

Decision No. 65458

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of)
MOUNT SAN JACINTO WINTER PARK AUTHORITY)
and L. E. DIXON COMPANY AND ERIC W.)
EMTMAN for an order authorizing them to)
deviate from certain provisions of)
Rule No. 49.1C of General Order No. 95)
so as to permit the setting of poles)
in rock formations as indicated by)
accompanying drawings and design data.)

Application No. 45263
(Filed March 20, 1963)

Henry Lockwood and Stanley H. Froid, for Mount San Jacinto
Winter Park Authority, Applicant.
Michael Graves, for L. E. Dixon Company and Eric W.
Emtman, Applicant.
N. R. Johnson, for Commission staff.

O P I N I O N

By this application Mount San Jacinto Winter Park Authority, as operator, and L. E. Dixon Company and Eric W. Emtman, as constructors, seek an order authorizing a deviation from Rule No. 49.1C of General Order No. 95, "Rules for Overhead Electric Line Construction" so as to permit the construction of a pole line by a method not included within the scope of the general order.

The matter was heard and submitted before Examiner Patterson in Los Angeles, on April 19, 1963.

This line will be used for the private transmission of electric energy from a substation in Chino Canyon near Palm Springs to the Mountain Station of the Palm Springs Aerial Passenger Tramway now under construction on Mount San Jacinto in Riverside County. The purpose of the line is to deliver electric energy for lighting and normal building operations at the Mountain Station of the tramway. The power source for the main tramway drive is to be

located at the base of the tramway and the facilities connected therewith are not involved in this application.

Mount San Jacinto Winter Park Authority is a public agency and public corporation of the State of California created by an act of the Legislature approved June 25, 1945 (Statutes 1945, Chapter 1040). L. E. Dixon Company and Eric W. Entman, operating as a joint venture, are the general contractors for the construction of the tramway.

The record shows that the proposed 12 KV overhead electric line approximately 14,000 feet in length, will traverse a remote area inaccessible to any form of ground vehicle or, it is alleged, to any human access without the aid of small, maneuverable helicopters to designated points from which access may be obtained to individual pole locations. The area to be traversed is stated to be entirely through a solid granite rock formation and wholly across public lands or lands owned by the Winter Park Authority.

Rule No. 49.1C of General Order No. 95 prescribes the minimum depth at which wood poles must be placed in the ground or in solid rock. Under this rule the very minimum depth at which any pole may be set, even if guyed, is 3 feet. Applicants contend that it would be impractical to provide transportation for the type of equipment required to drill holes into the solid rock so as to set the poles in accordance with the provisions of Rule No. 49.1C. Applicants have proposed, therefore, an alternative method of securing the poles which may be accomplished through the use of small tools which can be transported by helicopter to the pole locations.

Testimony for applicants was presented by a structural engineer licensed in California, who had prepared the proposed

design. His design proposal is set forth in Exhibit B attached to the application as supplemented by Exhibits F and G which were supplied in response to a staff request, Exhibit E. His proposal is to set the butt of each wood pole on the granite rock surface, encircling the base of the pole with a Chance #6277 galvanized, adjustable pole band which may be clamped about the pole base by means of tightening bolts. Two angle brackets would be bolted to the pole band and said brackets would be held firmly against the granite rock by two 3/4-inch expansion-type rock bolt anchors set 12 inches deep in the granite rock on opposite sides of the pole. Each pole would be further secured by three or four down guys fastened to the granite rock by means of R-315 expanding Chance rock anchors set 12 inches deep in solid rock. This type of construction would be used on thirty-six wood poles which would be 25 feet to 35 feet in length depending upon ground clearance requirements. The first two poles at the lower end of the line and a two-pole structure at the very top of the line would be set in the ground in the normal manner. Deadend-type construction would be used on poles subject to unequal or maximum stresses and at appropriate intervals in the line so as to resist the longitudinal forces in the event of failure of any of the line components. Since in informal discussions the staff had questioned the ability of the clamping action of the base pole band to hold the base of the pole securely, applicants proposed to provide two 1/2-inch diameter by 5 1/2-inch long lag screws through the pole band and into the base of the pole.

At the hearing a Commission staff engineer who has had

extensive experience in General Order No. 95 administration and in design problems connected therewith, opposed the use of the two lag screws at the base, as it was his opinion that their location at a point so near the end of the pole would not be effective because of splitting and checking of the wood fibers. He proposed in lieu thereof that four L-shaped brackets spaced at equal intervals around the pole be extended upwards along the pole approximately 3 feet and that they be fastened to the pole by means of two 5/8-inch through-bolts. The four brackets would be bolted to the pole band and each would be secured to the granite base by the same type of rock anchor bolts proposed by the structural engineer. He also proposed that the bottom pole band be raised 1 inch from the base of the pole.

Applicants' structural engineer agreed that the use of pole straps up the side of the pole would be preferable to inserting the lag screws so near the base of the pole, but he testified that in his opinion two such straps would be sufficient to resist the upward forces on the pole and that the staff's suggestion of drilling four holes at the base of the pole in such close proximity to each other would greatly increase the chances of shattering the rock during the drilling operation.

Applicants' structural engineer testified that the design he presented will comply with the strength requirements set forth in Section IV of General Order No. 95 including heavy loading requirements and safety factors as set forth therein.

The staff engineer also recommended that any maintenance work on the pole line should be performed only when the line is

de-energized, because of the inaccessibility and difficulties which would be entailed in the event of injury to a lineman. The practicality of this recommendation is supported by the evidence that applicants are providing a gas-driven generator which will furnish standby requirements for minimum lighting for the entire Mountain Station plus operation of the fire protection pump.

The staff engineer further recommended that periodic inspections be required at least every three years and that pole bands, guys and other pole hardware be tightened as necessary.

Based upon the record we find that it will be reasonable to grant a deviation from Rule No. 49.1C of General Order No. 95 to the extent set forth in the order which follows and that safety to workmen and to the public will not be lessened thereby.

O R D E R

IT IS ORDERED that the Mount San Jacinto Winter Park Authority and L. E. Dixon Company and Eric W. Emtman, in constructing and operating a 12 KV overhead electric line on Mount San Jacinto in Riverside County, are hereby authorized to deviate from the provisions of General Order No. 95 in the following particulars and subject to the conditions hereinafter specified:

The provisions of Rule No. 49.1C prescribing a minimum

pole setting depth of three feet need not apply provided:

1. The butt of the pole shall be set on solid rock with a Chance #6277 galvanized adjustable pole band, or equivalent, clamped about the pole base by means of tightening bolts with the bottom of such band located not less than 1 inch nor more than 1½ inches from the base end of the pole.

2. This pole band shall be bolted to two L-shaped, galvanized metal brackets 3 inches wide by 3/8 inches thick which are to be firmly anchored to the solid rock by two 3/4-inch expansion-type rock bolt anchors set a minimum of 12 inches deep in the solid rock on the opposite sides of each pole.

3. These two L-shaped metal brackets, or extensions thereof, as may be provided by separate galvanized metal straps 3 inches wide by 3/8 inches thick and bolted to the metal brackets, shall extend up the sides of the pole approximately 3 feet and shall be fastened to the pole not less than 2½ feet from the pole base by means of a 5/8-inch galvanized through-bolt.

4. Each pole shall be further secured by three or four down guys as necessary to meet the strength requirements of General Order No. 95. Said down guys are to be attached to the rock surface by means of R-315 expanding Chance rock anchors, or equivalent, set a minimum of 12 inches deep in solid rock.

5. No maintenance work shall be performed on the overhead portion of the line unless said line is first de-energized.

6. The pole line shall be inspected one year after it is

placed in operation and at intervals of not exceeding three years thereafter and the pole bands, guys and other pole hardware shall be tightened as necessary. A report setting forth the results of each such inspection shall be submitted to this Commission within ninety days of completion of such inspection.

The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 29th day of May 1963.

Robert E. Mitchell President
Robert E. Mitchell Acting President
Frederick B. Holbluff
William W. Bennett

Commissioners

Commissioner George G. Grover, being necessarily absent, did not participate in the disposition of this proceeding.

Commissioner Everett C. McKeage, being necessarily absent, did not participate in the disposition of this proceeding.