# PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA 

## Copy for:

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to Secretary

Director Numerical File
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SUBJECT:
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I hereby certify that the foregoing Resolution was duly introduced, passed and adopted at a regular sedghon of the Pblicudtilities Commigsion of the State of California, held on the__ 19 , 2s , the following Commissioners voting favorably thereon:


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## APPENDIX A

## LOW VOLTAGE MULTICONDUCTOR CABLE WITH BARE NEUTRAL, $0-750$ VOLTS

The following rules shall apply where multiconductor cable with bare neutral for circuits of nor more than 750 volts is attached to poles at clearances less than those specified in Table 1, Column D, Cases 8 and 9, and are supplemental to the rules of General Order No. 95, which shall be followed in all respects except as modified herein.

The term messenger, when used in the following rules, in addition to the definition set forth in Rule 21.9 of G.O. No. 95, also includes the bare neutral conductor when used as a principal supporting member of the cable.

## I. Material and Strength

A. MESSENGER:

The conditions specified in Rule 57.3 of G.O. No. 95 shall apply except that for cables not maintained from a cable chair, the addition of 200 pounds vertical load specified in Pule 49.7 B and 49.70 may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.
B. INSULATION:

The phase conductors shall be covered with an insulation suitable for the voltage involved and shall conform with the Insulated Power Cable Engineers' Association's current "Specification for Neutral Supported Secondary and Service Drop Cable."
C. JUMPERS:

Phase conductors shall be insulated as per Rule I-B above.

## II. Clearances and Climbing Space

A. POLE ARRANGEMENT AND CLEARANCES:
(1) Between Conductors in Cables: The conditions specified in Rule 57.4 shall apply and, in addition, no specified clearance is required between the insulated phase conductors and the bare neutral of such $0-750$ volt multiconductor cables.
(2) Clearance from Poles: 0-750 volt multiconductor cable with bare neutral shall be supported on an insulator and shall have a clearance of not less than $2 \frac{1}{8}$ inches from the surface of the pole.
(3) Vertical Clearance: When attached to poles or wood crossarms at less than 15 inches from center line of pole, such multiconductor cable shall be not less than 4 feet vertically above or 6 feet vertically below the unprotected supply conductor except that where a crossarm (or arms) is placed above a cable, the clearance of 6 feet may be reduced to not less than 4 feet below unprotected conductors of $0-750$ volts.
(4) Conductor Arrangement: In tangent construction, cables shall not be attached to more than one side of a pole (there being four sides). Climbing space in conjunction with these attachments shall be maintained as specified in Rule II-B.
(5) At Cable Terminations: The clearances required in Rule II-A(3) between a cable and unprotected 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 surface of the pole.
(6) Conductor Spacing: A vertical separation between individual phase conductors when supported in individual clevises or a multiconductor rack shall be not less than 6 inches.
(7) 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 $2 \frac{1}{2}$ inches from the surface of the pole. Service drops shall not be supported within 15 inches of the surface of the pole. The climbing space shall be as in Rule II-B(2), following.

## B. CLIMBING SPACE IN MULTICONDUCTCR CABLE CONSTRUCTION:

A climbing space shall be maintained through the level of conductors supported in cable construction and for a vertical distance of not less than 4 feet above and below the cable. The position of the climbing space through the levels of conductors in cable construction shall be related to climbing space to conductor levels above and below the cable in accordance with requirements of Rule 54.7-A of G.O. No. 95.
(1) Climbing Space in Tangent Construction on the Surface of the Pole: 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 equidistance to the center line of pole.
(2) Climbing Space in Corner Dead-end Construction: On corner dead-end poles, a 30 -inch square climbing space shall be provided in one quadrant or on one side of the pole.
(3) Suitably protected vertical conductors attached to the surface of poles, and guys, are allowed in climbing spaces provided that not 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.

## III. Service Drops

Phase conductors of service drops taken from multiconductor cables shall have insulation equivalent to that specified in Rule I-B. Where service drops are supported on ACSR or aluminum messenger, the messenger shall be protected against abrasion. Services supported on the messenger shall not be attached less than 15 inches from the center line of pole.

## IV. Fastenings

The provision of Rule 57.5 of G.O. No. 95 shall apply except that for cables not maintained from a cable chair, in the addition of 200 pounds vertical load specified in Rule $49.7 C$ of G.O. No. 95 may be reduced to 50 pounds to allow for the load imposed by workmen on ladders.

## V. Extended Messenger

Extended messengers in 0-750 volt multiconductor cable construction may be less than one span in length, provided a sectionalizing insulator is placed 6 feet to 9 feet from the dead-end pole.

## VI. Sags

The provisions of Rule 57.9 of G.O. No. 95 shall apply, except that the specified 200 -pound additional vertical loading for a man and cable chair may be reduced to 50 pounds where the cable is not maintained from a cable chair.

