Table 1: Basic Minimum Allowable Vertical Clearance of Wires above Railroads, Thoroughfares, Ground or Water Surfaces; Also Clearances from Poles, Buildings, Structures or Other Objects (nn) (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 (Including Open Wire, Cables and Service Drops), Supply Service Drops of 0 - 750 Volts	C Trolley Contact, Feeder and Span Wires, 0 - 5,000 Volts	D Supply Conductors of 0 - 750 Volts and Supply Cables Treated as in Rule 57.8	E Supply Conductors and Supply Cables, 750 - 22,500 Volts	F Supply Conductors and Supply Cables, 22.5 - 300 kV	G Supply Conductors and Supply Cables, 300 - 550 kV (mm)
1	Crossing above tracks of railroads which transport or propose to transport freight cars (maximum height 15 feet, 6 inches) where not operated by overhead contact wires. (a) (b) (c) (d)	25 Feet	25 Feet	22.5 Feet	25 Feet	28 Feet	34 Feet	34 Feet (kk)
2	Crossing or paralleling above tracks of railroads operated by overhead trolleys. (b) (c) (d)	26 Feet (e)	26 Feet (e) (f) (g)	22.5 Feet (h) (i) (eee)	27 Feet (e) (g)	30 Feet (g)	34 Feet (g)	34 Feet (g) (kk)
3	Crossing or along thoroughfares in urban districts or crossing thoroughfares in rural districts. (c) (d)	18 Feet (j) (k) (ii)	18 Feet (j) (l) (m) (ii) (kkk)	19 Feet (hh) (eee)	20 Feet (ii)	25 Feet (o) (ii)	30 Feet (o) (ii)	30 Feet (o) (ii) (kk)
4	Above ground along thoroughfares in rural districts or across other areas capable of being traversed by vehicles or agricultural equipment.	15 Feet (k)	15 Feet (m) (n) (p)	19 Feet (eee)	19 Feet	25 Feet (o)	30 Feet (o) (p)	30 Feet (o) (kk)
5	Above ground in areas accessible to pedestrians only	8 Feet	10 Feet (m) (q)	19 Feet (eee)	12 Feet	17 Feet	25 Feet (o)	25 Feet (o) (kk)
6	Vertical clearance above walkable surfaces on buildings, (except generating plants or substations) bridges or other structures which do not ordinarily support conductors, whether attached or unattached.	8 Feet (r)	8 Feet (r)	8 Feet	8 Feet	12 Feet	12 Feet	20 Feet (ll)
6a	Vertical clearance above non–walkable surfaces on buildings, (except generating plants or substations) bridges or other structures, which do not ordinarily support conductors, whether attached or unattached	2 Feet	8 Feet (yy)	8 Feet	8 Feet (zz)	8 Feet	8 Feet	20 Feet
7	Horizontal clearance of conductor at rest from buildings (except generating plants and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto (s) (t)	-	3 Feet (u)	3 Feet	3 Feet (u) (v)	6 Feet (v)	6 Feet (v)	15 Feet (v)
8	Distance of conductor from center line of pole, whether attached or unattached (w) (x) (y)	-	15 inches (s) (aa)	15 inches (aa) (bb) (cc)	15 inches (o) (aa) (dd)	15 or 18 inches (o) (dd) (ee) (jj)	18 inches (dd) (ee)	Not Applicable
9	Distance of conductor from surface of pole, crossarm or other overhead line structure upon which it is supported, providing it complies with case 8 above (x)	-	3 inches (aa) (ff)	3 inches (aa) (cc) (gg)	3 inches (aa) (dd) (gg)	3 inches (dd) (gg) (jj)	1/4 Pin Spacing Shown in Table 2 Case 15 (dd)	1/2 Pin Spacing Shown in Table 2 Case 15 (dd)

Table 1 (Continued)

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 - 5,000 Volts	D Supply Conductors of 0 - 750 Volts and Supply Cables Treated as in Rule 57.8	E Supply Conductors and Supply Cables, 750 - 22,500 Volts	F Supply Conductors and Supply Cables, 22.5 - 300 kV	G Supply Conductors and Supply Cables, 300 - 550 kV (mm)
10	Radial centerline clearance of conductor or cable (unattached) from non-climbable street lighting or traffic signal poles or standards, including mastarms, brackets and lighting fixtures, and from antennas that are not part of the overhead line system.	-	1 Foot (u) (rr) (ss)	15 inches (bb) (cc)	3 Feet (oo)	6 Feet (pp)	10 Feet (qq)	10 Feet (ll)
11	Water areas not suitable for sailboating (tt) (uu) (ww) (xx)	15 Feet	15 Feet	-	15 Feet	17 Feet	25 Feet	25 Feet (kk)
12	Water areas suitable for sailboating, surface area of: (tt) (vv) (ww) (xx)							
	(A) Less than 20 acres	18 Feet	18 Feet	-	18 Feet	20 Feet	27 Feet	27 Feet (kk)
	(B) 20 to 200 acres	26 Feet	26 Feet	-	26 Feet	28 Feet	35 Feet	35 Feet (kk)
	(C) Over 200 to 2,000 acres	32 Feet	32 Feet	-	32 Feet	34 Feet	41 Feet	41 Feet (kk)
	(D) Over 2,000 acres	38 Feet	38 Feet		38 Feet	40 Feet	47 Feet	47 Feet (kk)
13	Radial clearance of bare line conductors from tree branches or foliage (aaa) (ddd)	-	-	18 inches (bbb)	-	18 inches (bbb)	1/4 pin spacing shown in table 2, Case 15 (bbb) (ccc)	1/2 pin spacing shown in table 2, Case 15
14	Radial clearance of bare line conductors from vegetation in Extreme and VeryHigh Fire Threat Zones in Southern California (aaa) (ddd) (hhh)(jjj)			18 inches (bbb)		48 inches (bbb) (iii)	48 inches (fff)	120 inches (ggg)

References to Rules Modifying Minimum Clearances in Table 1

	Rule
(a) Shall not be reduced more than 5% because of temperature or loading	37
1 Supply lines	54.4–B1
2 Communication lines	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	58.4–C
(d) Special clearances are provided for street lighting equipment	58.5–B
(e) Based on trolley pole throw of 26 feet. may be reduced where suitably protected	56.4–B2
1 Supply guys	56.4–B2
2 Supply cables and messengers	57.4–B2
3 Communication guys	86.4–B2
4 Communication cables and messengers	87.4–B2
(f) May be reduced depending on height of trolley contact conductors	
1 Supply service drops	54.8–C5
2 Communication service drops	84.8–D5
(g) May be reduced and shall be increased depending on trolley throw	
1 Supply conductors (except service drops)	54.4–B2
2 Communication conductors (except service drops)	84.4–B2
(h) May be decreased where freight cars are not transported.	
1. Trolley contact and feeder conductors.	74.4-B1
2. Trolley span wires	77.4-A
(i) May be reduced for trolley contact and span wires in subways, tunnels, under bridges and in fenced areas	
1 Trolley contact conductors	74.4–E
2 Trolley span wires	77.4–B
(j) May be reduced at crossings over private thoroughfares and entrances to private property and over private property	
1 Supply service drops	54.8–B2
2 Supply guys	56.4–A
3 Communication service drops	84.8–C2
4 Communication guys	86.4–A
(k) May be reduced along thoroughfares where not normally accessible to vehicles	
1 Supply guys	56.4–A1
2 Communication guys	86.4–A1
(l) May be reduced where within 12 feet of curb line of public thoroughfares	
1 Supply service drops	54.8–B1
2 Communication service drops	84.8–C1
(m) May be reduced for railway signal cables under special conditions	84.4–A4

References to Rules Modifying Minimum Clearances in Table 1	Rule
(n) May be reduced in rural districts	
1 Intentionally left blank	
2 Intentionally left blank	
3 Communication conductors along roads	84.4–A2
(o) May be reduced for transformer, regulator or capacitor leads	
1 Transformer leads	58.1–B
2 Regulator or capacitor leads	58.1–B
(p) May be reduced across arid or mountainous areas	
1 Supply conductors of more than 22,500 volts	54.4–A1
2 Communications conductors	84.4–A1
(q) Shall be increased or may be reduced under special conditions	
1 Supply service drops	54.8–B3
2 Intentionally left blank	
3 Communications conductors	84.4–A3
4 Increased for communication service drops on industrial or commercial premises	84.8–C3a
5 Communication service drops on residential premises	84.8–C3b
(r) May be reduced above roofs of buildings under special conditions	
1 Supply overhead guys	56.4–G
2 Supply service drops	54.8–B4
3 Communication overhead guys	86.4–F
4 Communication conductors and cables	84.4–E
5 Communication service drops	84.8–C4
(s) Also applies at fire escapes, etc.	
1 Supply conductors	54.4–H1
2 Vertical clearances	54.8B4a
3 Horizontal clearance	54.8–B4b
4 Communication conductors	84.4–E
(t) Special clearances where attached to buildings, bridges or other structures	
1 Supply conductors of 750 - 22,500 volts	54.4–H2
2 Trolley contact conductors	74.4–E
3 Communication conductors	84.4–F
(u) Reduced clearances permitted under special conditions	
1 Supply service drops on industrial or commercial premises	54.8–B4a
2 Supply cables, grounded	57.4–G
3 Communication cables beside buildings, etc.	84.4–E
4 Communication conductors under bridges, etc.	84.4–F
5 Communication service drops	84.8–C4
6 Communication cables passing nonclimbable street light poles, etc.	84.4–D4a
(v) May be reduced under special conditions	
1 Supply conductors of 750 - 7,500 volts	54.4–H1
2 Supply transformer lead and bus wires, where guarded	58.1
(w) May be reduced at angles in lines and transposition points	
1 Supply conductors	54.4–D1
2 Communication conductors	84.4–D5
(x) May be reduced for suitably protected lateral or vertical runs	
1 Supply bond wires	53.4
2 Supply ground wires	54.6–B
3 Supply lateral conductors	54.6–C
4 Supply vertical runs	54.6–D
5 Supply risers	54.6–E
6 Communication ground wires	84.6–B
7 Communication lateral conductors	84.6–C
8 Communication vertical runs	84.6–D
9 Communication risers	84.6–E
(y) Increased clearances required for certain conductors	
1 Unattached conductors on colinear and crossing lines	32.3
2 Unattached supply conductors	54.4–D3
3 Supply service drops on clearance crossarms	54.8–C2
4 Supply service drops on pole top extensions	54.8–C3
5 Unattached supply service drops	54.8–D
6 Communication lines, colinear, conflicting or crossing	84.4–D3
7 Communication conductors passing supply poles and unattached thereto	84.4–D4
8 Communication service drops on clearance crossarms	84.8–D2
9 Communication service drops on pole top extensions	84.8–D3
10 Unattached communication service drops	84.8–E
(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	54.4–D5
2 Service supply drops from racks	54.8–F
3 Supply cables and messengers attached to poles	57.4–F
4 Communication conductors on communication poles	84.4–D
5 Communication conductors on crossarms	84.4–D1
6 Communication conductors attached to poles	84.4–D2
7 Communication service drops attached to poles	84.8–B
8 Communication cables and messengers	87.4–D
9 Supply or communication cables and messengers on jointly used poles	92.1–B
10 Communication open wire on jointly used poles	92.1–C
11 Multiconductor cable with bare neutral	54.10–B1
(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 deadend construction	
1 Conductors deadended in vertical configuration on poles	54.4–C4
2 Conductors deadended in horizontal configuration	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 Suitable insulated leads to protect runs	54.4–E
2 Leads of 0 - 5,000 volts to equipment	54.4–E
3 Leads of 0 - 5,000 volts to cutouts or switches	58.3–A2
(hh) Reduced clearance permitted from temporary fixtures and lighting circuits 0 - 300 volts	78.3–A1
(ii) Special Clearances Required Above Public and Private Swimming Pools	
1 Supply line conductors	54.4–A3
2 Supply service drops	54.8–B5
3 Communication line conductors	84.4–A5
4 Communication service drops	84.8–C5
5 Supply guys, span wires	56.4–A3
6 Communication guys	86.4–A3
(jj) May be decreased in partial underground distribution	54.4–D2

References to Rules Modifying Minimum Clearances in Table 1 Rule

(kk) Shall be increased by 0.025 feet per kV in excess of 300 kV

(ll) Shall be increased by 0.04 feet per KV in excess of 300 kV

(mm) Proposed clearances to be submitted to the cpuc prior to construction for circuits in excess of 550 kV.

(nn) Voltage shown in the table shall mean line–to–ground voltage for direct current (DC) systems

(oo) May Be reduced for grounded or multi–conductor cables

1	Grounded cables	57.4–H
2	Multi–Conductor cables	54.10–B2

(pp) May be reduced to 4 feet for voltages below 7,500 volts 54.4–D3

(qq) May be reduced to 6 feet for voltages below 75 kV

(rr) May be reduced for supply service drops 54.8–D1

(ss) May be reduced for communications service drops 84.8–E1

(tt) Where a federal agency or surrogate thereof has issued a crossing permit, clearances of that permit shall govern.

(uu) Or where sailboating is prohibited and where other boating activities are allowed

(vv) Clearance above contiguous ground shall be 5 feet greater than in cases 11 or 12 for the type of water area served for boat launch facilities and for area contiguous thereto, that are posted, designated or specifically prepared for rigging of sailboats or other watercraft.

(ww) For controlled impoundments, the surface areas and corresponding clearances shall be based upon the high water level. for other waters, the surface area shall be that enclosed by its annual flood level. the clearance over rivers, streams and canals shall be based upon the largest surface areas of any one–mile long segment which includes the crossing. The clearance over a canal, river or stream normally used to provide access for sailboats to a larger body of water shall be the same as that required for the larger body of water.

(xx) Water areas are lakes, ponds, reservoirs, tidal waters, rivers, streams and canals without surface obstructions.

(yy) May be reduced over non–walkable structures 54.8 (Table 10)

(zz) May be reduced to 2 feet for conductors insulated in accordance with 20.9–G

(aaa) Special requirements for communication and supply circuits energized at 0 - 750 volts 35

(bbb) May be reduced for conductor of less than 60,000 volts when protected from abrasion and grounding by contact with tree 35

(ccc) For 22.5 kV to 105 kV, minimum clearance shall be 18 inches.

(ddd) Clearances in this case shall be maintained for normal annual weather variations, rather than at 60 degrees, no wind.

Rule

(eee) May be reduced to 18 feet if the voltage does not exceed 1000 volts and the clearance is not reduced to more than 5% below the reduced value of 18 feet because of temperature and loading as specified in Rules 37 and 43.

(fff) Clearances in this case shall be increased for conductors operating above 72 kV, to the following:

1 Conductors operating between 72kV and a 110 kV shall maintain a 72 inch clearance

2 Conductors operating above 110 kV shall maintain a 120 inch clearance

(ggg) Shall be increased by 0.40 inch per kV in excess of 500 kV

(hhh) Extreme and Very High Fire Threat Zones are defined by California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) Fire Threat Map. The FRAP Fire Threat Map is to be used to establish approximate boundaries for purposes of this rule. The boundaries of the map are to be broadly construed, and utilities should use their own expertise and judgment to determine if local conditions require them to adjust the boundaries of the map. Southern California shall be defined as the following: Imperial, Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura Counties.

(iii) May be reduced to 18 inches for conductors operating less than 2.4 kV.

(jjj) Clearances in this case shall not apply to orchards of fruit, nut or citrus trees that are plowed or cultivated. In those areas Case 13 clearances shall apply.

(kkk) For communication conductors across or along public thoroughfares see 84.4–A(6).

Note: Revised February 1, 1948 by Supplement No. 1 (Decision No. 41134, Case No. 4324); January 2, 1962 by Resolution E–1109; February 7, 1964 by Decision No. 66707; March 29, 1966 by Decision No. 70489; August 9, 1966 by Decision No. 71094; September 18, 1967 by Decision No. 72984; March 30, 1968 by Decision No. 73813; January 8, 1980 by Decision No. 91186; March 9, 1988 by Resolution E–3076; November 21, 1990 by Resolution SU–6; January 21, 1992 by Resolution SU–10; and November 6, 1992 by Resolution SU–15, September 20, 1996 by Decision 96–09–097, October 9, 1996 by Resolution SU–40, January 23, 1997 by Decision 97–01–044, January 13, 2005 by Decision No. 0501030 , January 12, 2012 by Decision No. 1201032, and January 21, 2015 by Decision 1501005