

Decision No. 38755

BEFORE THE RAILROAD COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of
SOUTHERN CALIFORNIA EDISON COMPANY LTD.,
a corporation, for an order of the
Railroad Commission of the State of
California authorizing it to deviate
from those provisions of General Order
No. 95 herein mentioned.

ORIGINAL

Application No. 27072

O P I N I O N

Southern California Edison Company Ltd., a California corporation, (hereinafter called Edison) seeks herein an order authorizing it to deviate from certain requirements of General Order No. 95. The particular provisions of the rules of General Order No. 95 from which Edison seeks authority to deviate and the nature of the proposed deviations and the reasons therefor are as follows:

1. Rule 22.2 (G.O. 95, page 20) Protective Covering.

Rules 53.4-A, 53.4-B, and 54.6-B and other rules require the use of a suitable protective covering of wood or other material having the insulating efficiency and mechanical strength of $1\frac{1}{2}$ inches of redwood or hardwood moulding (oak or rock elm) $\frac{3}{8}$ inch in thickness.

Edison's past practice has been to use moulding having a cross section as shown in Figure 81 of Appendix G, G.O. 95, but at present an adequate supply of oak and rock elm is not available. Edison now proposes to use a material known in industry as "tough southern ash," which Edison judges to be green ash (*Fraxinus pennsylvanica lanceolata*), made into moulding having a cross section as shown in Figure 81, Appendix G, G.O. 95. Tests have demonstrated that this moulding is equivalent to and in some respects superior to oak moulding.

By reason of the foregoing Edison seeks authorization to use "green ash" as a substitute for oak or rock elm. Under the circumstances, the deviation appears reasonable and will be granted as requested.

2. Rule 38 (G.O. 95, page 39); Rule 56.4-C4 (page 132); and Rule 56.4-C4 (page 219) - Clearances between Guys and Communication Cables

These rules provide that a clearance of three inches must be maintained between guys and communication conductors. This application is for specific deviation phrased in the same language as a deviation previously granted to some other utilities within the state. The deviation as requested permits the use of an insulator in the guy and a mechanical abrasion protector mounted on the communication conductors as a substitute for the three-inch separation required by the rules. In this form the deviation has a disadvantage that when one utility avails itself of the deviation, it is incumbent on the other utility involved to perform certain construction operations on its plant. The deviation appears reasonable and will be granted substantially as requested with the added option that the abrasion protector may be placed on the guy rather than on the communication cable or messenger.

3. Rule 52.7-D (G.O. 95, page 90) Separation from Metal Pins and Dead-end Hardware

This rule reads in part as follows: "... hardware for cutouts or other apparatus ... supported by or attached to the surfaces of ... wood crossarms shall have a clearance of not less than 1½ inches from metal pins and dead-end hardware ..."

(A) When sectionalizing switches are installed on crossarms in a manner similar to that shown on Edison's Drawing No. C0621, Exhibit "A" attached to the application, it is not practicable and furthermore does not constitute good practice to attempt to maintain an electrical clearance between dead-end hardware and switch bases. In a sectionalizing switch of the type shown on this drawing, the dead-end insulator is an integral part of the switch and it is impossible to separate dead-end hardware from the switch base.

(B) There are conditions under which it is necessary to install cutouts on arms on which steel pins are installed. On circuits of more than 7,500 volts and in some cases less than 7,500 volts in certain areas, the bases of cutouts often are permanently bonded to prevent burning of crossarms. Steel pins on the same arms frequently are bonded to prevent crossarm burning.

Under these circumstances it is apparent that Rule 52.7-D is unnecessarily restrictive and a deviation therefrom appears reasonable and will be granted as requested.

4. Rule 54.4-D7b (G.O. 95, page 103) Conductors - Radial Clearance from Center of Pole

Applicant asserts that the requirements of this rule are objectionable and burdensome in requiring the modification of basic radial clearances between the center line of the pole and the conductors of different voltages in certain cases of dead-end construction. The objections raised are:

1. The clearances for dead-end construction exceed the clearances for the same line when not dead ended.
2. Construction in conformity with the General Order will considerably increase the investment.
3. The required construction is more hazardous, particularly with respect to the use of "live line" tools.
4. The required construction will, because of the mechanical arrangement, impair the separation between lines so equipped and lines at a lower level.
5. The use of the alternative construction would necessitate the use of arm guys which likewise would result in increased cost and hazards.

The inclusion of this rule in General Order No. 95 was an attempt to minimize certain hazards which were present in construction permitted by an earlier General Order. The method applied to eliminate these hazards, however, was not exclusive. It is believed that alternative methods of construction can achieve the same result and at the same time be less restrictive than the present requirements. The request for relief from the provisions of this rule appears justified and the order will authorize a deviation therefrom.

5. Rule 54.7-A (G.O. 95, page 112) Climbing Space

This rule provides in effect that climbing space through a conductor level must be maintained both four feet above and four feet below the level except that under certain conditions climbing space need only be provided up to

and not through the level of conductors at the top of a pole. Applicant alleges that in those instances where related buck arms are subsequently installed, the requirement that the climbing space be maintained four feet above the level of the buck arm and the requirement that the climbing space need not extend through the level of the top conductors, are either inconsistent or would necessitate increasing the separation between the line conductors and the conductors on the related buck arm. It is the Commission's opinion that if the climbing space is maintained up to the top conductors, the subsequent installation of a related buck arm below the top conductors need not necessitate provision for climbing space through and above the top conductor level. The deviation appears reasonable and will be granted.

6. Rule 52.7-D (G.O. 95, page 90) Separation of Through Bolts from Dead-End Hardware

The above rule requires, among other things, that through bolts shall have a clearance of not less than $1\frac{1}{2}$ inches from dead-end hardware. Applicant alleges that this rule was formulated to eliminate the hazard that would be present if a dead-end insulator were connected to a through bolt in the climbing space, which through bolt a workman might contact while climbing through or working at that level. Applicant cites certain of its Accident Prevention Rules as prohibiting work on lines normally energized at more than 7,500 volts except with "hot line tools" or while such lines are effectively grounded, and states that there is no occasion for a workman to climb through or work at the level of such a circuit at the top of a pole while the circuit is energized. Therefore, Applicant seeks relief from this requirement. This request will be granted.

In item 6 of the application, Edison also requests permission to deviate from the requirements of Rule 54.4-D7b with respect to clearance of conductors from poles. This request supplements the permission sought in item 4 of the application, is subject to the same considerations, and will be covered by the corresponding section of the following Order.

7. Rule 54.8-B4b (G.O. 95, page 120) Clearances from Openings in Residential Buildings

Applicant alleges that the three-foot clearance specified in a portion of this rule does not clearly apply to conductors (service drops) attached to a building, and further states that it has endeavored to apply the three-foot clearance to all service drops, but finds that such application in some cases is economically impossible. Therefore, Applicant asks permission to use lesser clearances, with a minimum clearance of one foot radially, from the upper boundary of exits, windows, doors, and other openings for those portions of service drops which are above the horizontal plane of such upper boundary. The Commission approves of Applicant's position in endeavoring to exclude all conductors from that space enclosed by a surface all points of which are a distance of three feet from any building opening, and is further cognizant of the difficulties which such might entail when attempts are made to apply it without exception to certain types of residential construction. The requested deviation appears not unreasonable and the Order herein will provide for mitigation of this difficulty.

8. Rule 58.3-B5 (G.O. 95, page 150) Transformers - Case and Lead Wire Clearances - From Hardware

In order to obtain the advantages of transformers bolted directly to poles, Edison proposes to cover the portions of such transformer mounting through bolts which extend into the climbing space with a suitable covering of impregnated fibre which will serve to prevent contact by workmen with such portions of through bolts. The coverings shall have dimensions of not less than those shown in the attached Exhibit "E" (Edison Drawing No. 25284). The deviation appears reasonable and will be granted.

9. Rule 58.5-D (G.O. 95, page 156) Rule 54.7-A4, Clearance of Switches from Center Line of Pole

Applicant cites portions of the above rules and infers therefrom that the rules prohibit the use of certain equipment heretofore adopted as standard apparatus in the construction of Applicant's overhead lines. As specific examples it cites the installation of gang operated air-disconnect switch assemblies, which, when installed in accordance with accepted past practice,

violate these rules when strictly construed. The Commission recognized the difficulties outlined by Applicant, and is of the opinion that no useful purpose would be served by denying Applicant the right to use the equipment mentioned. The requested deviation appears reasonable and the Order herein will provide relief.

ORDER

The Commission having considered the above application and being of the opinion that a public hearing is unnecessary, and good cause appearing,

IT IS HEREBY ORDERED that the Southern California Edison Company Ltd. be, and it is hereby authorized, to deviate from the provisions of General Order No. 95 in the following particulars and under the conditions hereinafter specified.

1. Rule 22.2 (G.O. 95, page 20) Protective Covering, Suitable

The use of "green ash" is hereby authorized for hardwood moulding used as a suitable protective covering as described in Rule 22.2.

2. Rule No. 38 (G.O. 95, page 39); Rule 56.4-C4 (page 132); Rule 86.4-C4 (page 219) - Clearances between Guys and Communication Cables

The minimum clearance of three inches specified in Rule 38, Table 2, Case 19, Column C, Rule 56.4-C4 and Rule 86.4-C4 need not be maintained between anchor guys and communication conductors other than open wire conductors, provided that: (1) The guy is not a "guy in proximity," as defined in Rule 21.3-D, to supply conductors; or (2) all parts of the guy are six feet or more below 0-750 volt supply conductors supported on the same pole to which the guy is attached; or (3) the guy is a "guy in proximity" to supply conductors, said supply conductors are not less than six feet above the communication messenger and/or cable, and said guy is sectionalized by an insulator (a) located either three inches or more above the communication messenger and/or cable and not less than six feet from the surface of pole in accordance with Rule 56.7-B, or (b) located less than six feet from the surface of pole and not less than three inches or more than six inches above the messenger and/or cable in which case it shall not be necessary to install a second insulator in the guy below the

communication messenger or cable in accordance with the first sentence of Rule 56.7-B; and (4) in every case where a clearance of three inches is not maintained a suitable wood guard shall be placed on the guy or on the messenger or cable to prevent physical contact of the messenger and cable with the guy.

3. Rule 52.7-D (G.O. 95, page 90) Separation from Metal Pins and Dead-End Hardware

As an exception to the requirements of Rule 52.7-D, the mounting bolts and hardware of cutouts, air-break switches or other similar apparatus may contact, or may be electrically connected to, metal pins or dead-end hardware of insulators appurtenant to the same circuit, provided positive electrical contact is made.

4. Rule 54.4-D7b (G.O. 95, page 103) Conductors - Clearance from Pole.

The clearances of "not less than 24 inches from the center line of pole" and of "not less than 36 inches from the surface of pole," as required by certain provisions of Rule 54.4-D7b shall not apply, and in lieu thereof, the basic clearance distances of Table 1, Case 3, Columns E and F shall apply radially between energized portions of conductors and the center line of pole; provided, either the circuit concerned is in top circuit position on the pole, or all energized portions of line conductors which are dead ended in line with a distance less than 18 inches from center line of pole, and jumpers connected thereto, are not less than 18 inches radially from all points on the boundaries of the climbing space.

The reduced vertical clearance permitted by Rule 54.4-C1b shall not be applicable to conductors installed under the above deviation.

The radial clearance, specified above, between the energized portions of conductors and the center line of pole is not intended to apply to conductors dead ended at the top of pole in accordance with Rule 54.4-D8b.

5. Rule 54.7-A (G.O. 95, page 112); Rule 54.7-A3b (page 114)
Climbing Space

The requirement of Rule 54.7-A that climbing space shall be maintained for a distance of not less than four feet vertically both above and below each conductor level through which it passes and the requirements of Rule 54.7-A3b which relate to leaving certain pinholes in line arms and/or duck arms vacant,

shall not be held to apply to a single circuit of more than 7500 volts in horizontal configuration at the top of the pole, provided:

- (1) No portion of any conductor on the lower arm of related line and buck arm of such a circuit, or jumpers connected thereto, shall be a lesser radial distance from center line of pole than that required by Rule 37, Table 1, Case 8, and
- (2) Where line arm and related buck arm are present, climbing space as required by Rule 54.7-A2, with the deviation thereto granted under Decision No. 36790, shall be maintained through the level of the conductors on the lower arm from a distance of not less than four feet below such conductors, up to the level of conductors on the upper arm but need not extend through the level of the conductors on the upper arm.

6. Rule 52.7-D (C.O. 95, page 90) Separation of Through Bolts From Dead-End Hardware

The requirement of Rule 52.7-D that through bolts shall have a clearance of not less than $1\frac{1}{2}$ inches from dead-end hardware shall not apply to dead-end hardware and through bolts of a single circuit of 7500-46,000 volts in any configuration at the top of a pole, including through bolts and dead ends on related buck arms as well as on line arms or in pole-top triangular configuration, provided that, if said clearance is less than $1\frac{1}{2}$ inches, positive electrical contact shall be made.

7. Rule 54.8-B4b (C.O. 95, page 120) Clearance of Service Drops from Openings in Residential Buildings

Applicant may deviate from the requirements of Rule 54.8-B4b to the following extent:

Service drops shall be so installed that they clear all points on the surfaces which form the boundaries of exits, windows, doors, and other openings at which human contact might be expected by three feet radially, except that the clearance may be less than three feet for those portions of service drops which are above the horizontal plane through the top extremity of such openings provided the radial clearance from the top extremity is the maximum practical and in no event less than one foot.

8. Rule 58.3-B5 (G.O. 95, page 150), Transformers - Case and Lead Wire Clearances - From Hardware

The minimum clearance of one-inch air gap distance and $1\frac{1}{2}$ -inch creepage distance from transformer cases, hangers, and other transformer metal parts to through bolts, braces, and other hardware specified in Rule 58.3-B5 shall not apply to through bolts in metallic contact with transformer cases or metal parts thereof, nor to through bolts supporting heel arms, provided the portion of any such through bolt extending into the climbing space is covered with an impregnated fibre protective covering having dimensions not less than those specified in Exhibit "E" attached to the application (Edison Drawing No. 25284) and installed in a workmanlike manner.

9. Rule 58.5-D (G.O. 95, page 156), Clearance of Switches from Center Line of Pole

Rule 58.5-D may be applied as though it read as follows:

Switches and cutouts shall be so located that when in either open or closed position all energized parts thereof are not less than 15 or 18 inches from the center line of pole as required by Table 1, Case 8, and no part of such equipment shall be in the climbing space. Such apparatus is permitted to be wholly or in part in the working space. The clearance, specified above, of energized parts from center line of pole is not required of parts of non-fusible, air-break switches at pole-top position in circuits of 7500 volts or more, and climbing space need not be provided through and above the level of such switches.

This Order shall become effective on the twentieth day after the date hereof.

Dated at San Francisco, California, this 12th day of March, 1946.

L. Harold Anderson
James D. Russell
Harold P. Hulse

Commissioners