

# HUGHES BROTHERS

June 26, 1985

P.O. BOX 159 • 210 NORTH 13TH STREET • SEWARD, NEBRASKA 68434 • PHONE (402) 643-2991 • TELEX 438076

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

MONCKS CORNER, SOUTH CAROLINA

TYPE TS-14 DC

230 KV DOUBLE CIRCUIT TANGENT

HUGHES DRAWING NUMBER C4561-ADC

STRUCTURE RETEST

## POLE DIMENSIONS

(Circumference)

	<u>West Pole</u>	<u>East Pole</u>
Top	36-1/2"	37-3/4"
Upper Crossarm	38-1/8"	40-1/4"
Lower Braces	39-1/4"	42"
Lower Crossarm	43-1/4"	47-3/8"
Top X-Brace	46-1/2"	50-1/2"
Bottom X-Brace	49-5/8"	53-1/2"
Groundline	55-3/4"	57-1/2"
Butt	62-1/2"	59-3/4"

90' Class 1 Douglas Fir Poles



August 27, 1985

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230 KV DOUBLE CIRCUIT STRUCTURE TEST

TYPE TS-14DC

HUGHES DRAWING C4561-ADC

TEST NO. 6, CASE III LOADING

CASE III - NESC LIGHT LOADING

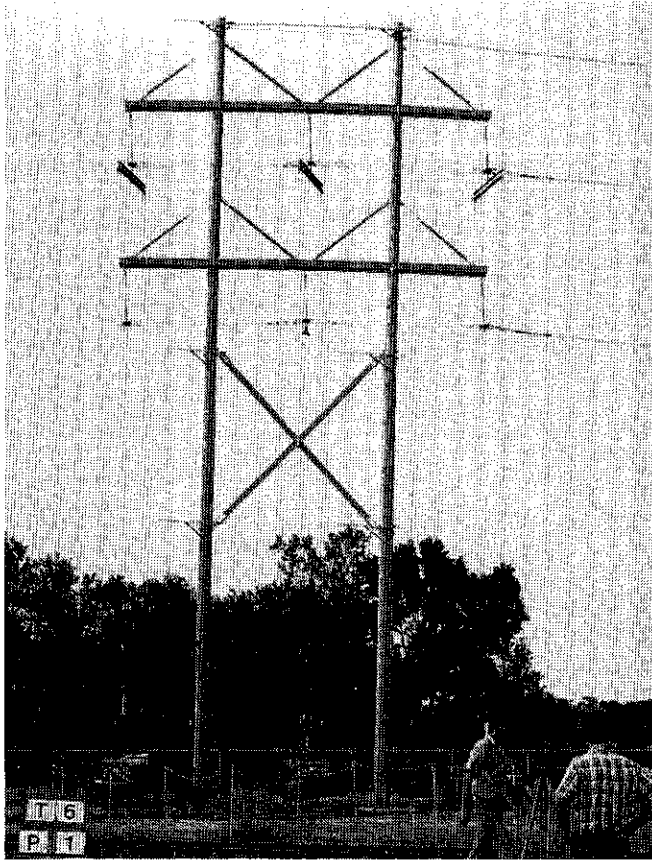
NO ICE  
9 PSF WIND

VERTICAL LOADS - COND: 7,500 LBS./PHASE  
SHIELD WIRE: 1,000 LBS./EA.

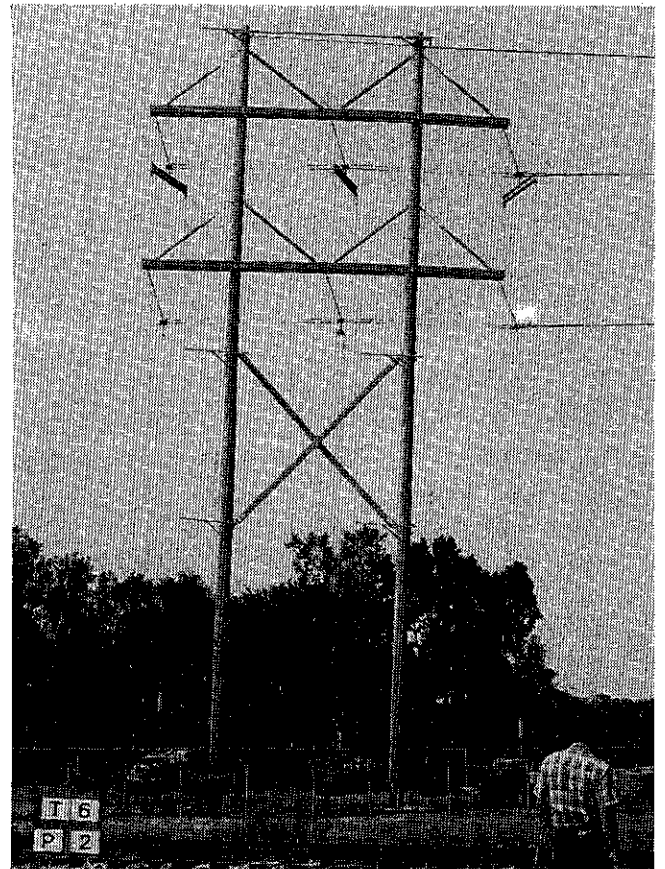
TRANSVERSE LOADS						
LOAD NO.	CONDUCTOR* LOAD/PHASE	SHIELD WIRE* LOAD/EA.	TOTAL STR. LOAD	DYNO. READING		SAFETY FACTOR
				COND. CIRCUIT	S.W.	
1	2,400	900	16,200	7,200	900	2.4 (60%)
2	3,200	1,200	21,600	9,600	1,200	3.2 (80%)
3	3,600	1,350	24,300	10,800	1,350	3.6 (90%)
4	4,000	1,500	27,000	12,000	1,500	4.0 (100%)
5	4,400	1,500	29,400	13,200	1,500	4.4 (109%)

\*NOTE: These loads include wind-on-the-pole components. Wind on pole is based on ANSI 0.5-1979 minimum pole dimensions.





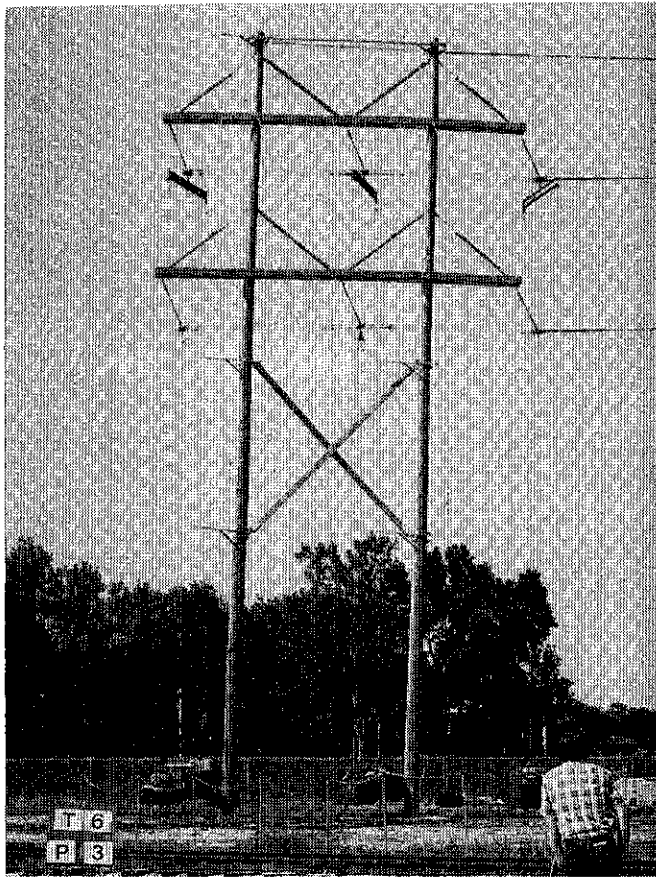
## **VERTICAL LOADS APPLIED**



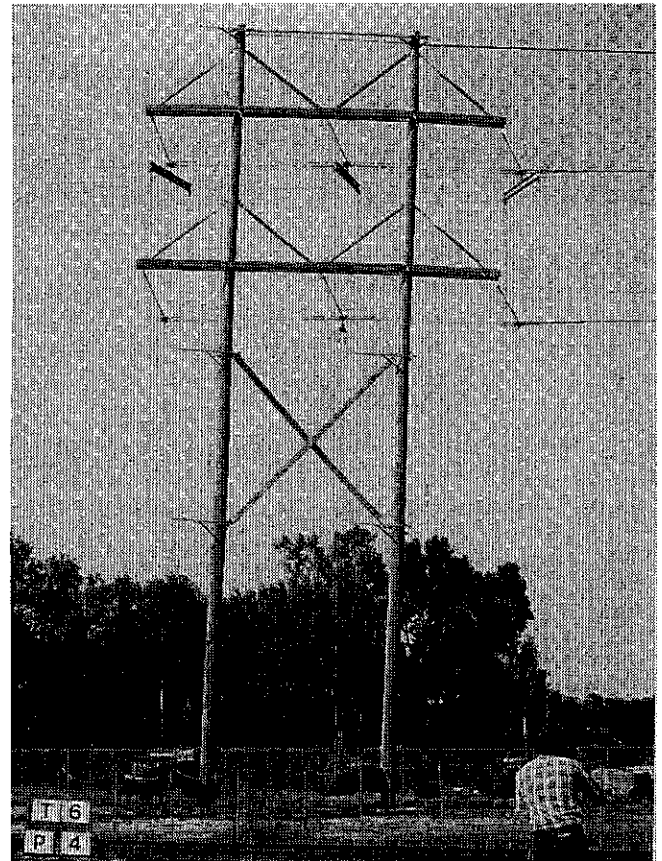
**16200 lbs.**

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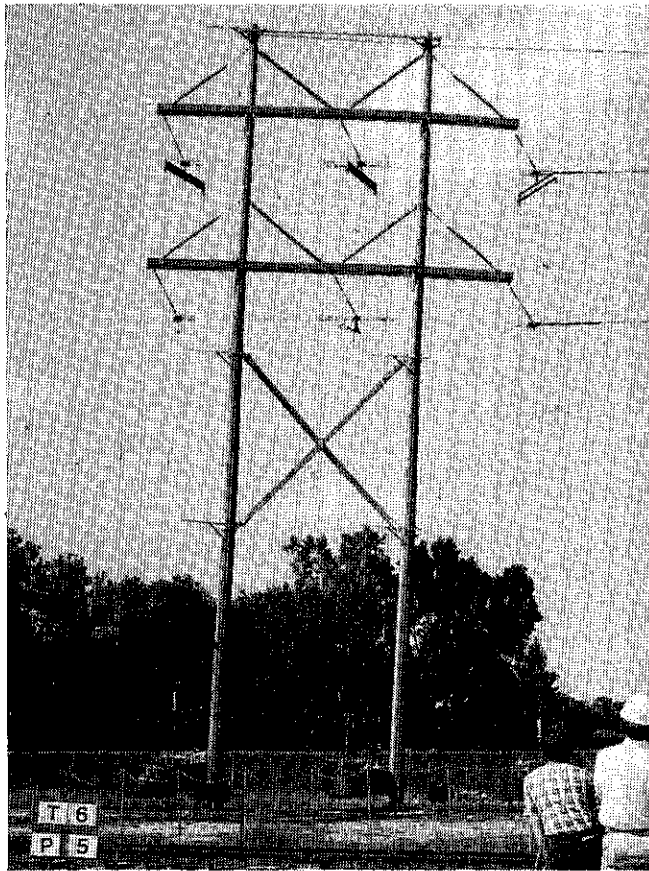
**21600 lbs.**



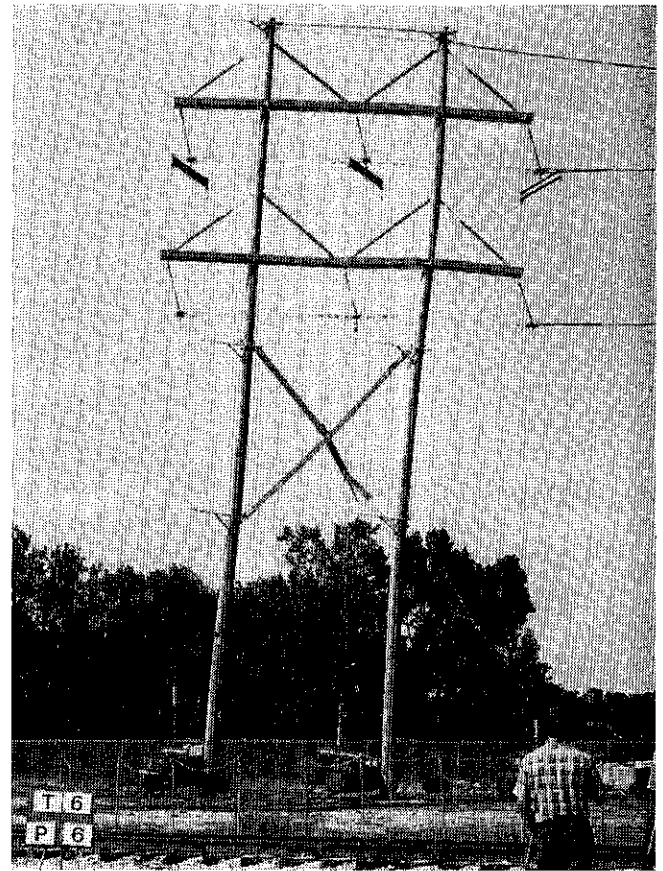
**24300 lbs.**

**HUGHES**  
**BROTHERS**

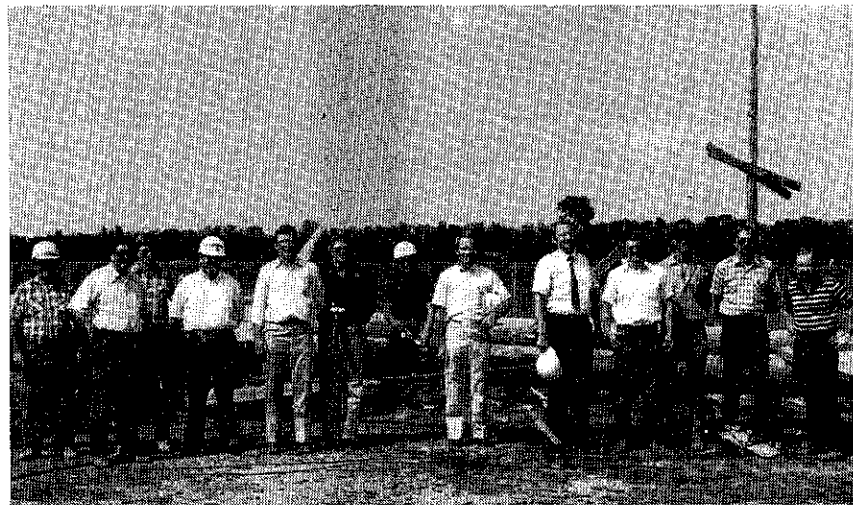
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**27000 lbs.**



**29400 lbs. Failure**



Left to Right: Stan Mifflin, HB; Steve Smith, HB; Carl Jirovsky, HB; Al Chaney, HB; Ken Johnson, SCPSA; Charlie Hamer, SCPSA; Wayne VonFeldt, PSCC; Larry Moore, SCPSA; Steve DeBoer, Reimers; Dan Policky, HB; Russ Mahalek, HB; Bob Reisdorff, HB; Merrill Peterson, HB.

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