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REQUIREMENTS FOR ALL LINES

31. APPLICATION

The following rules apply to all classes of overhead lines under all conditions.

31.1 Design, Construction and Maintenance

Electrical supply and communication systems shall be of suitable design and construction for their intended use, regard being given to the conditions under which they are to be operated, and shall be maintained in a condition which will enable the furnishing of safe, proper and adequate service.

The owners and employees of such systems shall at all times exercise due care to reduce to a minimum the hazard of accidental injury to their own or fellow employees, to the public and other utilities due to the presence of overhead wires.

All work performed on public streets and highways shall be done in such a manner that the operations of other utilities and the convenience of the public will be interfered with as little as possible and no conditions unusually dangerous to workmen, pedestrians or others shall be established at any time.

31.2 Inspection of Lines

Lines shall be inspected frequently and thoroughly for the purpose of insuring that they are in good condition so as to conform with these rules. Lines temporarily out of service shall be inspected and maintained in such condition as not to create a hazard.

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.

31.4 Cooperation to Avoid Conflicts

Any party contemplating construction or reconstruction which would create a conflict with a line of another classification shall notify the party or parties owning or operating the other line, in advance of such construction, giving full information as to the location and character of the proposed construction, and the parties concerned shall cooperate with a view of avoiding or, if this is impracticable, of minimizing the hazard.

31.5 Joint Use of Poles

Joint use of poles shall be given consideration by all interested parties where construction or reconstruction is involved and where used it shall be subject to the appropriate grade of construction as specified in Section IV. Nothing herein shall be construed as requiring joint use of the same poles, or as granting authority for the use of any poles without the owner's consent. (See Rule 32.2 and Section IX.)

Each party should definitely designate its space requirements on joint poles, which space shall not be occupied without consent, by equipment of any other party.

Non-climbable poles in partial underground distribution systems (see Rules 22.0-D and 21.10) shall not be jointly used.

31.6 Abandoned Lines

Lines or portions of lines permanently abandoned shall be removed by their owners so that such lines shall not become a public nuisance or a hazard to life or property.

32. GENERAL ARRANGEMENTS OF LINES

32.1 Two or More Systems

Where two or more systems are concerned in any clearance, that owner or operator who last in point of time constructs or erects facilities, shall establish the clearance required in these rules from other facilities which have been erected previously. Relative to the clearances which it bears to older lines in the vicinity, each succeeding line erected should be constructed with a view to the requirements of such older lines when they are reconstructed to the standards which current rules have specified. Subsequent entrants into an area shall recognize the provisions for future development made by all prior entrants into the field as indicated by their installed facilities.

32.2 Relative Levels

Where supply and communication circuits or supply circuits of different voltage classifications are involved in crossings, conflicts or joint use, the higher voltage circuit shall in general be carried at the higher level. This arrangement is not feasible in all cases, for example where trolley circuits are involved or where poles are jointly occupied.

It is recommended that lines be arranged by mutual agreement of those concerned at standardized voltage levels throughout a given community in order to minimize difficulties when new crossings or extensions to existing lines are to be installed.

A. Supply Circuits of 750-20,000 Volts

Supply circuits of 750-20,000 volts should not be above supply circuits in excess of 20,000 volts.

B. Supply Circuits of 0-750 Volts

Supply circuits of 0-750 volts should not be above supply circuits in excess of 7500 volts.

C. Supply Circuits or 0-750 Volts and Class T Circuits

Supply circuits of 0-750 volts and all Class T circuits may cross under communication and railway circuits provided clearances not less than those given in Tables 1 and 2 are maintained.

D. Communication Circuits

Communication circuits should not be above supply circuits in excess of 7500 volts. Insulated single conductors, paired wire or duplex communication line conductors above supply circuits (including Class T circuits) of 750-7500 volts shall be supported on messengers or constructed in accordance with Rule 32.2-G.

E. Supply Service Drops of 0-750 Volts

Supply service drops of 0-750 volts shall not cross in a span above supply circuits (excepting Class T circuits) in excess of 750 volts, but service drops may cross above such circuits when supported on the same pole.

F. Communication Service Drops

Communication service drops should not cross in a span above supply circuits (excepting Class T circuits) of 750-7500 volts and shall not cross in a span above supply circuits in excess of 7500 volts. Where it is necessary that communication service drops cross in a span above supply circuits of 750-7500 volts, an auxiliary attachment or its approved equivalent shall be used at the service end of the service drop to insure against the drop falling across the supply circuit in the event of the failure of the usual means of attachment.

G. Exceptional Cases

Where it is not possible to conform to the usual arrangement whereby the higher voltage circuit shall be carried at the higher level, the positions may be reversed provided the lower voltage circuit, installed at the higher level, shall be erected and maintained with the same strength requirements as the higher voltage circuits would require with the usual arrangement of levels. Where neither circuit carries in excess of 750 volts this provision does not apply.

Where supply and communication circuits carrying less than 750 volts cross trolley contact conductors carrying in excess of 750 volts, they shall conform to the strength requirements for supply lines corresponding to the voltage of the trolley contact conductors.

32.3 Colinear Lines and Crossing Lines

The center-line clearance between poles and conductors which pass unattached shall be not less than 1½ times the clearance specified in Table 1, Case 8, except where the interset 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. Where clearance crossarms are installed in the construction and maintenance of colinear 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 colinear lines are subject to modifications specified in Rule 84.4-D3 where communication circuits only are concerned.

32.4 Circuits of Different Classification on the Same Crossarm

A. Supply Circuits

(1) 750-7500 Volts and More Than 20,000 Volts: Supply circuits of 750-7500 volts shall not be carried on the same crossarm with circuits of more than 20,000 volts unless the higher voltage circuit is not energized when men are working at this level. Where this construction is used, circuits of different classification shall be carried on opposite ends of the crossarm with a horizontal separation of not less than pin spacing required for the highest voltage concerned, but not less than 36 inches between the nearest conductors of different classification.

(2) 0-750 Volts and More Than 7500 Volts: Supply circuits of 0-750 volts shall not be carried on the same crossarm with circuits of more than 7500 volts, except that, on transformer structures, bus conductors of 0-750 volts and bus conductors of 7500-20,000 volts may be supported on opposite ends of the same bus-supporting timbers provided the horizontal separation between conductors of different classifications supported on the same arm is not less than 36 inches, the bus conductors of 7500-20,000 volts are not extended longitudinally as line conductors, and conductors on related buck arms are not less than 4 feet vertically from such bus timbers.

Attachment of 0-750 volt service drop conductors shall be permitted on the 0-750 volt end of the 0-750 and 7,500-20,000 volt bus supporting timbers.

(3) 0-750 Volts and 750-7500 Volts: Supply circuits of 0-750 volts and 750-7500 volts may be carried on the same crossarm with the nearest conductors of the two classifications separated a horizontal distance of not less than 36 inches. For requirements applicable to buck arm construction, climbing space, and service drops on combination arms, see Rule 54.4-C2b, 54.7-A and 54.8-E respectively.

(4) More Than 750 Volts, Different Ownerships: Supply circuits of more than 750 volts and of different ownership may be carried on opposite ends of the same crossarm with the nearest conductors of different ownerships separated a horizontal distance of not less than 14½ inches.

(5) 0-750 Volts, Different Ownerships: Supply circuits of 0-750 volts and of different ownership may be carried on opposite ends of the same crossarm with the nearest conductors of different ownerships separated a horizontal distance of not less than 30 inches.

(6) Common Neutral Conductor: See Rule 59.3-E for the location of the common neutral conductor in common neutral systems.

B. Supply Circuits of 0-750 Volts and Communication Circuits

Supply circuits of 0-300 volts and Class C communication circuits of different ownership may be supported on the same crossarm, provided the two classifications of circuits are installed on opposite ends of the arm and the nearest conductors of the two classifications are separated a horizontal distance of not less than 36 inches. Where the two classes of circuits are of the same ownership, the horizontal distance may be reduced to not less than 30 inches and the supply circuit voltage may be 0-750 volts.

Services direct from such a crossarm are not permitted to cross conductors of the other classification supported on the same crossarm.

C. Supply Circuits and Private Communication Circuits (see Rules 20.5-B and 89)

(1) 7500-20,000 Volts, Same Ownership: Supply circuits of 7500-20,000 volts and private communication circuits owned (or leased) and operated and maintained by the same organization may be supported on the same crossarms as provided in Rule 89.2-A1.

(2) 750-7500 Volts, Same Ownership: Supply circuits of 750-7500 volts and private communication circuits owned (or leased) and operated and maintained by the same organization may be supported on the same crossarms as provided in Rule 89.2-A2.

(3) 0-750 Volts: Supply circuits of 0-750 volts and private communication circuits may be supported on the same crossarms as provided in Rule 89.2-A3, or Rule 89.2-A4.

33. GROUNDS AND NEUTRALS

33.1 Neutral Conductors

Neutral conductors of supply circuits, other than in distribution systems of 15,000 volts or less with common primary and secondary grounded neutrals, shall be considered as carrying the same voltage as the other conductors of the circuit. Insulators used to support neutral conductors shall meet the requirements of Rule 55, based on the nominal voltage of the circuit, but are not required to have the same insulating value as insulators actually used on the phase conductors. Where a common neutral system is installed, the neutral conductor may be considered as carrying the same voltage as any of its related system conductors, compliance with special practices and construction requirements being necessary (see Rule 59).

33.2 Ground or Earth as a Conductor

The grounding of the neutral or any other conductor in direct current supply systems or in single phase or polyphase supply systems is permitted only for the purposes of stabilization and protection, and not for use as a return conductor.

33.3 Ground Connections

A. Effective Grounds

Supply equipment of the following types, when grounded to conform to requirements of this Order or for any other reasons, shall be effectively grounded:

Neutral conductors of low voltage supply circuits, (0-750 volts, see Rule 58.3-C1);

Neutral conductors of supply circuits exceeding 750 volts;

Bond wires;

Lightning arresters;

Transformer cases grounded in accordance with Rule 58.3-C3.

B. Independent Ground Connections

Ground connections for equipment of any one of the types listed in Rule 33.3-A shall not be interconnected with ground connections for equipment of any other type listed therein, except:

In common neutral systems the neutral conductors of 0-750 volt supply circuits and of supply circuits of 750-15000 volts may be interconnected and grounded in accordance with the provisions of Rule 59; and

A ground for a set of lightning arresters may be interconnected with:

A ground for the neutral conductor of the circuit protected by the set of lightning arresters,

The cable sheath or body of the cable pothead where the cable conductors are connected to the circuit protected by the set of lightning arresters,

Metallic conduit enclosing conductors of the circuit protected by the set of lightning arresters,

Transformer cases grounded in accordance with Rule 58.3-C3 where the transformers are connected to the circuit protected by the set of lightning arresters, and

The ground connection of another set of lightning arresters, provided the circuits protected are of the same voltage classification.

Where more than two sets of lightning arresters on supply circuits of the same voltage classification are installed on a pole or structure, and their ground

terminals are interconnected at the top of the ground connections, two complete and effective ground connections will be considered sufficient for the purposes of this rule. Connection to an effectively grounded cable sheath or conduit of a circuit protected by the lightning arresters will be considered as one of these two effective ground connections.

34. FOREIGN ATTACHMENTS

Nothing in these rules shall be construed as permitting the unauthorized attachment, to supply or communication poles, of radio antennas, ropes, signs, and any such equipment foreign to the purposes of overhead electric line construction.

35. TREE TRIMMING

Where overhead wires pass through trees, safety and reliability of service demand that a reasonable amount of tree trimming be done in order that the wires may clear branches and foliage.

Trees so located that they can fall into a crossing span or into any span that could communicate the trouble to a crossing span shall be removed wherever practicable.

36. POLE CLEARANCES FROM RAILROAD TRACKS

Poles or other supporting structures which are set in proximity to railroad tracks shall be so located that the clearance requirements of General Order 26-D are met. The clearance requirements of General Order 26-D, applicable to pole line construction, are contained in Appendix E.

37. MINIMUM CLEARANCES OF WIRES ABOVE RAILROADS, THOROUGHFARES, BUILDINGS, ETC.

Clearances 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 the clearances between conductors, guys, messengers or trolley span wires and buildings, poles, 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 clearances specified in Table 1, Case 1, Columns A, B, D, E and F, 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.

The clearance specified in Table 1, Case 1, Column C (22½ feet), shall in no case be reduced below the tabular value 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.

The clearance of Rule 37, Table 1, Case 8, Column E, as specified in Rules 58.3-B7 and 58.4-B6 shall not apply to the lead wires and terminals of transformers, regulators and capacitors installed on wood poles. Provided said terminals and lead wires conform to clearances specified in Rule 37, Table 1, Case 9 and Rule 38, Table 2, Case 17.

TABLE 1

BASIC MINIMUM ALLOWABLE VERTICAL CLEARANCE OF WIRES 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 Notes 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 (incl. open wire, cables & serv. drops), supply serv. drops of 0-750 volts	C Trolley contact, feeder & 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, 750-25,000 volts	F Supply conductors & supply cables, more than 25,000 volts
1	Crossing above tracks of railroads which transport or propose to transport freight cars (max. height 15 ft. 6 in.) where not operated by overhead contact wires. (a) (b) (c) (d)	25 ft.	25 ft.	22½ ft.	25 ft.	28 ft.	34 ft.
2	Crossing or paralleling above tracks or 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 crossing thoroughfares in rural districts. (c) (d)	18 ft. (j) (k) (ii)	18 ft. (j) (l) (m) (ii)	16 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 traversed by vehicles or agricultural equipment.	15 ft. (k) (ii)	15 ft. (m) (n) (p) (ii)	16 ft.	16 ft.	25 ft. (n) (o)	30 ft. (o) (p)
5	Above ground in areas accessible to pedestrians only.	7 ft. (ii)	8 ft. (m) (q) (ii)	16 ft.	10 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. (s) (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. (s) (aa)	15 in. (aa) (bb) (cc)	15 in. (aa) (dd)	15 or 18 in. (dd) (ee) (jj)	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)	----------	3 in. (aa) (ff)	3 in. (aa) (cc) (gg)	3 in. (aa) (dd) (gg)	3 in. (dd) (gg) (jj)	½ pin spacing shown in Table 2 Case 15. (dd)

References to Rules Modifying Minimum Clearances in Table 1

		Rule	Page
(l)	May be reduced where within 12 feet of curb line of public thoroughfares.		
	1. Supply service drops	54.8-B1	138
	2. Communication service drops	84.8-C1	240
(m)	May be reduced for railway signal cables under special conditions	84.4-A4	226
(n)	May be reduced in rural districts.		
	1. Supply conductors, 750-20,000 volts, crossing roads or driveways	54.4-A2a	110
	2. Supply conductors, 750-20,000 volts, above agricultural areas and along roads	54.4-A2b	111
	3. Communication conductors along roads	84.4-A2	226
(o)	May be reduced for transformer, regulator or capacitor leads.		
	1. Transformer leads	58.3-B1a	172
	2. Regulator or capacitor leads	58.4-B1	179
(p)	May be reduced across arid or mountainous areas.		
	1. Supply conductors of more than 20,000 volts	54.4-A1	110
	2. Communication conductors	84.4-A1	226
(q)	Shall be increased or may be reduced under special conditions.		
	1. Increased for supply service drops on industrial or commercial premises	54.8-B3a	139
	2. Supply service drops on residential premises	54.8-B3b	139
	3. Communication conductors	84.4-A3	226
	4. Increased for communication service drops on industrial or commercial premises	84.8-C3a	241
	5. Communication service drops on residential premises	84.8-C3b	241
(r)	May be reduced above roofs of buildings under special conditions.		
	1. Supply overhead guys	56.4-G	159
	2. Supply service drops	54.8-B4	139
	3. Communication overhead guys	86.4-F	249
	4. Communication conductors and cables	84.4-E	232
	5. Communication service drops	84.8-C4	241
(s)	Also applies at fire escapes, etc.		
	1. Supply conductors	54.4-H1	124
	2. Supply service drops on industrial or commercial premises	54.8-B4a	139
	3. Supply service drops on residential premises	54.8-B4b	140
	4. Communication conductors	84.4-E	232

38. MINIMUM CLEARANCES OF WIRES FROM OTHER WIRES

The clearance between any overhead line conductor or wire and any other conductor or wire over which the former crosses, the vertical clearance between wires on different crossarms on the same pole, the horizontal clearance between wires of the same voltage classification on the same crossarm and the clearances of line wires from vertical or lateral conductors or guy wires of the same line or of conflicting lines shall not be less than the values given in Table 2, at a temperature of 60° F. and no wind, except that conductors may be dead-ended at the crossarm or have reduced clearances at points of transposition, and shall not be held in violation of Table 2, Cases 8-15, inclusive.

The clearances of Table 2 shall in no case be reduced more than 10 per cent because of temperature and loading as specified in Rule 43 or difference in size or design of the supporting pins, hardware or insulators.

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 between the surfaces of conductors (not including tie wires), dead ends, or metal pins, and other conductors, dead ends, metal pins, or other objects to which the clearances are applicable.

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

TABLE 2

BASIC MINIMUM ALLOWABLE CLEARANCE OF WIRES FROM OTHER WIRES AT CROSSINGS AND AT SUPPORTS
(Letter References Denote Modifications of Minimum Clearancesss Referred to in Notes Following this Table)
All Clearances Are in Inches

Case No.	Nature of clearance & class & voltage of wire, cable or conductor concerned	Other wire, cable or conductor concerned								
					Supply conductors (including supply cables)					
		A	B	C	D	E	F	G	H	I
		Span wires, guys and messengers	Trolley contact conductors, 0-750 volts	Communication conductors (incl.open wire, cables & serv.drops	0-750 volts (incl.serv. drops), and trolley feeders (a)	750-7,500 volts	7,500-20,000 volts	20,000-35,000 volts	35,000-68,000 volts	Over 68,000 volts
	Clearance between wires, cables and conductors not supported on the same poles, vertically at crossings in spans, and radially where colinear or approaching crossings									
1	Span wires, guys and messengers(b)---	18(c)	48(d,e)	24(e)	24(e)	36(f)	36	72	72	72(g)
2	Trolley contact conductors, 0-750 volts----------	48(d,e)	----------	48(d)	48(d,h)	48	72	96	96	96(g)
3	Communication conductors----------	24(e)	48(d)	24	48(i)	48(dd)	72	96	96	96(g)
4	Supply conductors, service drops & trolley feeders, 0-750 volts------	24(e)	48(d,h)	48(i)	24	48	48	96	96	96(g)
5	Supply conductors, 750-7500 volts----	36(f)	48	48(dd)	48	48(h)	72	96	96	96(g)
6	Supply conductors, 7500-20,000 volts-	36	72	72	48	72	72	96	96	96(g)
7	Supply conductors, more than 20,000 volts----------	72(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96(g)
	Vertical separation between conductors and/or cables on separate crossarms or other supports at different levels (excepting on related line and buck arms) on the same pole									
8	Communication conductors and service drops----------	----------	----------	12(j)	48(k,l,m,n, ff)	48(k,ff)	72(m,n)	72(m)	72	72
9	Supply conductors, service drops & trolley feeders, 0-750 volts------	----------	----------	48(k,l,m,n, ff)	24(h,k,m, o)	48(k,m,p)	48(k,m,q)	72(m)	72	72
10	Supply conductors, 750-7500 volts---	----------	----------	48(k,ff)	48(k,m,p)	48(m,o,r, ee)	48(m,q)	48(m,q)	48(q)	60(q)

11	Supply conductors, 7500-20,000 volts----------	---------	---------	72(m,n)	48(k,m,q)	48(m,q)	48(m,o,q,r, ee)	48(m,q)	48(q)	60(q)
12	Supply conductors, 20,000-68,000 volts----------	---------	---------	72(m)	72(m)	48(m,q)	48(m,q)	48(o,q)	48(o,q)	60(q)
13	Supply conductors, more than 68,000 volts----------	---------	---------	72	72	60(q)	60(q)	60(q)	60(q)	60(o,q)
	Vertical clearance between conductors on related line arms and buck arms									
14	Line arms above or below related buck arms (s,t)----------	---------	---------	6	12(u)	18(u)	18(u)	24	36	48(g)
	Horizontal separation of conductors on same crossarm									
15	Pin spacing of longitudinal conductors,vertical conductors & service drops (v, w)----------	---------	---------	3(x)	11½(h,x)	11½(x)	17½(x)	24(x)	36	48(g)
	Radial separation of conductors on same crossarm, pole or structure-incidental pole wiring									
16	Conductors, taps, or lead wires of different circuits (v,y,s)------	---------	---------	3(x)	11½(h,x)	11½(x)	17½(x)	24(x)	36	48(g)
17	Conductors, taps, or lead wires of the same circuit (v,s,aa)-------	---------	---------	3	3	6	6	12	18	24
	Radial separation between guys and conductors									
18	Guys passing conductors supported on other poles,and guys approximately parallel to conductors supported on the same poles----------	---------	---------	9(bb)	12	18	18	30	36	36
19	Guys and span wires passing conductors supported on the same poles-	(cc)	---------	3	3	6	9	12	18	24

References to Rules Modifying Minimum Clearances in Table 2

39. MINIMUM CLEARANCES OF WIRES FROM SIGNS

Clearance between any overhead line conductor and all signs, whether mounted on buildings, isolated structures or otherwise constructed shall not be less than the values given in Table 2-A at a temperature of 60° F. and no wind.

The clearances specified in Table 2-A shall in no case be reduced more than 10% because of temperature and loading as specified in Rule 43.

All clearances of more than 6 inches shall be applicable from the center lines of conductors concerned. Lesser clearances shall be applicable from conductor surfaces.

TABLE 2-A

MINIMUM CLEARANCES OF WIRES FROM SIGNS MOUNTED ON BUILDINGS AND ISOLATED STRUCTURES[a]

Case No.	Nature of Clearance Type of Sign	A Span Wires (Other than Trolley Span Wires), Overhead Guys & Messengers, Communication Cables and Communication Service Drops	B Communication Open Wire Conductors Supply Cables Treated as in Rule 57.8 and Supply Service Drops of 0-750 Volts	C Supply Conductors, Supply Cables of 0-750 Volts & Trolley Span Wires	D Supply Conductors & Supply Cables Above 750 Volts
1	Vertical clearance above all signs upon which men can walk	8 ft.	8 ft.	8 ft.	12 ft.
2	Vertical clearance above all signs upon which men cannot walk	2 ft.	2 ft.	3 ft.	8 ft.
3	Vertical clearance under signs which are illuminated	2 ft.[b]	2 ft.[d]	3 ft.	Prohibited[e]
4	Vertical clearance under signs which are nonilluminated	6 inches[c]	1 ft.	3 ft.	Prohibited[e]
5	Horizontal clearance from signs which are illuminated	3 ft.[b]	3 ft.[d]	3 ft.	6 ft.
6	Horizontal clearance from signs which are nonilluminated	6 inches[c]	1 ft.	3 ft.	6 ft.

a These clearances do not apply to service drop conductors which are attached to signs for the purpose of serving such signs.
b May be reduced to 6 inches provided illuminated sign is grounded.
c May be reduced if adequate separation is provided by means of a suitable nonconducting separator.
d May be reduced to 1 foot for communication open wire conductors only, provided illuminated sign is grounded.
e When conductors are at a level of 8 feet or more below the level of the lowest portion of the sign but not vertically under the sign, no horizontal clearance is required between the vertical planes through the conductor nearest the sign and the vertical projection of the extremities of the sign.