

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

RESOLUTION NO. E-1109
BRANCH/SECTION: Electric
January 2, 1962

SUEJECT: Changes and Additions to Rules of General Order No. 95
Concerning Pole Steps for Joint Poles, Clearances in the Vicinity of
Swimming Pools, Use of Approved Heavy Insulation, Class "H"
Circuit Authorizations, and Bare Neutral Multiconductor Cable.

WHEREAS: Comments and requests have been received from utilities
concerning modification of pole step requirements on joint poles,
adoption of additional rules covering safe conductor clearances in
the vicinity of swimming pools, simplification of procedures by
changing provisions of Rule 31.3 requiring special permission for
Class "H" occupancies, and adding provisions for use of low voltage
bare neutral multiconductor cable, and

WHEREAS: Following staff investigation, it appears that said Rule 91.3 can be
modified to effect economies without lessening safety to workmen
and to the public, and

WHEREAS: Staff investigation has indicated that, to provide adequate safety,
the order should specify clearances of conductors crossing and in
the vicinity of swimming pools and that, in the continued absence
of such clearance rules, there is a probability that lines having
clearances considered unsafe for workmen and the public may be
constructed, and

WHEREAS: It appears that Rule No. 31.3 of the order can be simplified to
reduce the requests by utilities for prior permission now required,
in cases of prospective Class "H" occupancy where the utilities
involved indicate their agreement, and

WHEREAS: Following staff investigation it appears that state-wide provision for
the use of low voltage bare neutral multiconductor cable attached
to pole-mounted insulators for secondary line construction, now
authorized for seven line operators, can result in certain economies
and that adoption of standard rules governing such use of this
cable on state-wide basis will not lessen safety to workmen or to
the general public, and

WHEREAS: It appears that these changes and additions to the order are necessary and desirable and good cause appearing,

IT IS HEREBY ORDERED that:

1. Rule No. 91.3 of this Commissions general Order No. 95 be changed to read as set forth in Appendix A, attached hereto;
2. The rules set forth in Appendix B, attached Hereto, be added to General Order No. 95.
3. The materials listed and described in Appendix C attached hereto are hereby approved for use under the reduced clearances specified in the new Rules No. 54.8B(5), 84.3A(5), 9.nd 84.8C(5) as set forth in Appendix B, of this resolution.
4. Rule No. 31.3 of said General Order No. 95 be changed to read as set forth in Appendix D attached hereto.
5. The new rules set forth in Appendix E attached hereto, be added to General Order 95.
6. Sixty days after the date hereof, authorization of further construction of low voltage bare neutral multiconductor cable in accordance with the provisions authorized by Resolutions Nos. E-818, E-872, E-953, E-1007, E-1051 E-1053 and E-1104 shall be terminated.

The Secretary is directed to cause appropriate notice of the issuance of this order to be given to all operators of overhead electric supply and communications lines coming within the jurisdiction of this Commission.

I hereby certify that the foregoing Resolution was duly introduced, passed and adopted at a regular conference of the Public Utilities Commission of the State of California, held on the 1st day of May, 1961, the following Commissioners voting favorably thereon:

EVERETT C McKEAGE President
PETER E. MITCHELL,
C. LYN FOX
GEORGE G. GROVER
FREDERICK B. HOLOROFF

APPENDIX A
CHANGE OF RULE 91.3
GENERAL ORDER NO. 95

RULE 91.3 shall be changed to read as follows:

91.3 Stepping

A. Use Of Steps

- (1) **Poles with Vertical Runs or Risers:** All jointly used poles which support supply conductors shall be provided with pole steps if vertical runs or risers are attached to the surface of such poles, unless the conditions described in the following subparagraphs (a), (b) or (c) are met:
 - (a) **One-Party Poles:** Poles which carry circuits operated and maintained by only one party are not required to be stepped, provided any vertical runs or risers on the surface of such poles are covered by a suitable protective covering (Refer to Rule 54.6-E and Rule 84.6-E) from the ground line to a level not less than 8 ft. above the ground line, or provided that such poles comply with the conditions of Rule 91.3-A1b .
 - (b) **Communications Runs:** Joint poles with vertical communications runs are not required to be stepped, provided all of the following conditions are met:
 - 1) The pole has no pole mounted communication terminals, no risers and no vertical runs (including ground wires) located within the climbing space, and not more than three levels of communication line conductors;
 - 2) The communications levels consist only of drop wire in line cable construction, span wire supported cables, and messenger-supported cables;
 - 3) The maximum vertical separation between the highest and lowest line communications levels is not more than 30 inches;

4) The vertical runs other than ground wires consist entirely of drop wire cables for service drops which extend vertically no more than one foot above and below the communication line levels.

(c) **Supply Runs:** Joint poles with supply vertical runs are not required to be stepped provided all of the following conditions are met:

- 1) All supply circuits on the pole are operated and maintained by only one party.
- 2) All supply vertical runs other than ground wires are located entirely above the communication levels.
- 3) No ground wire runs are located within the climbing space except those portions which are located above the communications level.

B. Location of Steps

The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of the pole not exceeding 36 inches, at least to that conductor level above which only circuits operated and maintained by one party remain. Steps shall be so placed that runs or risers do not interfere with the free use of the steps.

APPENDIX B
ADDITIONAL RULES,
GENERAL ORDER No. 95
(Swimming Pool Clearances)

Definitions

New Rule 22.10 reads as follows:

- 22.10** **Swimming Pool** means that portion of any natural or artificially contained body of water which is 24 inches or more in depth at any point below the highest water level, which is intended for use for swimming, bathing or other similar recreational purposes, and which has a surface area exceeding 100 square feet.

Footnotes to Table 1

Table 1 footnote reference to rules modifying clearance (added to Cases 3, 4 and 5) reads:

- (ii) Special Clearances Required Above Public and Private Swimming Pools:
1. Supply line conductors Rule 54.4–A4
 2. Supply service drops Rule 54.8–B5
 3. Communication line conductors Rule 84.4–A5
 4. Communication service drops Rule 84.8–C5
 5. Supply guys, span wires Rule 56.4–A3
 6. Communication guys Rule 86.4–A3

Supply Line Conductors

New Rule 54.4A(4) reads as follows:

- (4) ABOVE SWIMMING POOLS: Crossings of conductors above swimming pools shall be avoided where practicable. Unprotected line conductors shall have radial clearances from the top edge of the swimming pool walls and vertical clearances above the highest water level of the pool surface not less than the clearances specified in Table 1, Case 3, Columns D, E and F.

Supply Service Drops

New Rule 54.8B(5) reads as follows:

- (5) ABOVE SWIMMING POOLS: Installations of service drops above public and private swimming pools shall be avoided where practicable. Where service drop conductors are installed above a swimming pool, the conductors shall have a radial clearance of not less than 20 feet from the top edge of the pool walls and shall have a vertical clearance of not less than 18 feet above the highest water level of the pool surface. Service drops having coverings of materials specially approved by the commission for installation above swimming pools may have vertical clearances above the pool and radial clearances from the top edge of the pool wall of not less than 16 feet for public and commercially operated pools and not less than 12 feet for residential pools.

No service drop may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No service drop may be installed less than 12 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 6 feet radially of the diving board or platform and not over the water surface of the pool.

Supply Guys

New Rules 56.4A(3) reads as follows:

- (3) ABOVE SWIMMING POOLS:
- a) Ungrounded portions of guys shall have radial clearances from the top edge of the swimming pool wall and vertical clearances above the highest water level of the pool of not less than 18 feet.

No ungrounded portion of guys may be installed less than 18 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No ungrounded portion of guys may be installed less than 12 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 6 feet

radially of the diving board or platform and not over the water surface of the pool.

- b) Grounded portions of guys shall have vertical clearances above the highest water level of the pool of not less than 16 feet.

No grounded portion of guys may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No grounded portion of guys may be installed less than 8 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

Communication Line Conductors

New Rule 84.4A(5) reads as follows:

- (5) ABOVE SWIMMING POOLS: Crossings of communication line conductors above swimming pools shall be avoided where practicable. Line conductors shall have radial clearances from the top edge of the pool wall and vertical clearances above the highest water level of the pool of not less than 18 feet. Grounded metallic sheathed cables, plastic-jacketed cables with an inner grounded metallic sheath, and grounded messengers and grounded span wires which support cable may have minimum radial and vertical clearances as hereinabove stated of not less than 16 feet.

Service drops having coverings of materials specially approved by the Commission for installation above swimming pools and used in line cable construction may have minimum radial and vertical clearances as hereinabove stated of not less than 14 feet.

Communication Service Drops

New Rule 84.8C(5) reads as follows:

- (5) ABOVE SWINNING POOLS: Service drop installations above swimming pools shall be avoided where practicable, where service drop conductors are installed above a swimming pool, the conductors shall have radial clearances from the top edge of the

pool walls of not less than 18 feet and shall have vertical clearances of not less than 18 feet above the highest water level of the pool. Service drops having coverings or materials specially approved by the Commission for installation above swimming pools may have vertical clearances above the pool and radial clearances from the top edge of the pool wall or not less than 14 feet for public and commercially operated pools and not less than 10 feet for residential pools.

No service drop may be installed less than 14 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No service drop may be installed less than 10 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

Communication Guys

New Rule 86.4A(3) reads as follows:

- (3) ABOVE SWIMMING POOLS: Guys shall have vertical clearances above the highest water level of the pool of not less than 16 feet.

No communications guy may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No communications guy may be installed less than 8 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

APPENDIX C
AUTHORIZED MATERIALS,
GENERAL ORDER NO. 95

Materials Permitted for Reduced Clearances Over Swimming Pools

1. The following conductor covering materials are authorized for 0-300 Volt service drop installations above swimming pools at the reduced clearances permitted in Rule 54. 8B(5):
 - a. Abrasion-resistant cables having a grounded metallic sheath, designated as armored service drop cable.
 - b. Neutral.-Supported Service Drop Cable manufactured in accordance with Standard No. WC-5-1961 or Standard No. WC-3-1959 of the National Electric Manufacturer Association.

2. The following conductor covering materials are authorized for communications drop installations above swimming pools at the reduced clearances permitted in Rule 84.8B(5) and Rule 84.8C(5), provided the voltage of such conductors is not more than 160 volts and the power transmitted does not exceed 50 watts.
 - a. Neoprene-jacketed, reinforced, rubber-insulated parallel conductor drop wire conforming to Rural Electrification Administration Specification PE-7, dated May, 1956, or to American Telephone and Telegraph Company Specification AT-7412, Issue 3, dated Jan. 12, 1960.
 - b. Conductors which are protected by weather-resistant, abrasion-resistant suitably insulated tubing throughout that portion of their length which is over the pool and within a 20-foot radius of the top edge of the pool wall.

APPENDIX D
CHANGE OF RULE 31.3
GENERAL ORDER NO. 95

31.3 Avoidance of Conflicts and Crossings

In locating and constructing lines, efforts shall be made to avoid creating any conflicts with other lines. Where it is not reasonably practicable to maintain a sufficient separation of the lines, conflicts may in many cases be avoided by means of joint pole construction.

In the construction of new lines care shall be taken to avoid all unnecessary crossings. Crossing requirements are covered in Sections X and XI.

Supply and communication lines other than lines on jointly used poles, shall not occupy the same side of the road (fence line construction excluded, i.e., where the fence is used as all or part of the supporting structure) unless the consent of existing party or parties is obtained, or where both sides of the road are already occupied by the same class of line.

Class H circuits shall not occupy both sides of thoroughfares except where special permission is obtained from the Public Utilities Commission, unless, prior to such construction the pole-setting line operator shall have filed with the Commission a description of the route and configuration of the lines involved and copies of letters showing mutual consent for such occupancy by all pole using line operators having serving areas or routes in the general vicinity of the length of thoroughfare concerned.

APPENDIX E
ADDITIONAL RULES,
GENERAL ORDER NO. 95
(Low Voltage Multiconductor Cable with Bare Neutral, 0-750 Volts)

54.10 Low Voltage Multiconductor Cable with Bare Neutral, 0-750 Volts

A. GENERAL

- (1) The following rules cover requirements for 0-750 volt multi conductor cable having a bare neutral and are supplemental to the other rules of this order.
- (2) The term "messenger" as defined in Rule 21.9 of this order when used in Rule 54.10 of this order includes the bare neutral conductor whenever such conductor serves both as a conductor and also as a principal supporting member of the cable.

B. POLE ARRANGEMENT AND CLEARANCES

- (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.
- (2) BETWEEN CONDUCTORS IN CABLES: No specified clearance is required between the insulated phase conductors and the bare neutral (see Rule 57.4C).
- (3) CONDUCTOR ARRANGEMENT: In parallel construction, cables shall not be attached to more than one side of a pole (there being four sides).
- (4) AT CABLE TERMINATIONS: The clearances required by Rule 54.10E of this order between a cable and unprotected line conductors shall not be held to apply between a cable (and its grounded messenger) and unprotected conductors of the same circuit on poles where unprotected conductors enter (or leave) a cable. On such poles no grounded messenger shall be less than 15 inches from centerline of the pole.

- (5) DEAD-END CONSTRUCTION: On poles with the messenger dead-ended in more than one direction, the grounded messenger or insulated phase conductors of the cable shall not be attached to more than two sides of the pole and shall be not less than 2 ½ inches from the surface of the pole. On the climbing space side, service drops shall not be supported within 15 inches of the surface of the pole. The climbing space shall be determined by Rule 54.10-F(3) of this order.

C. CONDUCTOR MATERIAL AND STRENGTH

- (1) INSULATION: The phase conductors including jumper connections shall be covered with an insulation suitable for the voltage involved and shall conform with the standards established by the Insulated Power Cable Engineers Association, in Part 1, Section 7.3 of "Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy", Insulated Power Cable Engineers Association Standard S-61-402, approved January 12, 1961, and National Electrical Manufacturers Association Standard WC5-1961, approved May 15, 1961.
- (2) MESSENGER: Where cables are not maintained from a cable chair, the addition of the 200 pounds of vertical load specified in Rule 49.7C may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

D. CONDUCTOR SPACING

A vertical separation between individual conductors when supported in individual clevises or a multiconductor rack shall be not less than 6 inches.

E. VERTICAL CLEARANCE BETWEEN CONDUCTOR LEVELS

When attached to poles or wood crossarms at less than 15 inches from center line of pole, bare neutral multiconductor cable shall be not less than 6 feet vertically above or 6 feet vertically below unprotected conductors except as modified below:

- (1) WITH GUARD ARM BELOW CONDUCTORS OF 0-750 VOLTS: Where a guard arm is placed above bare neutral multiconductor cable in accordance with the provisions of Rule 57.7, the clearance of 6 feet may be reduced to not

less than 4 feet below unprotected conductors of 0-750 volts.

- (2) ABOVE CONDUCTORS OF 0-750 VOLTS MORE THAN 15 INCHES FROM CENTER LINE OF POLE: The vertical clearance between protected conductors of 0-750 volts attached at more than 15 inches from the center line of pole and bare neutral multiconductor cable above may be less than 6 feet but not less than 4 feet and no guard arm is required.
- (3) UNDER A TRANSFORMER: No guard arm will be required over bare neutral multiconductor cable attached to the surface of a pole directly below a transformer installation provided that at that level all attachments to the pole shall be approximately in the vertical plane through the center lines of pole and transformer installation and no cable so attached makes an angle greater than 60 degrees with that plane. The cable so supported shall have a vertical clearance of not less than 48 inches below the level of conductors on the hanger arm; a vertical clearance not less than as specified in Rule 54.4-C (6) below the lowest point of the drip loop of primary leads to the transformer; and a vertical clearance of not less than 10 inches below the lowest part of the transformer case or hangers.
- (4) RELATED BARE NEUTRAL MULTICONDUCTOR CABLE AND CROSSARM: Where bare neutral multiconductor cable is connected to conductors supported on a crossarm on the same pole, the vertical clearance between the level of conductors of 0-750 volts on the crossarm and the bare neutral multiconductor cable shall be not less than 2 feet and climbing space shall be maintained in the same quadrant OJ: on the same side of pole through both conductor levels in accordance with climbing space requirements in Rules 54.7 and 54.10-F. This provision is not applicable where the crossarm is a combination arm.

F. CLIMBING SPACE

- (1) A climbing space shall be maintained through the level of conductors supported in bare neutral multiconductor cable construction and for a vertical distance of not less than 4 feet above and below such cable. The position of the

climbing space through the levels of conductors in such cable construction shall be related to climbing space for conductor levels above and below the cable in accordance with Rules 54.7 -A and 93. The depth of the climbing space shall be measured from the center line of the pole.

- (2) The dimensions of the climbing space shall be 30 inches square, and shall be provided on one side of the pole with the extremities of such width equidistant from the center line of pole. On poles on which transformers are pole bolted in line with primary conductors, a 30inch square climbing space shall be provided.
- (3) On poles with the messenger dead-ended and on corner poles, a 30-inch climbing space shall be provided in one quadrant or on one side of the pole. Suitably protected vertical runs or risers and ground wires attached to the surface of poles, and guys, are allowed in climbing spaces provided that no more than one guy or one vertical riser, run or ground wire are installed in any 4-foot vertical section of climbing space. The terminals or terminal fittings of risers or runs shall not be installed within climbing spaces.

G. SERVICE DROPS

Phase conductors of service drops taken from bare neutral multiconductor cables shall have insulation equivalent to that specified in Rule 54.10-C(1). Where service drops are supported on ACSR or aluminum messenger, the messenger shall be protected against abrasion. Services supported on the messenger shall be attached not less than 15 inches from the surface of the pole.

H. FASTENINGS

In the application of Rule 57.5, where cables are not maintained from a cable chair, the addition of 200 pounds vertical load, specified in Rule 49.7 -C may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

I. EXTENDED MESSENGER

Messengers may be extended in bare neutral multiconductor cable construction provided the messenger is sectionalized as a guy.

J. SAGS

In the application of Rule 57.9 the 200-pound additional vertical loading specified for a man and cable chair may be reduced to 50 pounds where the cable is not maintained from a cable chair.

Note Strikeout and Underline Section added by Raymond G. Fugere on April 2, 2002

Original Version

Rule 22.10

New Rule

Strikeout and Underline Version

Rule 22.10

22.10 Swimming Pool means that portion of any natural or artificially contained body of water which is 24 inches or more in depth at any point below the highest water level, which is intended for use for swimming, bathing or other similar recreational purposes, and which has a surface area exceeding 100 square feet.

Final version

Rule 22.10

22.10 **Swimming Pool** means that portion of any natural or artificially contained body of water which is 24 inches or more in depth at any point below the highest water level, which is intended for use for swimming, bathing or other similar recreational purposes, and which has a surface area exceeding 100 square feet.

Original Version
Rule 31.3

31.3 Avoidance of Conflicts and Crossings

In locating and constructing lines efforts shall be made to avoid creating any conflicts with other lines. Where it is not reasonably practicable to maintain a sufficient separation of the lines, conflicts may in many cases be avoided by means of joint pole construction.

In the construction of new lines care shall be taken to avoid all unnecessary crossings. Crossings requirements are covered in Sections X and XI.

Supply and communication lines other than lines on jointly used poles, shall not occupy the same side of the road (fence line construction excluded, i.e., where the fence is used as all or part of the supporting structure) unless the consent of existing party or parties is obtained, or where both sides of the road are already occupied by the same class of line.

Class H circuits shall not occupy both sides of thoroughfares except where special permission is obtained from the Railroad Commission.

Strikeout and Underline Version

Rule 31.3

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Class H circuits shall not occupy both sides of thoroughfares except where special permission is obtained from the Public Utilities Commission, unless, prior to such construction the pole-setting line operator shall have filed with the Commission a description of the route and configuration of the lines involved and copies of letters showing mutual consent for such occupancy by all pole using line operators having serving areas or routes in the general vicinity of the length of thoroughfare concerned.

Final Version

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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
(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, 750-20,000 volts	F Supply Conductors and supply cables more than 20,000 volts
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
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)
3	Crossing or along thoroughfares in Urban districts or crossings thoroughfares in rural districts (c) (d)	18 ft (j) (k)	18 ft (j) (l) (m)	19 ft (hh)	20 ft	25 ft (n) (o)	30 ft (o)
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)
5	Vertical ground in areas accessible to pedestrians only.	7 ft	10 ft (m) (q)	19 ft	12 ft	17 ft	25 ft (o)
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
7	Horizontal clearance of conductor from buildings (except generating and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto. (a) (t)	-----	3 ft (u)	3 ft	3 ft (u) (v)	6 ft (v)	6 ft (v)
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 (aa) (dd)	15 or 18 in (dd) (ee)	18 in (dd) (ee)
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)

(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 conditions	84.4-A4
(n)	May be reduced in rural districts 1. Supply conductors, 750-20,000 volts, crossing roads or driveways 2. Supply conductors, 750-2000 volts, above agricultural areas and along roads 3. Communication conductors along roads	54.4-A2a 54.4-A2b 84.4-A2
(o)	May be reduced for transformer, regulator or capacitor leads. 1. Transformer Leads 2. Regulator or Capacitor Leads	58.3-B1a 58.4-B1
(p)	May be reduced across arid or mountainous areas 1. Supply Conductors of more than 20, 000 Volts 2. Communication conductors	54.4-A1 84.4-A1

(q)	<p>Shall be increased or may be reduced under special conditions.</p> <ol style="list-style-type: none"> 1. Increased for supply service drops on industrial or commercial premises 2. Supply service drops on residential premises 3. Communication conductors 4. Increased for Communication service drops on industrial or commercial premises 5. Communication service drops on residential premises 	<p>54.8-B3a 54.8-B3b 84.4-A3 84.8-C3a 84.8-C3b</p>
(r)	<p>May be reduced above roofs of buildings under special conditions</p> <ol style="list-style-type: none"> 1. Supply overhead guys 2. Supply service drops 3. Communication overhead guys 4. Communication conductors and cables 5. Communication service drops 	<p>56.4-G 54.8-B4 86.4-F 84.4-E 84.8-C4</p>
(s)	<p>Also applies at fire escapes, etc.</p> <ol style="list-style-type: none"> 1. Supply Conductors 2. Supply service drops on industrial or commercial premises 3. Supply service drops on residential premises 4. Communication Conductor 	<p>54.4-H1 54.8-B4a 54.8-B4b 84.4-E</p>
(t)	<p>Special Clearances where attached to buildings, bridges or other structures</p> <ol style="list-style-type: none"> 1. Supply conductors of 750-20,000 volts 2. Trolley Contact Conductors 3. Communication Conductors 	<p>54.4-H2 74.4-E 84.4-F</p>
(u)	<p>Reduced clearances permitted under special conditions</p> <ol style="list-style-type: none"> 1. Supply service drops on industrial or commercial premises 2. Supply cables, grounded 3. Communication cables beside buildings, etc. 4. Communication conductors under bridges, etc. 5. Communication service drops. 	<p>54.8-B4a 57.4-G 84.4-E 84.4-F 84.8-C4</p>
(v)	<p>May be reduced under special conditions.</p> <ol style="list-style-type: none"> 1. Supply conductors of 750-7500 volts 2. Supply transformer lead and bus wires where guarded 	<p>54.4-H1 58.3-B2</p>
(w)	<p>May be reduced at angles in lines and transportation points</p> <ol style="list-style-type: none"> 1. Supply conductors 2. Communication Conductors 	<p>54.4-D1 84.4-D5</p>
(x)	<p>May be reduced for suitably protected lateral or vertical runs.</p> <ol style="list-style-type: none"> 1. Supply bond wires 2. Supply ground wires 3. Supply lateral conductors 4. Supply vertical pins 5. Supply risers 6. Communication Ground Wires 7. Communication lateral conductors 8. Communication vertical runs 9. Communication risers 	<p>53.4 54.6-B 54.6-C 54.6-D 54.6-E 84.6-B 84.6-C 84.6-D 84.6-E</p>

(y)	<p>Increased clearances for certain conductors</p> <ol style="list-style-type: none"> 1. Unattached conductors on colinear lines and crossing lines 2. Unattached supply conductors 3. Supply Service drops on clearance crossarms 4. Supply Service drops on pole top extensions 5. Unattached Supply service drops 6. Communication lines, collinear, conflicting or crossing 7. Communication conductors passing supply poles and unattached thereto 8. Communication service drops on clearance crossarms 9. Communication service drops on pole top extensions 10. Unattached Communication service drops 	<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>	<p>92.2</p>
(aa)	<p>May be reduced under special provisions.</p> <ol style="list-style-type: none"> 1. Supply conductors of 0-750 volts in rack configuration 2. Supply service drops from racks 3. Supply cables and messengers attached to poles 4. Communication conductors on communication poles 5. Communication conductors on crossarms 6. Communication conductors attached to poles 7. Communication service drops attached to poles 8. Communication cables and messengers 9. Supply or communication cables and messengers on jointly used poles 10. Communication service drops on pole top extensions 	<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> <p>92.1-C</p>
(bb)	<p>May be reduced for Class T conductors of not more than 750 volts and of the same potential and polarity</p>	<p>74.4-D</p>
(cc)	<p>Not applicable to trolley span wires</p>	<p>77.4-E</p>
(dd)	<p>Special clearances for pole-top and dead-end construction</p> <ol style="list-style-type: none"> 1. Conductors dead-ended in vertical configuration on poles 2. Conductors dead-ended in horizontal configuration 3. Conductors in pole-top construction 	<p>54.4-C4</p> <p>54.4-D7</p> <p>54.4-D8</p>
(ee)	<p>Clearance requirements for certain voltage classifications</p>	<p>54.4-D2</p>
(ff)	<p>Not applicable to communication conductors</p>	<p>84.4-D</p>
(gg)	<p>Clearance from crossarms may be reduced for certain conductors</p> <ol style="list-style-type: none"> 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 	<p>54.4-E</p> <p>54.4-E</p> <p>58.5-C</p>
(hh)	<p>Reduced clearance permitted from temporary fixtures and lighting circuits 0-300 volts</p>	<p>78.3A(1)</p>

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
(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, 750-20,000 volts	F Supply Conductors and supply cables more than 20,000 volts
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
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)
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 (hh)	20 ft (ii)	25 ft (n) (o) (ii)	30 ft (o) (ii)
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)
5	Vertical ground in areas accessible to pedestrians only.	7 ft	10 ft (m) (q)	19 ft	12 ft	17 ft	25 ft (o)
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
7	Horizontal clearance of conductor from buildings (except generating and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto. (a) (t)	-----	3 ft (u)	3 ft	3 ft (u) (v)	6 ft (v)	6 ft (v)
8	Distance of conductor from center line of pole, wheter attached or unattached (w) (x) (y)	-----	15 in (a) (aa)	15 in (aa) (bb) (cc)	15 in (aa) (dd)	15 or 18 in (dd) (ee)	18 in (dd) (ee)
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)

(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 conditions	84.4-A4
(n)	May be reduced in rural districts 1. Supply conductors, 750-20,000 volts, crossing roads or driveways 2. Supply conductors, 750-2000 volts, above agricultural areas and along roads 3. Communication conductors along roads	54.4-A2a 54.4-A2b 84.4-A2
(o)	May be reduced for transformer, regulator or capacitor leads. 1. Transformer Leads 2. Regulator or Capacitor Leads	58.3-B1a 58.4-B1
(p)	May be reduced across arid or mountainous areas 1. Supply Conductors of more than 20, 000 Volts 2. Communication conductors	54.4-A1 84.4-A1

(q)	<p>Shall be increased or may be reduced under special conditions.</p> <ol style="list-style-type: none"> 1. Increased for supply service drops on industrial or commercial premises 2. Supply service drops on residential premises 3. Communication conductors 4. Increased for Communication service drops on industrial or commercial premises 5. Communication service drops on residential premises 	<p>54.8-B3a 54.8-B3b 84.4-A3 84.8-C3a 84.8-C3b</p>
(r)	<p>May be reduced above roofs of buildings under special conditions</p> <ol style="list-style-type: none"> 1. Supply overhead guys 2. Supply service drops 3. Communication overhead guys 4. Communication conductors and cables 5. Communication service drops 	<p>56.4-G 54.8-B4 86.4-F 84.4-E 84.8-C4</p>
(s)	<p>Also applies at fire escapes, etc.</p> <ol style="list-style-type: none"> 1. Supply Conductors 2. Supply service drops on industrial or commercial premises 3. Supply service drops on residential premises 4. Communication Conductor 	<p>54.4-H1 54.8-B4a 54.8-B4b 84.4-E</p>
(t)	<p>Special Clearances where attached to buildings, bridges or other structures</p> <ol style="list-style-type: none"> 1. Supply conductors of 750-20,000 volts 2. Trolley Contact Conductors 3. Communication Conductors 	<p>54.4-H2 74.4-E 84.4-F</p>
(u)	<p>Reduced clearances permitted under special conditions</p> <ol style="list-style-type: none"> 1. Supply service drops on industrial or commercial premises 2. Supply cables, grounded 3. Communication cables beside buildings, etc. 4. Communication conductors under bridges, etc. 5. Communication service drops. 	<p>54.8-B4a 57.4-G 84.4-E 84.4-F 84.8-C4</p>
(v)	<p>May be reduced under special conditions.</p> <ol style="list-style-type: none"> 1. Supply conductors of 750-7500 volts 2. Supply transformer lead and bus wires where guarded 	<p>54.4-H1 58.3-B2</p>
(w)	<p>May be reduced at angles in lines and transportation points</p> <ol style="list-style-type: none"> 1. Supply conductors 2. Communication Conductors 	<p>54.4-D1 84.4-D5</p>
(x)	<p>May be reduced for suitably protected lateral or vertical runs.</p> <ol style="list-style-type: none"> 1. Supply bond wires 2. Supply ground wires 3. Supply lateral conductors 4. Supply vertical pins 5. Supply risers 6. Communication Ground Wires 7. Communication lateral conductors 8. Communication vertical runs 9. Communication risers 	<p>53.4 54.6-B 54.6-C 54.6-D 54.6-E 84.6-B 84.6-C 84.6-D 84.6-E</p>

(y)	<p>Increased clearances for certain conductors</p> <ol style="list-style-type: none"> 1. Unattached conductors on colinear lines and crossing lines 2. Unattached supply conductors 3. Supply Service drops on clearance crossarms 4. Supply Service drops on pole top extensions 5. Unattached Supply service drops 6. Communication lines, collinear, conflicting or crossing 7. Communication conductors passing supply poles and unattached thereto 8. Communication service drops on clearance crossarms 9. Communication service drops on pole top extensions 10. Unattached Communication service drops 	<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)	Special provisions for police and fire alarm conductors require increased clearances	92.2
(aa)	<p>May be reduced under special provisions.</p> <ol style="list-style-type: none"> 1. Supply conductors of 0-750 volts in rack configuration 2. Supply service drops from racks 3. Supply cables and messengers attached to poles 4. Communication conductors on communication poles 5. Communication conductors on crossarms 6. Communication conductors attached to poles 7. Communication service drops attached to poles 8. Communication cables and messengers 9. Supply or communication cables and messengers on jointly used poles 10. Communication service drops on pole top extensions 	<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> <p>92.1-C</p>
(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)	<p>Special clearances for pole-top and dead-end construction</p> <ol style="list-style-type: none"> 1. Conductors dead-ended in vertical configuration on poles 2. Conductors dead-ended in horizontal configuration 3. Conductors in pole-top construction 	<p>54.4-C4</p> <p>54.4-D7</p> <p>54.4-D8</p>
(ee)	Clearance requirements for certain voltage classifications	54.4-D2
(ff)	Not applicable to communication conductors	84.4-D
(gg)	<p>Clearance from crossarms may be reduced for certain conductors</p> <ol style="list-style-type: none"> 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 	<p>54.4-E</p> <p>54.4-E</p> <p>58.5-C</p>
(hh)	Reduced clearance permitted from temporary fixtures and lighting circuits 0-300 volts	78.3A(1)
(ii)	<p><u>Special Clearances Required Above Public and Private Swimming Pools:</u></p> <ol style="list-style-type: none"> 1. <u>Supply line conductors</u> 2. <u>Supply service drops</u> 3. <u>Communication line conductors</u> 4. <u>Communication service drops</u> 5. <u>Supply guys, span wires</u> 6. <u>Communication guys</u> 	<p><u>54.4-A4</u></p> <p><u>54.8-B5</u></p> <p><u>84.4-A5</u></p> <p><u>84.8-C5</u></p> <p><u>56.4-A3</u></p> <p><u>86.4-A3</u></p>

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
(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, 750-20,000 volts	F Supply Conductors and supply cables more than 20,000 volts
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
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)
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 (hh)	20 ft (ii)	25 ft (n) (o) (ii)	30 ft (o) (ii)
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)
5	Vertical ground in areas accessible to pedestrians only.	7 ft	10 ft (m) (q)	19 ft	12 ft	17 ft	25 ft (o)
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
7	Horizontal clearance of conductor from buildings (except generating and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto. (a) (t)	-----	3 ft (u)	3 ft	3 ft (u) (v)	6 ft (v)	6 ft (v)
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 (aa) (dd)	15 or 18 in (dd) (ee)	18 in (dd) (ee)
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)

(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 conditions	84.4-A4
(n)	May be reduced in rural districts 1. Supply conductors, 750-20,000 volts, crossing roads or driveways 2. Supply conductors, 750-2000 volts, above agricultural areas and along roads 3. Communication conductors along roads	54.4-A2a 54.4-A2b 84.4-A2
(o)	May be reduced for transformer, regulator or capacitor leads. 1. Transformer Leads 2. Regulator or Capacitor Leads	58.3-B1a 58.4-B1
(p)	May be reduced across arid or mountainous areas 1. Supply Conductors of more than 20, 000 Volts 2. Communication conductors	54.4-A1 84.4-A1

(q)	<p>Shall be increased or may be reduced under special conditions.</p> <ol style="list-style-type: none"> 1. Increased for supply service drops on industrial or commercial premises 2. Supply service drops on residential premises 3. Communication conductors 4. Increased for Communication service drops on industrial or commercial premises 5. Communication service drops on residential premises 	<p>54.8-B3a 54.8-B3b 84.4-A3 84.8-C3a 84.8-C3b</p>
(r)	<p>May be reduced above roofs of buildings under special conditions</p> <ol style="list-style-type: none"> 1. Supply overhead guys 2. Supply service drops 3. Communication overhead guys 4. Communication conductors and cables 5. Communication service drops 	<p>56.4-G 54.8-B4 86.4-F 84.4-E 84.8-C4</p>
(s)	<p>Also applies at fire escapes, etc.</p> <ol style="list-style-type: none"> 1. Supply Conductors 2. Supply service drops on industrial or commercial premises 3. Supply service drops on residential premises 4. Communication Conductor 	<p>54.4-H1 54.8-B4a 54.8-B4b 84.4-E</p>
(t)	<p>Special Clearances where attached to buildings, bridges or other structures</p> <ol style="list-style-type: none"> 1. Supply conductors of 750-20,000 volts 2. Trolley Contact Conductors 3. Communication Conductors 	<p>54.4-H2 74.4-E 84.4-F</p>
(u)	<p>Reduced clearances permitted under special conditions</p> <ol style="list-style-type: none"> 1. Supply service drops on industrial or commercial premises 2. Supply cables, grounded 3. Communication cables beside buildings, etc. 4. Communication conductors under bridges, etc. 5. Communication service drops. 	<p>54.8-B4a 57.4-G 84.4-E 84.4-F 84.8-C4</p>
(v)	<p>May be reduced under special conditions.</p> <ol style="list-style-type: none"> 1. Supply conductors of 750-7500 volts 2. Supply transformer lead and bus wires where guarded 	<p>54.4-H1 58.3-B2</p>
(w)	<p>May be reduced at angles in lines and transportation points</p> <ol style="list-style-type: none"> 1. Supply conductors 2. Communication Conductors 	<p>54.4-D1 84.4-D5</p>
(x)	<p>May be reduced for suitably protected lateral or vertical runs.</p> <ol style="list-style-type: none"> 1. Supply bond wires 2. Supply ground wires 3. Supply lateral conductors 4. Supply vertical pins 5. Supply risers 6. Communication Ground Wires 7. Communication lateral conductors 8. Communication vertical runs 9. Communication risers 	<p>53.4 54.6-B 54.6-C 54.6-D 54.6-E 84.6-B 84.6-C 84.6-D 84.6-E</p>
(y)	<p>Increased clearances for certain conductors</p> <ol style="list-style-type: none"> 1. Unattached conductors on colinear lines and crossing lines 2. Unattached supply conductors 3. Supply Service drops on clearance crossarms 4. Supply Service drops on pole top extensions 5. Unattached Supply service drops 6. Communication lines, collinear, conflicting or crossing 7. Communication conductors passing supply poles and unattached thereto 8. Communication service drops on clearance crossarms 9. Communication service drops on pole top extensions 10. Unattached Communication service drops 	<p>32.3 54.4D3 54.8-C2 54.8-C3 54.8-D 84.4-D3 84.4-D4 84.8-D2 84.8-D3 84.8-E</p>

(z)	Special provisions for police and fire alarm conductors require increased clearances	92.2
(aa)	May be reduced under special provisions. 1. Supply conductors of 0-750 volts in rack configuration 2. Supply service drops from racks 3. Supply cables and messengers attached to poles 4. Communication conductors on communication poles 5. Communication conductors on crossarms 6. Communication conductors attached to poles 7. Communication service drops attached to poles 8. Communication cables and messengers 9. Supply or communication cables and messengers on jointly used poles 10. Communication service drops on pole top extensions	54.4-D5 54.8-F 57.4-F 84.4-D 84.4-D1 84.4-D2 84.8-B 87.4-D 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

Original Version

Rule 54.4-A4

New Rule

Strikeout and Underline Version

Rule 54.4-A4

54.4-A Above Ground

- (4) ABOVE SWIMMING POOLS: Crossings of conductors above swimming pools shall be avoided where practicable. Unprotected line conductors shall have radial clearances from the top edge of the swimming pool walls and vertical clearances above the highest water level of the pool surface not less than the clearances specified in Table 1, Case 3, Columns D, E and F.

Final Version

Rule 54.4-A4

54.4-A Above Ground

- (4) ABOVE SWIMMING POOLS: Crossings of conductors above swimming pools shall be avoided where practicable. Unprotected line conductors shall have radial clearances from the top edge of the swimming pool walls and vertical clearances above the highest water level of the pool surface not less than the clearances specified in Table 1, Case 3, Columns D, E and F.

Original Version

Rule 54.8-B5

New Rule

Strikeout and Underline Version

Rule 54.8-B5

54.8-B Clearances Above Ground, Buildings, Etc.

(5) ABOVE SWIMMING POOLS: Installations of service drops above public and private swimming pools shall be avoided where practicable. Where service drop conductors are installed above a swimming pool, the conductors shall have a radial clearance of not less than 20 feet from the top edge of the pool walls and shall have a vertical clearance of not less than 18 feet above the highest water level of the pool surface. Service drops having coverings of materials specially approved by the commission for installation above swimming pools may have vertical clearances above the pool and radial clearances from the top edge of the pool wall of not less than 16 feet for public and commercially operated pools and not less than 12 feet for residential pools.

No service drop may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No service drop may be installed less than 12 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

Final Version

Rule 54.8-B5

54.8-B Clearances Above Ground, Buildings, Etc.

- (5) ABOVE SWIMMING POOLS: Installations of service drops above public and private swimming pools shall be avoided where practicable. Where service drop conductors are installed above a swimming pool, the conductors shall have a radial clearance of not less than 20 feet from the top edge of the pool walls and shall have a vertical clearance of not less than 18 feet above the highest water level of the pool surface. Service drops having coverings of materials specially approved by the commission for installation above swimming pools may have vertical clearances above the pool and radial clearances from the top edge of the pool wall of not less than 16 feet for public and commercially operated pools and not less than 12 feet for residential pools.

No service drop may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No service drop may be installed less than 12 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within .3 feet radially of the diving board or platform and not over the water surface of the pool.

Original Version

Rule 54.10

New Rule

Strikeout and Underline Version

Rule 54.10

54.10 Low Voltage Multiconductor Cable with Bare Neutral, 0-750 Volts

A. GENERAL

- (1) The following rules cover requirements for 0-750 volt multi conductor cable having a bare neutral and are supplemental to the other rules of this order.
- (2) The term "messenger" as defined in Rule 21.9 of this order when used in Rule 54.10 of this order includes the bare neutral conductor whenever such conductor serves both as a conductor and also as a principal supporting member of the cable.

B. POLE ARRANGEMENT AND CLEARANCES

- (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.
- (2) BETWEEN CONDUCTORS IN CABLES: No specified clearance is required between the insulated phase conductors and the bare neutral (see Rule 57.4C).
- (3) CONDUCTOR ARRANGEMENT: In parallel construction, cables shall not be attached to more than one side of a pole (there being four sides).
- (4) AT CABLE TERMINATIONS: The clearances required by Rule 54.10E of this order between a cable and unprotected line conductors shall not be held to apply between a cable (and its grounded messenger) and unprotected conductors of the same circuit on poles where unprotected conductors enter (or leave) a cable. On such poles no grounded messenger shall be less than 15 inches from centerline of the pole.
- (5) DEAD-END CONSTRUCTION: On poles with the messenger dead-ended in more than one direction, the grounded messenger or insulated phase conductors of the cable shall not be attached to more than two sides of the pole and shall be not less than 2 ½ inches from the surface of the pole. On the climbing space side, service drops shall not be supported within 15 inches of the

surface of the pole. The climbing space shall be determined by Rule 54.10-F(3) of this order.

C. CONDUCTOR MATERIAL AND STRENGTH

- (1) INSULATION: The phase conductors including jumper connections shall be covered with an insulation suitable for the voltage involved and shall conform with the standards established by the Insulated Power Cable Engineers Association, in Part 1, Section 7.3 of "Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy", Insulated Power Cable Engineers Association Standard S-61-402, approved January 12, 1961, and National Electrical Manufacturers Association Standard WC5-1961, approved May 15, 1961.
- (2) MESSENGER: Where cables are not maintained from a cable chair, the addition of the 200 pounds of vertical load specified in Rule 49.7C may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

D. CONDUCTOR SPACING

A vertical separation between individual conductors when supported in individual clevises or a multiconductor rack shall be not less than 6 inches.

E. VERTICAL CLEARANCE BETWEEN CONDUCTOR LEVELS

When attached to poles or wood crossarms at less than 15 inches from center line of pole, bare neutral multiconductor cable shall be not less than 6 feet vertically above or 6 feet vertically below unprotected conductors except as modified below:

- (1) WITH GUARD ARM BELOW CONDUCTORS OF 0-750 VOLTS: Where a guard arm is placed above bare neutral multiconductor cable in accordance with the provisions of Rule 57.7, the clearance of 6 feet may be reduced to not less than 4 feet below unprotected conductors of 0-750 volts.
- (2) ABOVE CONDUCTORS OF 0-750 VOLTS MORE THAN 15 INCHES FROM CENTER LINE OF POLE: The vertical clearance between protected conductors of 0-750 volts attached at more than 15 inches from the center line of a pole and bare neutral multiconductor cable above may be less than 6 feet but not less than 4 feet and no guard arm is required.
- (3) UNDER A TRANSFORMER: No guard arm will be required over bare neutral multiconductor cable attached to the surface of a pole directly below a transformer installation provided that at that level all attachments to the pole shall be approximately in the vertical plane through the center lines of pole and transformer installation and no cable so attached makes an angle greater than 60 degrees with that plane. The cable so supported shall have a vertical clearance of not less than 48 inches below the level of conductors

on the hanger arm; a vertical clearance not less than as specified in Rule 54.4-C (6) below the lowest point of the drip loop of primary leads to the transformer; and a vertical clearance of not less than 10 inches below the lowest part of the transformer case or hangers.

- (4) RELATED BARE NEUTRAL MULTICONDUCTOR CABLE AND CROSSARM: Where bare neutral multiconductor cable is connected to conductors supported on a crossarm on the same pole, the vertical clearance between the level of conductors of 0-750 volts on the crossarm and the bare neutral multiconductor cable shall be not less than 2 feet and climbing space shall be maintained in the same quadrant OJ: on the same side of pole through both conductor levels in accordance with climbing space requirements in Rules 54.7 and 54.10-F. This provision is not applicable where the crossarm is a combination arm.

F. CLIMBING SPACE

- (1) A climbing space shall be maintained through the level of conductors supported in bare neutral multiconductor cable construction and for a vertical distance of not less than 4 feet above and below such cable. The position of the climbing space through the levels of conductors in such cable construction shall be related to climbing space for conductor levels above and below the cable in accordance with Rules 54.7 -A and 93. The depth of the climbing space shall be measured from the center line of the pole.
- (2) The dimensions of the climbing space shall be 30 inches square, and shall be provided on one side of the pole with the extremities of such width equidistant from the center line of pole. On poles on which transformers are pole bolted in line with primary conductors, a 30inch square climbing space shall be provided.
- (3) On poles with the messenger dead-ended and on corner poles, a 30-inch climbing space shall be provided in one quadrant or on one side of the pole. Suitably protected vertical runs or risers and ground wires attached to the surface of poles, and guys, are allowed in climbing spaces provided that no more than one guy or one vertical riser, run or ground wire are installed in any 4-foot vertical section of climbing space. The terminals or terminal fittings of risers or runs shall not be installed within climbing spaces.

G. SERVICE DROPS

Phase conductors of service drops taken from bare neutral multiconductor cables shall have insulation equivalent to that specified in Rule 54.10-C(1). Where service drops are supported on ACSR or aluminum messenger, the messenger shall be protected against abrasion. Services supported on the messenger shall be attached not less than 15 inches from the surface of the pole.

H. FASTENINGS

In the application of Rule 57.5, where cables are not maintained from a cable chair, the addition of 200 pounds vertical load, specified in Rule 49.7 -C may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

I. EXTENDED MESSENGER

Messengers may be extended in bare neutral multiconductor cable construction provided the messenger is sectionalized as a guy.

J. SAGS

In the application of Rule 57.9 the 200-pound additional vertical loading specified for a man and cable chair may be reduced to 50 pounds where the cable is not maintained from a cable chair.

Final Version

Rule 54.10

54.10 Low Voltage Multiconductor Cable with Bare Neutral, 0-750 Volts

A. GENERAL

- (1) The following rules cover requirements for 0-750 volt multi conductor cable having a bare neutral and are supplemental to the other rules of this order.
- (2) The term "messenger" as defined in Rule 21.9 of this order when used in Rule 54.10 of this order includes the bare neutral conductor whenever such conductor serves both as a conductor and also as a principal supporting member of the cable.

B. POLE ARRANGEMENT AND CLEARANCES

- (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.
- (2) BETWEEN CONDUCTORS IN CABLES: No specified clearance is required between the insulated phase conductors and the bare neutral (see Rule 57.4C).
- (3) CONDUCTOR ARRANGEMENT: In parallel construction, cables shall not be attached to more than one side of a pole (there being four sides).
- (4) AT CABLE TERMINATIONS: The clearances required by Rule 54.10E of this order between a cable and unprotected line conductors shall not be held to apply between a cable (and its grounded messenger) and unprotected conductors of the same circuit on poles where unprotected conductors enter (or leave) a cable. On such poles no grounded messenger shall be less than 15 inches from centerline of the pole.
- (5) DEAD-END CONSTRUCTION: On poles with the messenger dead-ended in more than one direction, the grounded messenger or insulated phase conductors of the cable shall not be attached to more than two sides of the pole and shall be not less than 2 ½ inches from the surface of the pole. On the climbing space side, service drops shall not be supported within 15 inches of the surface of the pole. The climbing space shall be determined by Rule 54.10-F(3) of this order.

C. CONDUCTOR MATERIAL AND STRENGTH

- (1) INSULATION: The phase conductors including jumper connections shall be covered with an insulation suitable for the voltage involved and shall conform with the standards established by the Insulated Power Cable Engineers Association, in Part 1, Section 7.3 of "Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy", Insulated Power Cable Engineers Association Standard S-61-402, approved January 12, 1961, and National Electrical Manufacturers Association Standard WC5-1961, approved May 15, 1961.
- (2) MESSENGER: Where cables are not maintained from a cable chair, the addition of the 200 pounds of vertical load specified in Rule 49.7C may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

D. CONDUCTOR SPACING

A vertical separation between individual conductors when supported in individual clevises or a multiconductor rack shall be not less than 6 inches.

E. VERTICAL CLEARANCE BETWEEN CONDUCTOR LEVELS

When attached to poles or wood crossarms at less than 15 inches from center line of pole, bare neutral multiconductor cable shall be not less than 6 feet vertically above or 6 feet vertically below unprotected conductors except as modified below:

- (1) WITH GUARD ARM BELOW CONDUCTORS OF 0-750 VOLTS: Where a guard arm is placed above bare neutral multiconductor cable in accordance with the provisions of Rule 57.7, the clearance of 6 feet may be reduced to not less than 4 feet below unprotected conductors of 0-750 volts.
- (2) ABOVE CONDUCTORS OF 0-750 VOLTS MORE THAN 15 INCHES FROM CENTER LINE OF POLE: The vertical clearance between protected conductors of 0-750 volts attached at more than 15 inches from the center line of a pole and bare neutral multiconductor cable above may be less than 6 feet but not less than 4 feet and no guard arm is required.
- (3) UNDER A TRANSFORMER: No guard arm will be required over bare neutral multiconductor cable attached to the surface of a pole directly below a transformer installation provided that at that level all attachments to the pole shall be approximately in the vertical plane through the center lines of pole and transformer installation and no cable so attached makes an angle greater than 60 degrees with that plane. The cable so supported shall have a vertical clearance of not less than 48 inches below the level of conductors on the hanger arm; a vertical clearance not less than as specified in Rule 54.4-C (6) below the lowest point of the drip loop of primary leads to the transformer; and a vertical clearance of not less than 10 inches below the lowest part of the transformer case or hangers.

- (4) RELATED BARE NEUTRAL MULTICONDUCTOR CABLE AND CROSSARM: Where bare neutral multiconductor cable is connected to conductors supported on a crossarm on the same pole, the vertical clearance between the level of conductors of 0-750 volts on the crossarm and the bare neutral multiconductor cable shall be not less than 2 feet and climbing space shall be maintained in the same quadrant OJ: on the same side of pole through both conductor levels in accordance with climbing space requirements in Rules 54.7 and 54.10-F. This provision is not applicable where the crossarm is a combination arm.

F. CLIMBING SPACE

- (1) A climbing space shall be maintained through the level of conductors supported in bare neutral multiconductor cable construction and for a vertical distance of not less than 4 feet above and below such cable. The position of the climbing space through the levels of conductors in such cable construction shall be related to climbing space for conductor levels above and below the cable in accordance with Rules 54.7 -A and 93. The depth of the climbing space shall be measured from the center line of the pole.
- (2) The dimensions of the climbing space shall be 30 inches square, and shall be provided on one side of the pole with the extremities of such width equidistant from the center line of pole. On poles on which transformers are pole bolted in line with primary conductors, a 30inch square climbing space shall be provided.
- (3) On poles with the messenger dead-ended and on corner poles, a 30-inch climbing space shall be provided in one quadrant or on one side of the pole. Suitably protected vertical runs or risers and ground wires attached to the surface of poles, and guys, are allowed in climbing spaces provided that no more than one guy or one vertical riser, run or ground wire are installed in any 4-foot vertical section of climbing space. The terminals or terminal fittings of risers or runs shall not be installed within climbing spaces.

G. SERVICE DROPS

Phase conductors of service drops taken from bare neutral multiconductor cables shall have insulation equivalent to that specified in Rule 54.10-C(1). Where service drops are supported on ACSR or aluminum messenger, the messenger shall be protected against abrasion. Services supported on the messenger shall be attached not less than 15 inches from the surface of the pole.

H. FASTENINGS

In the application of Rule 57.5, where cables are not maintained from a cable chair, the addition of 200 pounds vertical load, specified in Rule 49.7 -C may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

I. EXTENDED MESSENGER

Messengers may be extended in bare neutral multiconductor cable construction provided the messenger is sectionalized as a guy.

J. SAGS

In the application of Rule 57.9 the 200-pound additional vertical loading specified for a man and cable chair may be reduced to 50 pounds where the cable is not maintained from a cable chair.

Original Rule

Rule 56.4-A3

56.4- A Above Ground

3 New Rule

Strikeout and underline Version

Rule 56.4-A3

56.4- A Above Ground

(3) ABOVE SWIMMING POOLS:

a) Ungrounded portions of guys shall have radial clearances from the top edge of the swimming pool wall and vertical clearances above the highest water level of the pool of not less than 18 feet.

No ungrounded portion of guys may be installed less than 18 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No ungrounded portion of guys may be installed less than 12 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 6 feet radially of the diving board or platform and not over the water surface of the pool.

b) Grounded portions of guys shall have vertical clearances above the highest water level of the pool of not less than 16 feet.

No grounded portion of guys may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No grounded portion of guys may be installed less than 8 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

Final Version
Rule 56.4-A3

56.4- A Above Ground

(3) ABOVE SWIMMING POOLS:

- a) Ungrounded portions of guys shall have radial clearances from the top edge of the swimming pool wall and vertical clearances above the highest water level of the pool of not less than 18 feet.

No ungrounded portion of guys may be installed less than 18 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No ungrounded portion of guys may be installed less than 12 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 6 feet radially of the diving board or platform and not over the water surface of the pool.

- b) Grounded portions of guys shall have vertical clearances above the highest water level of the pool of not less than 16 feet.

No grounded portion of guys may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No grounded portion of guys may be installed less than 8 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

Original Rule

Rule 84.4-A5

84.4-A Above Ground

(5) New Rule

Strikeout and Underline

Rule 84.4-A5

84.4-A Above Ground

(5) ABOVE SWIMMING POOLS: Crossings of communication line conductors above swimming pools shall be avoided where practicable. Line conductors shall have radial clearances from the top edge of the pool wall and vertical clearances above the highest water level of the pool of not less than 18 feet. Grounded metallic sheathed cables, plastic-jacketed cables with an inner grounded metallic sheath, and grounded messengers and grounded span wires which support cable may have minimum radial and vertical clearances as hereinabove stated of not less than 16 feet.

Service drops having coverings of materials specially approved by the Commission for installation above swimming pools and used in line cable construction may have minimum radial and vertical clearances as hereinabove stated of not less than 14 feet.

Final Version

Rule 84.4-A5

84.4-A Above Ground

(5) ABOVE SWIMMING POOLS: Crossings of communication line conductors above swimming pools shall be avoided where practicable. Line conductors shall have radial clearances from the top edge of the pool wall and vertical clearances above the highest water level of the pool of not less than 18 feet. Grounded metallic sheathed cables, plastic-jacketed cables with an inner grounded metallic sheath, and grounded messengers and grounded span wires which support cable may have minimum radial and vertical clearances as hereinabove stated of not less than 16 feet.

Service drops having coverings of materials specially approved by the Commission for installation above swimming pools and used in line cable construction may have minimum radial and vertical clearances as hereinabove stated of not less than 14 feet.

Original Version

Rule 84.8-C5

84.8-C Clearances Above Ground And Buildings

(5) New Rule

Strikeout and Underline Version

Rule 84.8-C5

84.8-C Clearances Above Ground And Buildings

(5) ABOVE SWINNING POOLS: Service drop installations above swimming pools shall be avoided where practicable, where service drop conductors are installed above a swimming pool, the conductors shall have radial clearances from the top edge of the pool walls of not less than 18 feet and shall have vertical clearances of not less than 18 feet above the highest water level of the pool. Service drops having coverings or materials specially approved by the Commission for installation above swimming pools may have vertical clearances above the pool and radial clearances from the top edge or the pool wall or not less than 14 feet for public and commercially operated pools and not less than 10 feet for residential pools.

No service drop may be installed less than 14 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially or the diving board or platform and over the water surface of the pool.

No service drop may be installed less than 10 feet vertically above the horizontal plane through a diving board or platform, the area or such plane being the area within 3 feet radially of the diving board or platform and not over the water surface or the pool.

Final Version
Rule 84.8-C5

84.8-C Clearances Above Ground And Buildings

- (5) ABOVE SWINNING POOLS: Service drop installations above swimming pools shall be avoided where practicable, where service drop conductors are installed above a swimming pool, the conductors shall have radial clearances from the top edge of the pool walls of not less than 18 feet and shall have vertical clearances of not less than 18 feet above the highest water level of the pool. Service drops having coverings or materials specially approved by the Commission for installation above swimming pools may have vertical clearances above the pool and radial clearances from the top edge or the pool wall or not less than 14 feet for public and commercially operated pools and not less than 10 feet for residential pools.

No service drop may be installed less than 14 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No service drop may be installed less than 10 feet vertically above the horizontal plane through a diving board or platform, the area or such plane being the area within 3 feet radially of the diving board or platform and not over the water surface or the pool.

Original Version

Rule 86.4-A3

86.4-A Above Ground

(3) New Rule

Strikeout and Underline Version

Rule 86.4-A3

86.4-A Above Ground

~~(3) ABOVE SWIMMING POOLS: Guys shall have vertical clearances above the highest water level of the pool of not less than 16 feet.~~

~~No communications guy may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.~~

~~No communications guy may be installed less than 8 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.~~

Final Version

Rule 86.4-A3

86.4-A Above Ground

(3) ABOVE SWIMMING POOLS: Guys shall have vertical clearances above the highest water level of the pool of not less than 16 feet.

No communications guy may be installed less than 16 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being within 8 feet radially of the diving board or platform and over the water surface of the pool.

No communications guy may be installed less than 8 feet vertically above the horizontal plane through a diving board or platform, the area of such plane being the area within 3 feet radially of the diving board or platform and not over the water surface of the pool.

Original Version

Rule 91.3

91.3 Stepping

All jointly used poles which support supply conductors shall be provided with pole steps if vertical runs or risers of supply or communication conductors are attached to the surface of such poles; except that those jointly used poles which carry circuits operated only by one party are not required to be stepped provided any vertical runs or risers on the surface of such poles are covered by a suitable protective covering of wood throughout their length above a point 8 feet from the ground line. The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of pole not exceeding 36 inches, at least to the height of the upper end of the topmost run or riser attached to the surface of pole. Steps shall be so placed that the runs or risers do not interfere with their free use.

Strikeout and Underline Version

Rule 91.3

91.3 Stepping

A. Use Of Steps

(1) Poles with Vertical Runs or Risers: All jointly used poles which support supply conductors shall be provided with pole steps if vertical runs or risers ~~of supply or communication conductors~~ are attached to the surface of such poles, ~~except that those jointly used~~ unless the conditions described in the following subparagraphs (a), (b) or (c) are met:

(a) One-Party Poles: Poles which carry circuits operated and maintained by only one party are not required to be stepped, provided any vertical runs or risers on the surface of such poles are covered by a suitable protective covering ~~of wood throughout their length above a point 8 feet from the ground line.~~ (Refer to Rule 54.6-E and Rule 84.6-E) from the ground line to a level not less than 8 ft. above the ground line, or provided that such poles comply with the conditions of Rule 91.3-A1b .

(b) Communications Runs: Joint poles with vertical communications runs are not required to be stepped, provided all of the following conditions are met:

- 1) The pole has no pole mounted communication terminals, no risers and no vertical runs (including ground wires) located within the climbing space, and not more than three levels of communication line conductors;
- 2) The communications levels consist only of drop wire in line cable construction, span wire supported cables, and messenger-supported cables;
- 3) The maximum vertical separation between the highest and lowest line communications levels is not more than 30 inches;
- 4) The vertical runs other than ground wires consist entirely of drop wire cables for service drops which extend vertically no more than one foot above and below the communication line levels.

(c) Supply Runs: Joint poles with supply vertical runs are not required to be stepped provided all of the following conditions are met:

- 1) All supply circuits on the pole are operated and maintained by only one party.
- 2) All supply vertical runs other than ground wires are located entirely above the communication levels.
- 3) No ground wire runs are located within the climbing space except those portions which are located above the communications level.

B. Location of Steps

The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of the pole not exceeding 36 inches, at least to ~~the height of the upper end of the topmost run or riser attached to the surface of pole~~ that conductor level above which only circuits operated and maintained by one party remain. Steps shall be so placed that runs or risers do not interfere with the free use of the steps.

Final Version

Rule 91.3

91.3 Stepping

A. Use Of Steps

(1) **Poles with Vertical Runs or Risers:** All jointly used poles which support supply conductors shall be provided with pole steps if vertical runs or risers are attached to the surface of such poles, unless the conditions described in the following subparagraphs (a), (b) or (c) are met:

(a) **One-Party Poles:** Poles which carry circuits operated and maintained by only one party are not required to be stepped, provided any vertical runs or risers on the surface of such poles are covered by a suitable protective covering (Refer to Rule 54.6-E and Rule 84.6-E) from the ground line to a level not less than 8 ft. above the ground line, or provided that such poles comply with the conditions of Rule 91.3-A1b .

(b) **Communications Runs:** Joint poles with vertical communications runs are not required to be stepped, provided all of the following conditions are met:

- 1) The pole has no pole mounted communication terminals, no risers and no vertical runs (including ground wires) located within the climbing space, and not more than three levels of communication line conductors;
- 2) The communications levels consist only of drop wire in line cable construction, span wire supported cables, and messenger-supported cables;
- 3) The maximum vertical separation between the highest and lowest line communications levels is not more than 30 inches;
- 4) The vertical runs other than ground wires consist entirely of drop wire cables for service drops which extend vertically no more than one foot above and below the communication line levels.

(c) **Supply Runs:** Joint poles with supply vertical runs are not required to be stepped provided all of the following conditions are met:

- 1) All supply circuits on the pole are operated and maintained by only one party.
- 2) All supply vertical runs other than ground wires are

located entirely above the communication levels.

- 3) No ground wire runs are located within the climbing space except those portions which are located above the communications level.

B. Location of Steps

The lowest step shall be not less than 7 feet 6 inches from the ground line and above this point steps shall be placed, with spacing between steps on the same side of the pole not exceeding 36 inches, at least to that conductor level above which only circuits operated and maintained by one party remain. Steps shall be so placed that runs or risers do not interfere with the free use of the steps.