4-TOWER SAMPLE POPULATION

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STATION CALL	ARRAY NOTE*	TOWER NUMBER	TOWER HEIGHT	PHASE DATA (DEGREES) THEO-RETICAL	OPER-ATIONAL	TOWER VARIANCE	AVERAGE ARRAY VARIANCE	FIELD DATA THEO-RETICAL	OPER-ATIONAL	TOWER VARIANCE	AVERAGE ARRAY VARIANCE
WNOG (day)	A	1	71.60	-100.00	-98.00	2.00	1.67	2.220	0.510	77.03%	58.02%
		2		-120.00	-117.00	3.00		1.670	0.330	80.24%	
		3		0.00	0.00	0.00		1.000	1.000		
		4		-20.00	-20.00	0.00		0.750	0.624	16.80%	
KSSA (night)	A	1	111.30	-90.00	-84.00	6.00	6.33	1.150	0.800	30.43%	15.06%
		2		1.00	2.00	1.00		0.900	0.800	11.11%	
		3		0.00	0.00	0.00		1.000	1.000		
		4		86.00	74.00	12.00		0.550	0.530	3.64%	
KGHT (night)	A	1	61.00	111.00	110.10	0.90	1.13	0.660	0.169	74.39%	77.01%
		2		-125.00	-127.30	2.30		1.410	0.682	51.63%	
		3		0.00	0.00	0.00		1.000	1.000		
		4		126.00	126.20	0.20		0.240	0.492	105.00%	
WXXI (night)	A	1	100.20	0.00	0.00	0.00	4.67	1.000	1.000		20.09%
		2		-183.60	169.70	6.70		1.036	0.750	27.59%	
		3		-210.70	145.00	4.30		1.122	0.912	18.74%	
		4		-39.40	-42.40	3.00		1.153	0.992	13.93%	
WJJD (night)	A	1	93.50	0.00	0.00	0.00	12.97	1.000	1.000		18.24%
		2		-112.00	-107.50	4.50		0.950	0.641	32.53%	
		3		-17.00	-36.40	19.40		1.000	1.165	16.50%	
		4		95.00	80.00	15.00		1.053	1.113	5.70%	
WWJZ (night)	C	1	85.70	0.00	0.00	0.00	5.70	1.000	1.000		15.63%
		2	85.70	68.00	63.10	4.90		0.880	1.030	17.05%	
		3	85.70	-95.00	-102.50	7.50		0.500	0.514	2.80%	
		4	85.70	-27.00	-22.30	4.70		0.440	0.559	27.05%	
WWJZ (day)	C	1	85.70	0.00	0.00	0.00	5.73	1.000	1.000		14.82%
		2	85.70	68.00	63.30	4.70		0.880	1.023	16.25%	
		3	85.70	-95.00	-102.70	7.70		0.500	0.507	1.40%	
		4	85.70	-27.00	-22.20	4.80		0.440	0.558	26.82%	
WCAO (day&night)	C	1	80.50	132.20	129.10	3.10	2.60	1.130	1.156	2.30%	4.91%
		2	80.50	0.00	0.00	0.00		1.000	1.000		
		3	80.50	9.60	9.00	0.60		0.892	0.928	4.04%	
		4	80.50	134.60	130.50	4.10		0.895	0.970	8.38%	
WKIK (night)	C	1	102.00	148.00	144.00	4.00	7.43	0.333	0.353	6.01%	19.77%
		2	102.00	0.00	0.00	0.00		1.000	1.000		
		3	134.30	-148.00	-160.50	12.50		1.000	0.490	51.00%	
		4	102.00	60.00	54.20	5.80		0.433	0.443	2.31%	

4-TOWER SAMPLE POPULATION

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STATION CALL	ARRAY NOTE*	TOWER NUMBER	TOWER HEIGHT	PHASE DATA (DEGREES) THEO-RETICAL	OPER-ATIONAL	TOWER VARIANCE	AVERAGE ARRAY VARIANCE	FIELD DATA THEO-RETICAL	OPER-ATIONAL	TOWER VARIANCE	AVERAGE ARRAY VARIANCE
KXL (night)	C	1	90.00	0.00	0.00	0.00	108.47	1.000	1.000		95.75%
		2	90.00	67.50	160.00	92.50		0.790	0.416	47.34%	
		3	77.00	166.60	-129.60	63.80		0.300	0.299	0.33%	
		4	77.00	234.10	65.00	169.10		0.240	0.815	239.58%	
WIFI (day&night)	C	1	97.00	-87.00	-44.40	42.60	22.50	0.800	1.107	38.37%	42.65%
		2	97.00	0.00	-23.40	23.40		0.950	1.396	46.95%	
		3	97.00	-87.00	-85.50	1.50		0.800	1.141	42.63%	
		4	97.00	0.00	0.00	0.00		1.000	1.000		
KBSG (night)	C	1	84.10	-141.90	-142.80	0.90	1.17	0.768	0.733	4.56%	16.49%
		2	84.10	0.00	0.00	0.00		1.000	1.000		
		3	66.40	107.00	105.30	1.70		0.633	0.895	41.39%	
		4	84.10	-95.90	-96.80	0.90		0.396	0.410	3.54%	
WPGC (night)	A,D	1	90.00	0.00	0.00	0.00	1.57	1.000	1.000		3.50%
		2		59.40	58.50	0.90		0.840	0.770	8.33%	
		3		132.00	130.30	1.70		0.925	0.934	0.97%	
		4		191.60	-170.50	2.10		1.002	0.990	1.20%	
WPGC (day)	A,D	1	90.00	0.00	0.00	0.00	1.33	0.263	0.280	6.46%	3.87%
		2		30.00	30.00	0.00		0.689	0.710	3.05%	
		3		60.00	58.00	2.00		0.382	0.390	2.09%	
		4		90.00	92.00	2.00		1.000	1.000		
WPZA (night)	A,D	1	90.00	-5.00	-8.00	3.00	7.40	1.350	0.808	40.15%	49.46%
		2		0.00	0.00	0.00		1.000	1.000		
		3		111.60	99.50	12.10		0.700	1.384	97.71%	
		4		106.60	99.50	7.10		0.950	1.050	10.53%	
WPZA (day)	A,D	1	90.00	0.00	0.00	0.00	4.17	1.000	1.000		16.52%
		2		33.50	32.00	1.50		0.770	0.818	6.23%	
		3		141.60	132.00	9.60		0.610	0.774	26.89%	
		4		108.10	109.50	1.40		0.790	0.920	16.46%	
KVVQ (night)	A,D	1	86.50	165.30	164.50	0.80	1.69	0.630	0.638	1.27%	3.84%
		2		0.00	0.00	0.00		1.000	1.000		
		3		-154.99	-155.80	0.81		0.770	0.735	4.55%	
		4		55.76	52.30	3.46		0.350	0.330	5.71%	
KVVQ (day)	A,D	1	86.50	-140.40	-141.10	0.70	0.55	0.510	0.485	4.90%	4.60%
		2		0.00	0.00	0.00		1.000	1.000		
		3		142.80	142.60	0.20		0.960	0.990	3.13%	
		4		-73.30	-74.06	0.76		0.450	0.476	5.78%	

4-TOWER SAMPLE POPULATION

PAGE 4

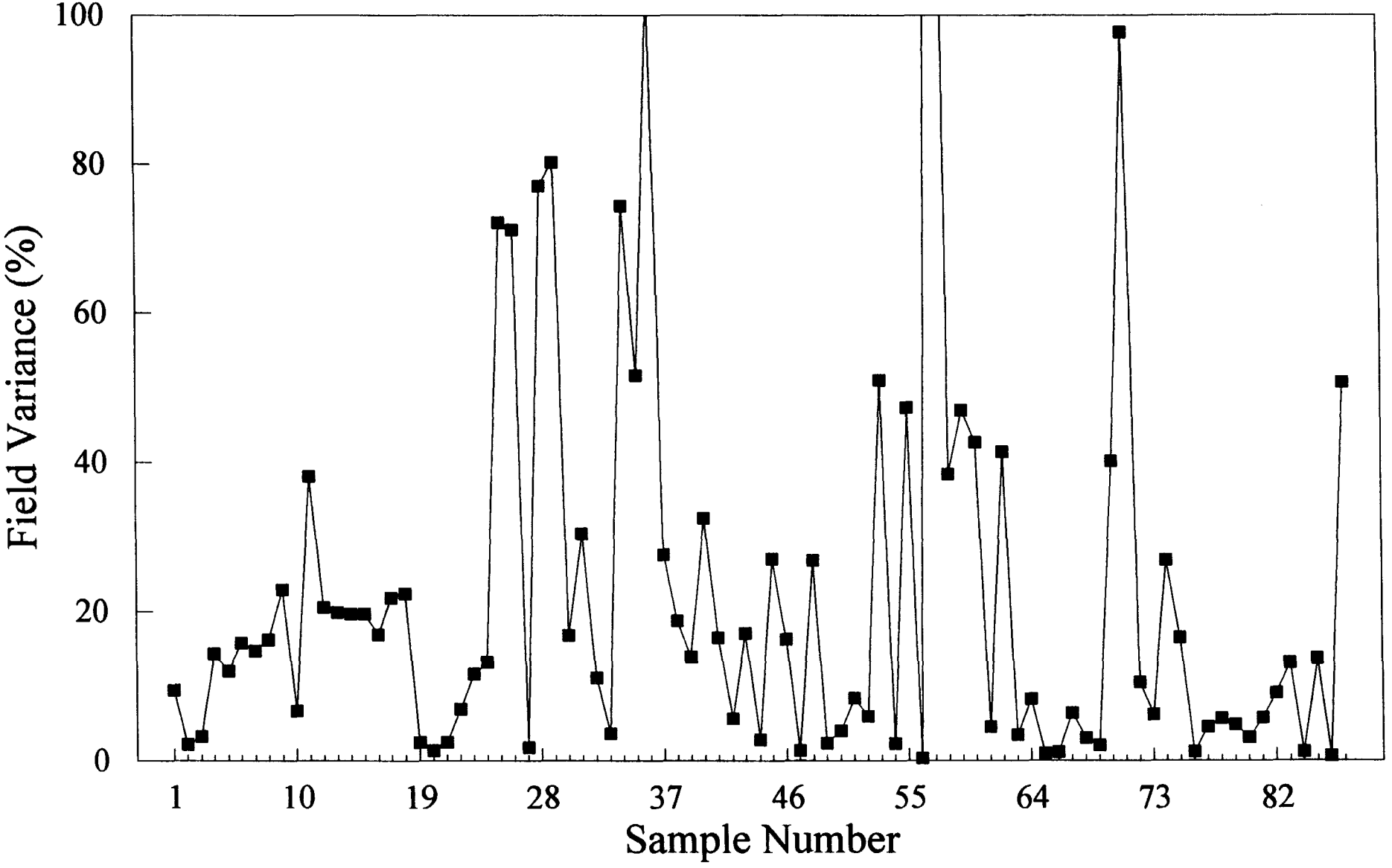
STATION CALL	ARRAY NOTE*	TOWER NUMBER	TOWER HEIGHT	PHASE DATA (DEGREES) THEO-RETICAL	OPER ATIONAL	TOWER VARIANCE	AVERAGE ARRAY VARIANCE	FIELD DATA THEO-RETICAL	OPER-ATIONAL	TOWER VARIANCE	AVERAGE ARRAY VARIANCE
WADN (day)	A,D	1	80.40	-170.40	29.00	160.60	75.97	0.550	0.600	9.09%	7.83%
		2		5.80	-57.70	63.50		1.370	1.550	13.14%	
		3		-109.30	-105.50	3.80		0.640	0.648	1.25%	
		4		0.00	0.00	0.00		1.000	1.000		
WKGM (night)	C,D	1	68.00	-128.00	-127.80	0.20	1.53	0.515	0.444	13.79%	21.71%
		2	68.00	0.00	0.00	0.00		1.000	1.000		
		3	68.00	125.00	121.80	3.20		1.148	1.156	0.70%	
		4	104.10	-100.00	-98.80	1.20		0.689	0.340	50.65%	
KSLR (night)	C,D	1	68.00	0.00	0.00	0.00	3.17	1.000	1.000		30.74%
		2	68.00	172.80	172.00	0.80		1.060	0.991	6.51%	
		3	68.00	-132.00	-128.00	4.00		1.130	1.040	7.96%	
		4	117.60	40.80	45.50	4.70		1.190	0.265	77.73%	
KSLR (day)	C,D	1	68.00	234.00	-137.20	11.20	38.63	0.296	0.307	3.72%	50.27%
		2	68.00	0.00	0.00	0.00		1.000	1.000		
		3	68.00	312.00	45.20	93.20		0.266	0.482	81.20%	
		4	117.60	90.00	101.50	11.50		1.000	0.341	65.90%	
WDPN (night)	C,D	1	96.00	150.50	156.50	6.00	56.67	0.579	0.660	13.99%	13.80%
		2	96.00	0.00	0.00	0.00		1.000	1.000		
		3	96.00	-45.50	-44.00	1.50		0.232	0.230	0.86%	
		4	60.00	22.50	-140.00	162.50		0.718	0.910	26.74%	
WFTK (day)	C,D	1	98.60	0.00	0.00	0.00	1.43	1.000	1.000		11.74%
		2	98.60	0.00	1.50	1.50		0.900	0.860	4.44%	
		3	98.60	112.00	114.20	2.20		0.930	0.955	2.69%	
		4	98.60	112.00	111.40	0.60		0.837	1.072	28.08%	

* *ARRAY NOTE:*

- **A** equal height, guyed towers, series excited
- **B** equal height, self-supporting towers, series excited
- **C** unequal heights, multiple type towers, top-loaded, folded unipoles or shunt excited
- **D** antenna(s) from other services mounted on tower(s)

Field Variance

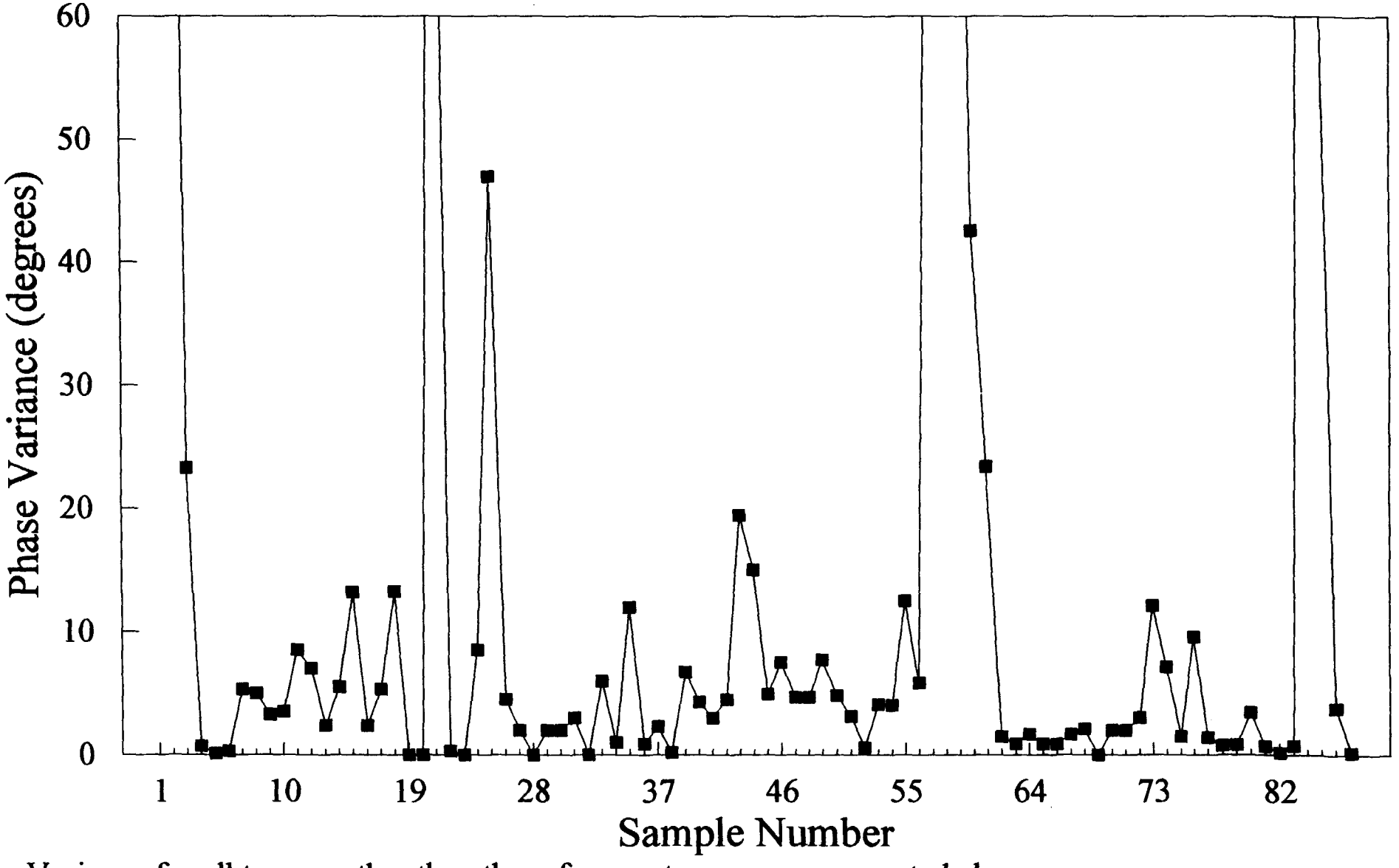
In a 4-Tower Directional Array



Variance for all towers other than the reference tower in the array are represented above.

Phase Variance

In a 4-Tower Directional Array



Variance for all towers other than the reference tower are represented above

Field Variance Summary

AVERAGE FIELD VARIANCE FOR DIRECTIONAL ARRAYS WITH:	equal height guyed series excited	equal height guyed series excited w/other services mounted on tower	equal height self supporting series excited	unequal height multi-type top-loaded, shunt excited, or folded unipoles	unequal height multi-type top-loaded, shunt excited, or folded unipoles w/other services mounted on tower	tower height in electrical degrees			
						less than 89	90 to 99	100 to 109	110 and up
2-Towers	13.7%	17.6%	26.4%	25.1%	34.9%	19.5%	19.7%	36.2%	29.9%
3-Towers	12.7%	28.5%	109.6%	25.4%	60.7%	16.4%	19.1%	7.4%	59.5%
4-Towers	26.4%	12.8%	none	26.9%	25.7%	23.4%	28.4%	14.9%	18.3%

Average field variance for each individual tower in a given directional array
Regardless of configuration or height

2-Towers	22.74%
3-Towers	26.57%
4-Towers	23.06%

Phase Variance Summary

AVERAGE PHASE VARIANCE FOR DIRECTIONAL ARRAYS WITH:	equal height guyed series excited	equal height guyed series excited w/other services mounted on tower	equal height self supporting series excited	unequal height multi-type top-loaded, shunt excited, or folded unipoles	unequal height multi-type top-loaded, shunt excited, or folded unipoles w/other services mounted on tower	tower height in electrical degrees			
						less than 89	90 to 99	100 to 109	110 and up
2-Towers	7.7	6.3	4.8	11.2	29.9	11.2	13.8	5.5	20.7
3-Towers	15.1	19.8	19.2	71.0	21.9	17.2	26.5	101.5	29.6
4-Towers	8.9	13.2	none	32.5	20.3	12.1	24.1	39.6	5.7

Average phase variance for each individual tower in a given directional array
Regardless of configuration or height

2-Towers	12.8
3-Towers	24.0
4-Towers	16.9

CERTIFICATE OF SERVICE

I, Lisa A. Wilson, a secretary in the engineering firm of Carl T. Jones Corporation, hereby certify that true copies of the foregoing "Reply Comments of Carl T. Jones Corporation FCC Notice of Inquiry" [MM Docket 93-177] have been served upon the following by First-Class United States Mail on this first day of March, 1994:

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