contact, feeder and span wires 0-5000 volts	D Supply conductors of 0-750 volts and supply cables treated as in Rule 57.8	E Supply Conductors and supply cables, 750-22,500 volts	F Supply Conductors and supply cables 22.5 – 300 KV	G (mm) Supply Conductors and supply cables more 300 - 550 KV
1	Crossing above tracks of railroads which transport or propose to transport freight cars (max height 15 ft 1in) where not operated by overhead contact wires. (a) (b) (c) (d)	25 ft	25 ft	22 ft	25 ft	28 ft	34 ft	34 ft
2	Crossing or paralleling above tracks of railroads operated by overhead trolleys (b) (c) (d)	26 ft (e)	26 ft (e) (f) (g)	19 ft (h) (i)	27 ft (e) (g)	30 ft (g)	34 ft (g)	34 ft (g) (kk)
3	Crossing or along thoroughfares in Urban districts or crossings thoroughfares in rural districts (c) (d)	18 ft (j) (k) (ii)	18 ft (j) (l) (m) (ii)	19 ft (h)	20 ft (ii)	25 ft (n) (o) (ii)	30 ft (o) (ii)	30 ft (o) (ii) (kk)
4	Above ground along thoroughfares in rural districts or across other areas capable of being transversed by vehicles or agricultural equipment.	15 ft (k)	15 ft (m) (n) (p)	19 ft	16 ft	25 ft (n) (o)	30 ft (o) (p)	30 ft. (o) (kk)
5	Vertical ground in areas accessible to pedestrians only.	7 ft	10 ft (m) (q)	19 ft	12 ft	17 ft	25 ft (o)	25 ft. (o) (kk)
6	Vertical clearance above buildings and bridges (or other structures which do not ordinarily support conductors and on which men can walk) whether attached or unattached.	8 ft (r)	8 ft (r)	8 ft	8 ft	12 ft	12 ft	20 ft (ii)
7	Horizontal clearance of conductor from buildings (except generating and substans),	-----	3 ft (u)	3 ft	3 ft (u) (v)	6 ft (v)	6 ft (v)	15 ft (v)

	bridges or other structures (upon which men may work) where such conductor is not attached thereto. (a) (t)							
8	Distance of conductor from center line of pole, whether attached or unattached (w) (x) (y)	-----	15 in (a) (aa)	15 in (aa) (bb) (cc)	15 in (o) (aa) (dd)	15 or 18 in (o) (dd) (ee) (jj)	18 in (dd) (ee) (jj)	Not Applicable
9	Distance of conductor from surface of pole, crossarm or other overhead line structure upon which it is supported, providing it complies with Case 8 above (x) (ee)	-----	3 in (aa) (ff)	3 in (aa) (cc) (gg)	3 in (aa) (dd) (gg)	3 in (dd) (gg)	¼ pin spacing shown in Table 2 Case 15 (dd)	½ pin spacing shown in Table 2 Case 15 (dd)



(a)	Shall not be reduced more than 5% because of temperature or loading 1. Supply Lines 2. Communication Lines	37 54.4-B1 84.4-B1
(b)	Shall be increased for supply conductors on Suspension insulators, under certain conditions	37
(c)	Special clearances are provided for traffic signal equipment	58.1-C
(d)	Special clearances are provided for street lighting equipment	58.2-B
(e)	Based on trolley pole throw of 26 feet. May be reduced where suitably protected. 1. Supply Guys 2. Supply cables and messengers 3. Communication Guys 4. Communication cables and messengers	56.4-B2 57.4-B2 86.4-B2 87.4-B2
(f)	May be reduced depending on height of trolley contact conductors. 1. Supply Service Drop 2. Communication service drops	54.8-C5 84.8-D5
(g)	May be reduced and shall be increased depending on trolley throw 1. Supply conductors (except service drops) 2. Communication conductors (except service drops)	54.4-B2 84.4-B2
(h)	Shall be increase where freight cars are transported. 1. Trolley contact and feeder conductors 2. Trolley span wires	74.4-B1 77.4-A
(i)	May be reduced for trolley contact and span wires in subways, tunnels and under bridges 1. Trolley contact conductors 2. Trolley span wires	74.4-E 77.4-A
(j)	May be reduced at crossings over private thoroughfares and entrances to private property and over private property. 1. Supply Service drops 2. Supply Guys 3. Communication service drops 4. Communication guys	54.8-B2 56.4-A 84.8-C2 86.4-A
(k)	May be reduced along thoroughfares where not normally accessible to vehicles. 1. Supply Guys 2. Communication Guys	56.4-A1 86.4-A1
(l)	May be reduced where within 12 feet of curb line of public thoroughfares 1. Supply Service drops 2. Communication service drops	54.8-B1 84.8-C1
(m)	May be reduced for railways signal cables under special	84.4-A4

	conditions	
(n)	May be reduced in rural districts <ol style="list-style-type: none"> <li>1. Supply conductors, 750- 20,000 volts, crossing roads or driveways</li> <li>2. Supply conductors, 750-2000 volts, above agricultural areas and along roads</li> <li>3. Communication conductors along roads</li> </ol>	54.4-A2a 54.4-A2b 84.4-A2
(o)	May be reduced for transformer, regulator or capacitor leads. <ol style="list-style-type: none"> <li>1. Transformer Leads</li> <li>2. Regulator or Capacitor Leads</li> </ol>	58.3-B 58.4-B
(p)	May be reduced across arid or mountainous areas <ol style="list-style-type: none"> <li>1. Supply Conductors of more than 750- 22,500 Volts</li> <li>2. Communication conductors</li> </ol>	54.4-A1 84.4-A1
(q)	Shall be increased or may be reduced under special conditions. <ol style="list-style-type: none"> <li>1. Increased for supply service drops on industrial or commercial premises</li> <li>2. Supply service drops on residential premises</li> <li>3. Communication conductors</li> <li>4. Increased for Communication service drops on industrial or commercial premises</li> <li>5. Communication service drops on residential premises</li> </ol>	54.8-B3a 54.8-B3b 84.4-A3 84.8-C3a 84.8-C3b
(r)	May be reduced above roofs of buildings under special conditions <ol style="list-style-type: none"> <li>1. Supply overhead guys</li> <li>2. Supply service drops</li> <li>3. Communication overhead guys</li> <li>4. Communication conductors and cables</li> <li>5. Communication service drops</li> </ol>	56.4-G 54.8-B4 86.4-F 84.4-E 84.8-C4
(s)	Also applies at fire escapes, etc. <ol style="list-style-type: none"> <li>1. Supply Conductors</li> <li>2. Supply service drops on industrial or commercial premises</li> <li>3. Supply service drops on residential premises</li> <li>4. Communication Conductor</li> </ol>	54.4-H1 54.8-B4a 54.8-B4b 84.4-E
(t)	Special Clearances where attached to buildings, bridges or other structures <ol style="list-style-type: none"> <li>1. Supply conductors of 750-750- 22,500 volts</li> <li>2. Trolley Contact Conductors</li> <li>3. Communication Conductors</li> </ol>	54.4-H2 74.4-E 84.4-F
(u)	Reduced clearances permitted under special conditions <ol style="list-style-type: none"> <li>1. Supply service drops on industrial or commercial premises</li> <li>2. Supply cables, grounded</li> <li>3. Communication cables beside buildings, etc.</li> </ol>	54.8-B4a 57.4-G 84.4-E 84.4-F

	<ul style="list-style-type: none"> <li>4. Communication conductors under bridges, etc.</li> <li>5. Communication service drops.</li> </ul>	84.8-C4
(v)	<p>May be reduced under special conditions.</p> <ul style="list-style-type: none"> <li>1. Supply conductors of 750-7500 volts</li> <li>2. Supply transformer lead and bus wires where guarded</li> </ul>	<p>54.4-H1</p> <p>58.3-B2</p>
(w)	<p>May be reduced at angles in lines and transportation points</p> <ul style="list-style-type: none"> <li>1. Supply conductors</li> <li>2. Communication Conductors</li> </ul>	<p>54.4-D1</p> <p>84.4-D5</p>
(x)	<p>May be reduced for suitably protected lateral or vertical runs.</p> <ul style="list-style-type: none"> <li>1. Supply bond wires</li> <li>2. Supply ground wires</li> <li>3. Supply lateral conductors</li> <li>4. Supply vertical pins</li> <li>5. Supply risers</li> <li>6. Communication Ground Wires</li> <li>7. Communication lateral conductors</li> <li>8. Communication vertical runs</li> <li>9. Communication risers</li> </ul>	<p>53.4</p> <p>54.6-B</p> <p>54.6-C</p> <p>54.6-D</p> <p>54.6-E</p> <p>84.6-B</p> <p>84.6-C</p> <p>84.6-D</p> <p>84.6-E</p>
(y)	<p>Increased clearances for certain conductors</p> <ul style="list-style-type: none"> <li>1. Unattached conductors on colinear lines and crossing lines</li> <li>2. Unattached supply conductors</li> <li>3. Supply Service drops on clearance crossarms</li> <li>4. Supply Service drops on pole top extensions</li> <li>5. Unattached Supply service drops</li> <li>6. Communication lines, collinear, conflicting or crossing</li> <li>7. Communication conductors passing supply poles and unattached thereto</li> <li>8. Communication service drops on clearance crossarms</li> <li>9. Communication service drops on pole top extensions</li> <li>10. Unattached Communication service drops</li> </ul>	<p>32.3</p> <p>54.4D3</p> <p>54.8-C2</p> <p>54.8-C3</p> <p>54.8-D</p> <p>84.4-D3</p> <p>84.4-D4</p> <p>84.8-D2</p> <p>84.8-D3</p> <p>84.8-E</p>
(z)	<p>Special provisions for police and fire alarm conductors require increased clearances</p>	92.2
(aa)	<p>May be reduced under special provisions.</p> <ul style="list-style-type: none"> <li>1. Supply conductors of 0-750 volts in rack configuration</li> <li>2. Supply service drops from racks</li> <li>3. Supply cables and messengers attached to poles</li> <li>4. Communication conductors on communication poles</li> <li>5. Communication conductors on crossarms</li> <li>6. Communication conductors attached to poles</li> <li>7. Communication service drops attached to poles</li> <li>8. Communication cables and messengers <ul style="list-style-type: none"> <li>9. Supply or communication cables and messengers on jointly used poles</li> </ul> </li> <li>10. Communication service drops on pole top extensions</li> </ul>	<p>54.4-D5</p> <p>54.8-F</p> <p>57.4-F</p> <p>84.4-D</p> <p>84.4-D1</p> <p>84.4-D2</p> <p>84.8-B</p> <p>87.4-D</p> <p>92.1-B</p>

		92.1-C
(bb)	May be reduced for Class T conductors of not more than 750 volts and of the same potential and polarity	74.4-D
(cc)	Not applicable to trolley span wires	77.4-E
(dd)	Special clearances for pole-top and dead-end construction <ol style="list-style-type: none"> <li>1. Conductors dead-ended in vertical configuration on poles</li> <li>2. Conductors dead-ended in horizontal configuration</li> <li>3. Conductors in pole-top construction</li> </ol>	54.4-C4 54.4-D7 54.4-D8
(ee)	Clearance requirements for certain voltage classifications	54.4-D2
(ff)	Not applicable to communication conductors	84.4-D
(gg)	Clearance from crossarms may be reduced for certain conductors <ol style="list-style-type: none"> <li>1. Suitably insulated leads to protected runs</li> <li>2. Leads of 0-5000 volts to equipment</li> <li>3. Leads of 0-5000 volts to cutouts or switches</li> </ol>	54.4-E 54.4-E 58.5-C
(hh)	Reduced clearance permitted from temporary fixtures and lighting circuits 0-300 volts	78.3A(1)
(ii)	Special Clearances Required Above Public and Private Swimming Pools: <ol style="list-style-type: none"> <li>1. Supply line conductors</li> <li>2. Supply service drops</li> <li>3. Communication line conductors</li> <li>4. Communication service drops</li> <li>5. Supply guys, span wires</li> <li>6. Communication guys</li> </ol>	54.4-A4 54.8-B5 84.4-A5 84.8-C5 56.4-A3 86.4-A3
(jj)	May be decreased in partial underground distribution	54.4-D2
(kk)	Shall be increased by 0.025 ft. per kV in excess of 300 kV.	
(ll)	Shall be increased by 0.04 ft. per kV in excess of 300 kV.	
(mm)	proposed clearances to be submitted tot the CPUC prior to construction for circuits in excess of 550 kV.	
(nn)	Voltage shown in the table shall mean line – to – ground voltage for direct current (DC) systems.	

## Strikeout and Underline Version

**Table 1**  
Basic Minimum Allowable Vertical Clearance of Wire Above Railroads, Thoroughfares and Ground; Also clearances from Poles, Buildings, Structures or Other Objects(m)  
(Letter References Denote Modifications of Minimum Clearances as Referred to in Note Following this Table)

Case No	Nature of Clearance	Wire or Conductor Concerned						
		A Span wires other than trolley span wires), overhead guys and messengers	B Communication conductors (including open wire, cables and service drops), supply service drops of 0-750 volts	C Trolley Contact, feeder and span wires 0-5000 volts	D Supply conductors of 0-750 volts and supply cables treated as in Rule 57.8	E Supply Conductors and supply cables, 750-22,500 volts	F Supply Conductors and supply cables 22.5 – 300 KV	G (mm) Supply Conductors and supply cables more 300 - 550 KV
1	Crossing above tracks of railroads which transport or propose to transport freight cars (max height 15 ft 1in) where not operated by overhead contact wires. (a) (b) (c) (d)	25 ft	25 ft	22 ft	25 ft	28 ft	34 ft	34 ft
2	Crossing or paralleling above tracks of railroads operated by overhead trolleys (b) (c) (d)	26 ft (e)	26 ft (e) (f) (g)	19 ft (h) (i)	27 ft (e) (g)	30 ft (g)	34 ft (g)	34 ft (g) (kk)
3	Crossing or along thoroughfares in Urban districts or crossings thoroughfares in rural districts (c) (d)	18 ft (j) (k) (ii)	18 ft (j) (l) (m) (ii)	19 ft (h)	20 ft (ii)	25 ft (n) (o) (ii)	30 ft (o) (ii)	30 ft (o) (ii) (kk)
4	Above ground along thoroughfares in rural districts or across other areas capable of being transversed by vehicles or agricultural equipment.	15 ft (k)	15 ft (m) (n) (p)	19 ft	16 ft	25 ft (n) (o)	30 ft (o) (p)	30 ft. (o) (kk)
5	Vertical ground in areas accessible to pedestrians only.	7 ft	10 ft (m) (q)	19 ft	12 ft	17 ft	25 ft (o)	25 ft. (o) (kk)
6	Vertical clearance above buildings and bridges (or other structures which do not ordinarily support conductors and on which men can walk) whether attached or unattached.	8 ft (r)	8 ft (r)	8 ft	8 ft	12 ft	12 ft	20 ft (ll)
7	Horizontal clearance of conductor from buildings (except generating and substans),	-----	3 ft (u)	3 ft	3 ft (u) (v)	6 ft (v)	6 ft (v)	15 ft (v)

	bridges or other structures (upon which men may work) where such conductor is not attached thereto. (a) (t)							
8	Distance of conductor from center line of pole, whether attached or unattached (w) (x) (y)	-----	15 in (a) (aa)	15 in (aa) (bb) (cc)	15 in (o) (aa) (dd)	15 or 18 in (o) (dd) (ee) (jj)	18 in (dd) (ee) (jj)	Not Applicable
9	Distance of conductor from surface of pole, crossarm or other overhead line structure upon which it is supported, providing it complies with Case 8 above (x) (ee)	-----	3 in (aa) (ff)	3 in (aa) (cc) (gg)	3 in (aa) (dd) (gg)	3 in (dd) (gg)	¼ pin spacing shown in Table 2 Case 15 (dd)	½ pin spacing shown in Table 2 Case 15 (dd)
10	Radial centerline clearance of conductor or cable (unattached) from non-climbable street lighting or traffic signal poles or standards, including mastarms, brackets and lighting fixtures.	-----	1 ft (oo) (u) (rr) (ss)	15 in. (bb) (cc)	3 ft (oo)	6 ft (pp)	10 ft (qq)	10 ft (ll)

(a)	Shall not be reduced more than 5% because of temperature or loading 1. Supply Lines 2. Communication Lines	37 54.4-B1 84.4-B1
(b)	Shall be increased for supply conductors on Suspension insulators, under certain conditions	37
(c)	Special clearances are provided for traffic signal equipment	58.1-C
(d)	Special clearances are provided for street lighting equipment	58.2-B
(e)	Based on trolley pole throw of 26 feet. May be reduced where suitably protected. 1. Supply Guys 2. Supply cables and messengers 3. Communication Guys 4. Communication cables and messengers	56.4-B2 57.4-B2 86.4-B2 87.4-B2
(f)	May be reduced depending on height of trolley contact conductors. 1. Supply Service Drop 2. Communication service drops	54.8-C5 84.8-D5
(g)	May be reduced and shall be increased depending on trolley throw 1. Supply conductors (except service drops) 2. Communication conductors (except service drops)	54.4-B2 84.4-B2
(h)	Shall be increase where freight cars are transported. 1. Trolley contact and feeder conductors 2. Trolley span wires	74.4-B1 77.4-A
(i)	May be reduced for trolley contact and span wires in subways, tunnels and under bridges 1. Trolley contact conductors 2. Trolley span wires	74.4-E 77.4-A
(j)	May be reduced at crossings over private thoroughfares and entrances to private property and over private property. 1. Supply Service drops 2. Supply Guys 3. Communication service drops 4. Communication guys	54.8-B2 56.4-A 84.8-C2 86.4-A
(k)	May be reduced along thoroughfares where not normally accessible to vehicles. 1. Supply Guys 2. Communication Guys	56.4-A1 86.4-A1
(l)	May be reduced where within 12 feet of curb line of public thoroughfares 1. Supply Service drops 2. Communication service drops	54.8-B1 84.8-C1
(m)	May be reduced for railways signal cables under special	84.4-A4

	conditions	
(n)	<p>May be reduced in rural districts</p> <ol style="list-style-type: none"> <li>1. Supply conductors, 750- 20,000 volts, crossing roads or driveways</li> <li>2. Supply conductors, 750-2000 volts, above agricultural areas and along roads</li> <li>3. Communication conductors along roads</li> </ol>	<p>54.4-A2a</p> <p>54.4-A2b</p> <p>84.4-A2</p>
(o)	<p>May be reduced for transformer, regulator or capacitor leads.</p> <ol style="list-style-type: none"> <li>1. Transformer Leads</li> <li>2. Regulator or Capacitor Leads</li> </ol>	<p>58.3-B</p> <p>58.4-B</p>
(p)	<p>May be reduced across arid or mountainous areas</p> <ol style="list-style-type: none"> <li>1. Supply Conductors of more than 750- 22,500 Volts</li> <li>2. Communication conductors</li> </ol>	<p>54.4-A1</p> <p>84.4-A1</p>
(q)	<p>Shall be increased or may be reduced under special conditions.</p> <ol style="list-style-type: none"> <li>1. Increased for supply service drops on industrial or commercial premises</li> <li>2. Supply service drops on residential premises</li> <li>3. Communication conductors</li> <li>4. Increased for Communication service drops on industrial or commercial premises</li> <li>5. Communication service drops on residential premises</li> </ol>	<p>54.8-B3a</p> <p>54.8-B3b</p> <p>84.4-A3</p> <p>84.8-C3a</p> <p>84.8-C3b</p>
(r)	<p>May be reduced above roofs of buildings under special conditions</p> <ol style="list-style-type: none"> <li>1. Supply overhead guys</li> <li>2. Supply service drops</li> <li>3. Communication overhead guys</li> <li>4. Communication conductors and cables</li> <li>5. Communication service drops</li> </ol>	<p>56.4-G</p> <p>54.8-B4</p> <p>86.4-F</p> <p>84.4-E</p> <p>84.8-C4</p>
(s)	<p>Also applies at fire escapes, etc.</p> <ol style="list-style-type: none"> <li>1. Supply Conductors</li> <li>2. Supply service drops on industrial or commercial premises</li> <li>3. Supply service drops on residential premises</li> <li>4. Communication Conductor</li> </ol>	<p>54.4-H1</p> <p>54.8-B4a</p> <p>54.8-B4b</p> <p>84.4-E</p>
(t)	<p>Special Clearances where attached to buildings, bridges or other structures</p> <ol style="list-style-type: none"> <li>1. Supply conductors of 750-750- 22,500 volts</li> <li>2. Trolley Contact Conductors</li> <li>3. Communication Conductors</li> </ol>	<p>54.4-H2</p> <p>74.4-E</p> <p>84.4-F</p>
(u)	<p>Reduced clearances permitted under special conditions</p> <ol style="list-style-type: none"> <li>1. Supply service drops on industrial or commercial premises</li> <li>2. Supply cables, grounded</li> <li>3. Communication cables beside buildings, etc.</li> </ol>	<p>54.8-B4a</p> <p>57.4-G</p> <p>84.4-E</p>



	<ul style="list-style-type: none"> <li>4. Communication conductors under bridges, etc.</li> <li>5. Communication service drops.</li> <li>6. Communication cables passing non-climbable streetlight poles, etc</li> </ul>	<ul style="list-style-type: none"> <li>84.4-F</li> <li>84.8-C4</li> <li>84.4-D4a</li> </ul>
(v)	<p>May be reduced under special conditions.</p> <ul style="list-style-type: none"> <li>1. Supply conductors of 750-7500 volts</li> <li>2. Supply transformer lead and bus wires where guarded</li> </ul>	<ul style="list-style-type: none"> <li>54.4-H1</li> <li>58.3-B2</li> </ul>
(w)	<p>May be reduced at angles in lines and transportation points</p> <ul style="list-style-type: none"> <li>1. Supply conductors</li> <li>2. Communication Conductors</li> </ul>	<ul style="list-style-type: none"> <li>54.4-D1</li> <li>84.4-D5</li> </ul>
(x)	<p>May be reduced for suitably protected lateral or vertical runs.</p> <ul style="list-style-type: none"> <li>1. Supply bond wires</li> <li>2. Supply ground wires</li> <li>3. Supply lateral conductors</li> <li>4. Supply vertical pins</li> <li>5. Supply risers</li> <li>6. Communication Ground Wires</li> <li>7. Communication lateral conductors</li> <li>8. Communication vertical runs</li> <li>9. Communication risers</li> </ul>	<ul style="list-style-type: none"> <li>53.4</li> <li>54.6-B</li> <li>54.6-C</li> <li>54.6-D</li> <li>54.6-E</li> <li>84.6-B</li> <li>84.6-C</li> <li>84.6-D</li> <li>84.6-E</li> </ul>
(y)	<p>Increased clearances for certain conductors</p> <ul style="list-style-type: none"> <li>1. Unattached conductors on colinear lines and crossing lines</li> <li>2. Unattached supply conductors</li> <li>3. Supply Service drops on clearance crossarms</li> <li>4. Supply Service drops on pole top extensions</li> <li>5. Unattached Supply service drops</li> <li>6. Communication lines, collinear, conflicting or crossing</li> <li>7. Communication conductors passing supply poles and unattached thereto</li> <li>8. Communication service drops on clearance crossarms</li> <li>9. Communication service drops on pole top extensions</li> <li>10. Unattached Communication service drops</li> </ul>	<ul style="list-style-type: none"> <li>32.3</li> <li>54.4D3</li> <li>54.8-C2</li> <li>54.8-C3</li> <li>54.8-D</li> <li>84.4-D3</li> <li>84.4-D4</li> <li>84.8-D2</li> <li>84.8-D3</li> <li>84.8-E</li> </ul>
(z)	<p>Special provisions for police and fire alarm conductors require increased clearances</p>	<ul style="list-style-type: none"> <li>92.2</li> </ul>
(aa)	<p>May be reduced under special provisions.</p> <ul style="list-style-type: none"> <li>1. Supply conductors of 0-750 volts in rack configuration</li> <li>2. Supply service drops from racks</li> <li>3. Supply cables and messengers attached to poles</li> <li>4. Communication conductors on communication poles</li> <li>5. Communication conductors on crossarms</li> <li>6. Communication conductors attached to poles</li> <li>7. Communication service drops attached to poles</li> <li>8. Communication cables and messengers</li> </ul>	<ul style="list-style-type: none"> <li>54.4-D5</li> <li>54.8-F</li> <li>57.4-F</li> <li>84.4-D</li> <li>84.4-D1</li> <li>84.4-D2</li> <li>84.8-B</li> <li>87.4-D</li> </ul>

	9. Supply or communication cables and messengers on jointly used poles 10. Communication service drops on pole top extensions	92.1-B 92.1-C
(bb)	May be reduced for Class T conductors of not more than 750 volts and of the same potential and polarity	74.4-D
(cc)	Not applicable to trolley span wires	77.4-E
(dd)	Special clearances for pole-top and dead-end construction 1. Conductors dead-ended in vertical configuration on poles 2. Conductors dead-ended in horizontal configuration 3. Conductors in pole-top construction	54.4-C4 54.4-D7 54.4-D8
(ee)	Clearance requirements for certain voltage classifications	54.4-D2
(ff)	Not applicable to communication conductors	84.4-D
(gg)	Clearance from crossarms may be reduced for certain conductors 1. Suitably insulated leads to protected runs 2. Leads of 0-5000 volts to equipment 3. Leads of 0-5000 volts to cutouts or switches	54.4-E 54.4-E 58.5-C
(hh)	Reduced clearance permitted from temporary fixtures and lighting circuits 0-300 volts	78.3A(1)
(ii)	Special Clearances Required Above Public and Private Swimming Pools: 1. Supply line conductors 2. Supply service drops 3. Communication line conductors 4. Communication service drops 5. Supply guys, span wires 6. Communication guys	54.4-A4 54.8-B5 84.4-A5 84.8-C5 56.4-A3 86.4-A3
(jj)	May be decreased in partial underground distribution	54.4-D2
(kk)	Shall be increased by 0.025 ft. per kV in excess of 300 kV.	
(ll)	Shall be increased by 0.04 ft. per kV in excess of 300 kV.	
(mm)	proposed clearances to be submitted tot the CPUC prior to construction for circuits in excess of 550 kV.	
(nn)	Voltage shown in the table shall mean line – to – ground voltage for direct current (DC) systems.	
(oo)	<u>May be reduced for grounded or multi-conductor cables.</u> 1. Grounded cables 2. Multi-Conductor cables	57.4-H 54.10-B6
(pp)	<u>May be reduced to 4 feet for voltages below 7,500 volts</u>	54.4-D3
(qq)	<u>May be reduced to 6 feet for voltages below 75 kV</u>	
(rr)	<u>May be reduced for supply service drops</u>	54.8-D1
(ss)	<u>May be reduced to communication service drops</u>	84.4-E1

## Final Version

**Table 1**  
Basic Minimum Allowable Vertical Clearance of Wire Above Railroads, Thoroughfares and Ground; Also clearances from Poles, Buildings, Structures or Other Objects(m)  
(Letter References Denote Modifications of Minimum Clearances as Referred to in Note Following this Table)

Case No	Nature of Clearance	Wire or Conductor Concerned						
		A Span wires other than trolley span wires), overhead guys and messengers	B Communication conductors (including open wire, cables and service drops), supply service drops of 0-750 volts	C Trolley Contact, feeder and span wires 0-5000 volts	D Supply conductors of 0-750 volts and supply cables treated as in Rule 57.8	E Supply Conductors and supply cables, 750-22,500 volts	F Supply Conductors and supply cables 22.5 – 300 KV	G (mm) Supply Conductors and supply cables more 300 - 550 KV
1	Crossing above tracks of railroads which transport or propose to transport freight cars (max height 15 ft 1in) where not operated by overhead contact wires. (a) (b) (c) (d)	25 ft	25 ft	22 ft	25 ft	28 ft	34 ft	34 ft
2	Crossing or paralleling above tracks of railroads operated by overhead trolleys (b) (c) (d)	26 ft (e)	26 ft (e) (f) (g)	19 ft (h) (i)	27 ft (e) (g)	30 ft (g)	34 ft (g)	34 ft (g) (kk)
3	Crossing or along thoroughfares in Urban districts or crossings thoroughfares in rural districts (c) (d)	18 ft (j) (k) (ii)	18 ft (j) (l) (m) (ii)	19 ft (h)	20 ft (ii)	25 ft (n) (o) (ii)	30 ft (o) (ii)	30 ft (o) (ii) (kk)
4	Above ground along thoroughfares in rural districts or across other areas capable of being transversed by vehicles or agricultural equipment.	15 ft (k)	15 ft (m) (n) (p)	19 ft	16 ft	25 ft (n) (o)	30 ft (o) (p)	30 ft. (o) (kk)
5	Vertical ground in areas accessible to pedestrians only.	7 ft	10 ft (m) (q)	19 ft	12 ft	17 ft	25 ft (o)	25 ft. (o) (kk)
6	Vertical clearance above buildings and bridges (or other structures which do not ordinarily support conductors and on which men can walk) whether attached or unattached.	8 ft (r)	8 ft (r)	8 ft	8 ft	12 ft	12 ft	20 ft (ll)
7	Horizontal clearance of conductor from buildings (except generating and substans),	-----	3 ft (u)	3 ft	3 ft (u) (v)	6 ft (v)	6 ft (v)	15 ft (v)

	bridges or other structures (upon which men may work) where such conductor is not attached thereto. (a) (t)							
8	Distance of conductor from center line of pole, whether attached or unattached (w) (x) (y)	-----	15 in (a) (aa)	15 in (aa) (bb) (cc)	15 in (o) (aa) (dd)	15 or 18 in (o) (dd) (ee) (jj)	18 in (dd) (ee) (jj)	Not Applicable
9	Distance of conductor from surface of pole, crossarm or other overhead line structure upon which it is supported, providing it complies with Case 8 above (x) (ee)	-----	3 in (aa) (ff)	3 in (aa) (cc) (gg)	3 in (aa) (dd) (gg)	3 in (dd) (gg)	¼ pin spacing shown in Table 2 Case 15 (dd)	½ pin spacing shown in Table 2 Case 15 (dd)
10	Radial centerline clearance of conductor or cable (unattached) from non-climbable street lighting or traffic signal poles or standards, including mastarms, brackets and lighting fixtures.	-----	1 ft (oo) (u) (rr) (ss)	15 in. (bb) (cc)	3 ft (oo)	6 ft (pp)	10 ft (qq)	10 ft (ll)

(a)	Shall not be reduced more than 5% because of temperature or loading 1. Supply Lines 2. Communication Lines	37 54.4-B1 84.4-B1
(b)	Shall be increased for supply conductors on Suspension insulators, under certain conditions	37
(c)	Special clearances are provided for traffic signal equipment	58.1-C
(d)	Special clearances are provided for street lighting equipment	58.2-B
(e)	Based on trolley pole throw of 26 feet. May be reduced where suitably protected. 1. Supply Guys 2. Supply cables and messengers 3. Communication Guys 4. Communication cables and messengers	56.4-B2 57.4-B2 86.4-B2 87.4-B2
(f)	May be reduced depending on height of trolley contact conductors. 1. Supply Service Drop 2. Communication service drops	54.8-C5 84.8-D5
(g)	May be reduced and shall be increased depending on trolley throw 1. Supply conductors (except service drops) 2. Communication conductors (except service drops)	54.4-B2 84.4-B2
(h)	Shall be increase where freight cars are transported. 1. Trolley contact and feeder conductors 2. Trolley span wires	74.4-B1 77.4-A
(i)	May be reduced for trolley contact and span wires in subways, tunnels and under bridges 1. Trolley contact conductors 2. Trolley span wires	74.4-E 77.4-A
(j)	May be reduced at crossings over private thoroughfares and entrances to private property and over private property. 1. Supply Service drops 2. Supply Guys 3. Communication service drops 4. Communication guys	54.8-B2 56.4-A 84.8-C2 86.4-A
(k)	May be reduced along thoroughfares where not normally accessible to vehicles. 1. Supply Guys 2. Communication Guys	56.4-A1 86.4-A1
(l)	May be reduced where within 12 feet of curb line of public thoroughfares 1. Supply Service drops 2. Communication service drops	54.8-B1 84.8-C1
(m)	May be reduced for railways signal cables under special	84.4-A4

	conditions	
(n)	May be reduced in rural districts <ol style="list-style-type: none"> <li>1. Supply conductors, 750- 20,000 volts, crossing roads or driveways</li> <li>2. Supply conductors, 750-2000 volts, above agricultural areas and along roads</li> <li>3. Communication conductors along roads</li> </ol>	54.4-A2a 54.4-A2b 84.4-A2
(o)	May be reduced for transformer, regulator or capacitor leads. <ol style="list-style-type: none"> <li>1. Transformer Leads</li> <li>2. Regulator or Capacitor Leads</li> </ol>	58.3-B 58.4-B
(p)	May be reduced across arid or mountainous areas <ol style="list-style-type: none"> <li>1. Supply Conductors of more than 750- 22,500 Volts</li> <li>2. Communication conductors</li> </ol>	54.4-A1 84.4-A1
(q)	Shall be increased or may be reduced under special conditions. <ol style="list-style-type: none"> <li>1. Increased for supply service drops on industrial or commercial premises</li> <li>2. Supply service drops on residential premises</li> <li>3. Communication conductors</li> <li>4. Increased for Communication service drops on industrial or commercial premises</li> <li>5. Communication service drops on residential premises</li> </ol>	54.8-B3a 54.8-B3b 84.4-A3 84.8-C3a 84.8-C3b
(r)	May be reduced above roofs of buildings under special conditions <ol style="list-style-type: none"> <li>1. Supply overhead guys</li> <li>2. Supply service drops</li> <li>3. Communication overhead guys</li> <li>4. Communication conductors and cables</li> <li>5. Communication service drops</li> </ol>	56.4-G 54.8-B4 86.4-F 84.4-E 84.8-C4
(s)	Also applies at fire escapes, etc. <ol style="list-style-type: none"> <li>1. Supply Conductors</li> <li>2. Supply service drops on industrial or commercial premises</li> <li>3. Supply service drops on residential premises</li> <li>4. Communication Conductor</li> </ol>	54.4-H1 54.8-B4a 54.8-B4b 84.4-E
(t)	Special Clearances where attached to buildings, bridges or other structures <ol style="list-style-type: none"> <li>1. Supply conductors of 750-750- 22,500 volts</li> <li>2. Trolley Contact Conductors</li> <li>3. Communication Conductors</li> </ol>	54.4-H2 74.4-E 84.4-F
(u)	Reduced clearances permitted under special conditions <ol style="list-style-type: none"> <li>1. Supply service drops on industrial or commercial premises</li> <li>2. Supply cables, grounded</li> <li>3. Communication cables beside buildings, etc.</li> </ol>	54.8-B4a 57.4-G 84.4-E

	<ul style="list-style-type: none"> <li>4. Communication conductors under bridges, etc.</li> <li>5. Communication service drops.</li> <li>6. Communication cables passing non-climbable streetlight poles, etc</li> </ul>	<ul style="list-style-type: none"> <li>84.4-F</li> <li>84.8-C4</li> <li>84.4-D4a</li> </ul>
(v)	<p>May be reduced under special conditions.</p> <ul style="list-style-type: none"> <li>1. Supply conductors of 750-7500 volts</li> <li>2. Supply transformer lead and bus wires where guarded</li> </ul>	<ul style="list-style-type: none"> <li>54.4-H1</li> <li>58.3-B2</li> </ul>
(w)	<p>May be reduced at angles in lines and transportation points</p> <ul style="list-style-type: none"> <li>1. Supply conductors</li> <li>2. Communication Conductors</li> </ul>	<ul style="list-style-type: none"> <li>54.4-D1</li> <li>84.4-D5</li> </ul>
(x)	<p>May be reduced for suitably protected lateral or vertical runs.</p> <ul style="list-style-type: none"> <li>1. Supply bond wires</li> <li>2. Supply ground wires</li> <li>3. Supply lateral conductors</li> <li>4. Supply vertical pins</li> <li>5. Supply risers</li> <li>6. Communication Ground Wires</li> <li>7. Communication lateral conductors</li> <li>8. Communication vertical runs</li> <li>9. Communication risers</li> </ul>	<ul style="list-style-type: none"> <li>53.4</li> <li>54.6-B</li> <li>54.6-C</li> <li>54.6-D</li> <li>54.6-E</li> <li>84.6-B</li> <li>84.6-C</li> <li>84.6-D</li> <li>84.6-E</li> </ul>
(y)	<p>Increased clearances for certain conductors</p> <ul style="list-style-type: none"> <li>1. Unattached conductors on colinear lines and crossing lines</li> <li>2. Unattached supply conductors</li> <li>3. Supply Service drops on clearance crossarms</li> <li>4. Supply Service drops on pole top extensions</li> <li>5. Unattached Supply service drops</li> <li>6. Communication lines, collinear, conflicting or crossing</li> <li>7. Communication conductors passing supply poles and unattached thereto</li> <li>8. Communication service drops on clearance crossarms</li> <li>9. Communication service drops on pole top extensions</li> <li>10. Unattached Communication service drops</li> </ul>	<ul style="list-style-type: none"> <li>32.3</li> <li>54.4D3</li> <li>54.8-C2</li> <li>54.8-C3</li> <li>54.8-D</li> <li>84.4-D3</li> <li>84.4-D4</li> <li>84.8-D2</li> <li>84.8-D3</li> <li>84.8-E</li> </ul>
(z)	<p>Special provisions for police and fire alarm conductors require increased clearances</p>	<ul style="list-style-type: none"> <li>92.2</li> </ul>
(aa)	<p>May be reduced under special provisions.</p> <ul style="list-style-type: none"> <li>1. Supply conductors of 0-750 volts in rack configuration</li> <li>2. Supply service drops from racks</li> <li>3. Supply cables and messengers attached to poles</li> <li>4. Communication conductors on communication poles</li> <li>5. Communication conductors on crossarms</li> <li>6. Communication conductors attached to poles</li> <li>7. Communication service drops attached to poles</li> <li>8. Communication cables and messengers</li> </ul>	<ul style="list-style-type: none"> <li>54.4-D5</li> <li>54.8-F</li> <li>57.4-F</li> <li>84.4-D</li> <li>84.4-D1</li> <li>84.4-D2</li> <li>84.8-B</li> <li>87.4-D</li> </ul>

	9. Supply or communication cables and messengers on jointly used poles 10. Communication service drops on pole top extensions	92.1-B 92.1-C
(bb)	May be reduced for Class T conductors of not more than 750 volts and of the same potential and polarity	74.4-D
(cc)	Not applicable to trolley span wires	77.4-E
(dd)	Special clearances for pole-top and dead-end construction 1. Conductors dead-ended in vertical configuration on poles 2. Conductors dead-ended in horizontal configuration 3. Conductors in pole-top construction	54.4-C4 54.4-D7 54.4-D8
(ee)	Clearance requirements for certain voltage classifications	54.4-D2
(ff)	Not applicable to communication conductors	84.4-D
(gg)	Clearance from crossarms may be reduced for certain conductors 1. Suitably insulated leads to protected runs 2. Leads of 0-5000 volts to equipment 3. Leads of 0-5000 volts to cutouts or switches	54.4-E 54.4-E 58.5-C
(hh)	Reduced clearance permitted from temporary fixtures and lighting circuits 0-300 volts	78.3A(1)
(ii)	Special Clearances Required Above Public and Private Swimming Pools: 1. Supply line conductors 2. Supply service drops 3. Communication line conductors 4. Communication service drops 5. Supply guys, span wires 6. Communication guys	54.4-A4 54.8-B5 84.4-A5 84.8-C5 56.4-A3 86.4-A3
(jj)	May be decreased in partial underground distribution	54.4-D2
(kk)	Shall be increased by 0.025 ft. per kV in excess of 300 kV.	
(ll)	Shall be increased by 0.04 ft. per kV in excess of 300 kV.	
(mm)	proposed clearances to be submitted tot the CPUC prior to construction for circuits in excess of 550 kV.	
(nn)	Voltage shown in the table shall mean line – to – ground voltage for direct current (DC) systems.	
(oo)	May be reduced for grounded or multi-conductor cables. 1. Grounded cables 2. Multi-Conductor cables	57.4-H 54.10-B6
(pp)	May be reduced to 4 feet for voltages below 7,500 volts	54.4-D3
(qq)	May be reduced to 6 feet for voltages below 75 kV	
(rr)	May be reduced for supply service drops	54.8-D1
(ss)	May be reduced to communication service drops	84.4-E1



**Original Version**  
Rule 54.4-D(3)

54.4-D(3) Conductors Passing and Unattached: The centerline clearance between poles and conductors which pass unattached shall not be less than 1 ½ times the clearances specified in Table 1, Case 8, except where the interest pole is within 10 feet of a pole to which the passing conductors are attached. Where poles of the two lines are less than 10 feet apart, clearances not less than as specified in Table 1, Case 8 shall be maintained between the center line of any pole and conductors which pass unattached.

This rule will often necessitate the use of clearance crossarms with conductor clearance as specified in Table 1, Case 8, or the alternate increased clearances for service drops as provided in Rule 54.8-C3.

**Strikeout and Underline Version**  
Rule 54.4-D(3)

54.4-D(3) Conductors Passing and Unattached: The centerline clearance between poles and conductors which pass unattached shall not be less than 1 ½ times the clearances specified in Table 1, Case 8, except where the interest pole is within 10 feet of a pole to which the passing conductors are attached or where the provisions of Table 1, Case 10, Columns D, E, F, and G can be applied. Where poles of the two lines are less than 10 feet apart, clearances not less than as specified in Table 1, Case 8 shall be maintained between the center line of any pole and conductors which pass unattached.

This rule will often necessitate the use of clearance crossarms with conductor clearance as specified in Table 1, Case 8, or the alternate increased clearances for service drops as provided in Rule 54.8-C3.

**Final Version**  
Rule 54.4-D(3)

54.4-D(3) Conductors Passing and Unattached: The centerline clearance between poles and conductors which pass unattached shall not be less than 1 ½ times the clearances specified in Table 1, Case 8, except where the interest pole is within 10 feet of a pole to which the passing conductors are attached or where the provisions of Table 1, Case 10, Columns D, E, F, and G can be applied. Where poles of the two lines are less than 10 feet apart, clearances not less than as specified in Table 1, Case 8 shall be maintained between the center line of any pole and conductors which pass unattached.

This rule will often necessitate the use of clearance crossarms with conductor clearance as specified in Table 1, Case 8, or the alternate increased clearances for service drops as provided in Rule 54.8-C3.

**Original Version**  
Rule 54.8-D(1)

54.8-D(1) New Rule

**Strikeout and Underline Version**  
Rule 54.8-D(1)

54.8-D(1) From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Supply service drops of 0 - 750 volts passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms, brackets and lighting fixtures; a radial distance of 12 inches as specified in J Table I, Case 10, Column B; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from center line of pole standard, attaching mastarms or fixtures; whether passing above below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen when changing lamps or maintaining equipment.

**Final Version**  
Rule 54.8-D(1)

54.8-D(1) From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Supply service drops of 0 - 750 volts passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms, brackets and lighting fixtures; a radial distance of 12 inches as specified in J Table I, Case 10, Column B; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from center line of pole standard, attaching mastarms or fixtures; whether passing above below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen when changing lamps or maintaining equipment.

### **Original Version**

#### Rule 54.10

- 54.10-B(1) CLEARANCE FROM POLES: Multiconductor cables having a bare neutral may have clearances less than 15 inches from center line and three inches from surface of pole, as specified in Table 1, Column D, Cases 8 and 9, respectively, but shall have a clearance of not less than 2i inches from the surface of pole and shall be supported on an insulator.

### **Strikeout and Underline Version**

#### Rule 54.10

- 54.10-B(1) CLEARANCE FROM POLES: Multiconductor cables having a bare neutral may have clearances less than 15 inches from center line and three inches from surface of pole, as specified in Table 1, Column D, Cases 8 and 9, respectively, but shall have a clearance of not less than 2i inches from the surface of pole and shall be supported on an insulator. Modifications of these basic clearances for conductors passing unattached are specified in Rule 54.10-B(6).

### **Final Version**

#### Rule 54.10

- 54.10-B(1) CLEARANCE FROM POLES: Multiconductor cables having a bare neutral may have clearances less than 15 inches from center line and three inches from surface of pole, as specified in Table 1, Column D, Cases 8 and 9, respectively, but shall have a clearance of not less than 2i inches from the surface of pole and shall be supported on an insulator. Modifications of these basic clearances for conductors passing unattached are specified in Rule 54.10-B(6).

**Original Version**  
Rule 54.10-B(6)

54.10-B(6) New Rule

**Strikeout and Underline Version**  
Rule 54.10-B(6)

54.10-B(6) From Non-climbable Street Lighting or Traffic Signal Poles Standards:

Multi-conductor cables passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms brackets, and lighting fixtures; a radial distance of 15 inches as specified in Table 1, Case 10, Column D; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from center line of pole, standard, attaching mastarms or fixture; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

**Final Version**  
Rule 54.10-B(6)

54.10-B(6) From Non-climbable Street Lighting or Traffic Signal Poles Standards:

Multi-conductor cables passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms brackets, and lighting fixtures; a radial distance of 15 inches as specified in Table 1, Case 10, Column D; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from center line of pole, standard, attaching mastarms or fixture; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

Original Version  
Rule 57.4-H

Rule 57.4-H New Rule

Strikeout and Underline Version  
Rule 57.4-H

Rule 57.4-H From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Messengers and metal-sheathed cables passing unattached which are bonded and grounded as specified in Rule 57.8, shall clear non-climbable street lighting and traffic signal poles or standards, including mastarms, brackets, and lighting fixtures; a radial distance of 15 inches as specified in Table 1, Case 10, Column D; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline if pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

Final Version  
Rule 57.4-H

Rule 57.4-H From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Messengers and metal-sheathed cables passing unattached which are bonded and grounded as specified in Rule 57.8, shall clear non-climbable street lighting and traffic signal poles or standards, including mastarms, brackets, and lighting fixtures; a radial distance of 15 inches as specified in Table 1, Case 10, Column D; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline if pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

**Original Version**  
Rule 74.4-D

74.4D From Poles

Class T conductors of not more than 750 volts and of the same polarity, potential and system when carried on poles supporting no other conductors are not required to obtain the clearance of 15 inches from center line of pole (Table 1, Case 8), but shall comply with the clearance of 3 inches from surface of pole (Table 1, Case 9). The attachment of clearance arms for either supply or communication service drop does not affect the pole clearance of Class T conductors which are carried on one side or top of a pole.

Where Class T conductors are carried on more than one side of jointly occupied poles the clearance of Table 1, Cases 8 and 9, shall apply and a climbing space conforming to Rule 54.7 shall be provided.

## Strikeout and Underline Version

### Rule 74.4-D

#### 74.4D From Poles

Class T conductors of not more than 750 volts and of the same polarity, potential and system when carried on poles supporting no other conductors are not required to obtain the clearance of 15 inches from center line of pole (Table 1, Case 8), but shall comply with the clearance of 3 inches from surface of pole (Table 1, Case 9). The attachment of clearance arms for either supply or communication service drop does not affect the pole clearance of Class T conductors which are carried on one side or top of a pole.

Where Class T conductors are carried on more than one side of jointly occupied poles the clearance of Table 1, Cases 8 and 9, shall apply and a climbing space conforming to Rule 54.7 shall be provided.

Class T conductors of not more than 750 volts passing unattached shall clear non-climbable street lighting and traffic signal poles, or standards, including mastarms, brackets, and lighting fixtures: a radial distance of 15 inches as specified in Table 1, Case 10, Column C; except when the conductors are mechanically protected from abrasion by materials specified in Rule 22.2. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms, or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.



**Final Version**  
Rule 74.4-D

74.4D From Poles

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**Original Version**  
Rule 84.4-D(4)

84.4-D(4) Conductors Passing Supply Poles And Unattached Thereto: The center line clearance between poles supporting supply conductors and any communication conductors which pass such poles unattached shall be not less than 22 ½ inches (1 ½ times the clearance specified in Table 1, Case 8), except where the supply pole is within 10 feet of the pole on which the communication conductors are supported. Where poles of the two lines are less than 10 feet apart, clearances not less than as specified in Table 1, Case 8, shall be maintained.

Note Resolution No. E-999, effective October 7, 1958, authorized that the 22 ½-inch clearance of Rule 84.4-D4 shall not apply to communication cable passing but unattached to a street lighting pole which is non-climbable, provided:

- a. Cable sheath and messenger are suitably insulated for the street lighting and other voltages involved. Metallic poles, insulation to extend 3 feet horizontally from pole center line.
- b. Cable and Messenger to be mechanically protected from abrasion where necessary.

## Strikeout and Underline Version

### Rule 84.4-D(4)

84.4-D(4) Conductors Passing Supply Poles And Unattached Thereto: The center line clearance between poles supporting supply conductors and any communication conductors which pass such poles unattached shall be not less than 22 ½ inches (1 ½ times the clearance specified in Table 1, Case 8), except where the supply pole is within 10 feet of the pole on which the communication conductors are supported. Where poles of the two lines are less than 10 feet apart, clearances not less than as specified in Table 1, Case 8, shall be maintained.

Note Resolution No. E-999, effective October 7, 1958, ~~authorized that the 22 ½ inch clearance of Rule 84.4-D4 shall not apply to communication cable passing but unattached to a street lighting pole which is non-climbable, provided: is~~ rescinded and replaced by new Rule 84.4-D(4)a; deleted and revised January 8, 1980 by Decision No. 91186.

- a. ~~Cable sheath and messenger are suitably insulated for the street lighting and other voltages involved. Metallic poles, insulation to extend 3 feet horizontally from pole center line.~~
- b. ~~Cable and Messenger to be mechanically protected from abrasion where necessary.~~

(a) From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Communications cables passing unattached to non-climbable street lighting and traffic signal poles or standards including mastarms, brackets and lighting fixtures, shall clear a radial distance of 12 inches as specified in Table 1, Case 10, Column B; except when the cable sheath and messenger are suitably insulated for the highest voltage involved and mechanically protected from abrasion where necessary. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The cable shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

**Final Version**  
Rule 84.4-D(4)

84.4-D(4) Conductors Passing Supply Poles And Unattached Thereto: The center line clearance between poles supporting supply conductors and any communication conductors which pass such poles unattached shall be not less than 22 ½ inches (1 ½ times the clearance specified in Table 1, Case 8), except where the supply pole is within 10 feet of the pole on which the communication conductors are supported. Where poles of the two lines are less than 10 feet apart, clearances not less than as specified in Table 1, Case 8, shall be maintained.

Note Resolution No. E-999, effective October 7, 1958 rescinded and replaced by new Rule 84.4-D(4)a; deleted and revised January 8, 1980 by Decision No. 91186.

(a) From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Communications cables passing unattached to non-climbable street lighting and traffic signal poles or standards including mastarms, brackets and lighting fixtures, shall clear a radial distance of 12 inches as specified in Table 1, Case 10, Column B; except when the cable sheath and messenger are suitably insulated for the highest voltage involved and mechanically protected from abrasion where necessary. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The cable shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

**Original Version**  
Rule 84.8-E(1)

84.8-E(1) New Rule

**Strikeout and Underline Version**  
Rule 84.8-E(1)

84.8-E(1) From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Communications service drops passing unattached shall clear non-climbable street lighting and traffic signal poles. or standards, including mastarms, brackets and lighting fixtures; a radial distance of 12 inches as specified in Table 1, Case 10, Column B; except when the service drops are suitably insulated for the voltage involved and mechanically protected from abrasion where necessary. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

**Final Version**  
Rule 84.8-E(1)

84.8-E(1) From Non-climbable Street Lighting or Traffic Signal Poles or Standards:

Communications service drops passing unattached shall clear non-climbable street lighting and traffic signal poles. or standards, including mastarms, brackets and lighting fixtures; a radial distance of 12 inches as specified in Table 1, Case 10, Column B; except when the service drops are suitably insulated for the voltage involved and mechanically protected from abrasion where necessary. Such mechanical protection shall extend 15 inches in each direction along the cable from centerline of pole, standard, attaching mastarms or fixtures; whether passing above, below or alongside. The conductors shall be installed in such a manner so as not to interfere with light distribution from lighting fixtures and shall not hamper workmen changing lamps or maintaining equipment.

**Original Version**

Rule 87.4-D(5)

87.4-D(5) New Rule

**Strikeout and Underline Version**

Rule 87.4-D(5)

~~87.4-D(5) Conductors passing Unattached From Non-climbable Street Lighting and Traffic Signal Poles or Standards (see Rule 84.4-D(4))~~

**Final Version**

Rule 87.4-D(5)

87.4-D(5) Conductors passing Unattached From Non-climbable Street Lighting and Traffic Signal Poles or Standards (see Rule 84.4-D(4))