

R.F. EMISSION COMPLIANCE STATEMENT

As authorized by FCC CP ABPED-20030219ADT issued to WRFG, a Shively Directional antenna 6810-5R-DA was installed on the tower owned by Richand Tower in Atlanta Georgia at a height of 167 meters above ground. Table #1 is attached and made reference to. This table shows worse case calculated RF power densities that could reach the ground near the tower.

The formula (shown at bottom of Table #1) used to create the table is from the OET Bulletin, No. 65, August 1997, "Evaluating Compliance with F.C.C. Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", published by the Federal Communication Commission's Office of Science and Engineering. The relative field at the vertical angles was supplied by Shively as part of the antenna proof. As this table shows the WRFG antenna will cause no radiation above the limits cited in the above Bulletin.

There are other sources of RF emissions at the site; however all are exempt from environmental evaluation, based on OET 65, Table 2.

The applicant will protect workers on the tower by either reducing ERP or terminating transmission. A sign is posted warning workers of the antenna, with a phone number to contact someone to reduce or terminate power.

Consequently, it appears that the proposed FM station will be in full compliance with the Commission's human exposure to radiofrequency electromagnetic field rules and regulations.

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WRFG Richland Tower RF Exposure Analysis - TABLE #1

COMPLIANCE WITH FCC-SPECIFIED GUIDELINES FOR HUMAN EXPOSURE TO RADIOFREQUENCY RADIATION

Maximum Visual ERP		
Maximum Aural ERP (average) or Maximum DTV ERP	130	kW.
Relative Field at azimuth studied	1.000	at azimuth: 0 degrees
Average ERP at azimuth studied	130.000	kW.
Frequency	89.3	MHz.
Controlled Environment Density Limit	1.000	mw/cm
Uncontrolled Env. Density Limit	0.200	mw/cm
Antenna Height Above Ground	167	meters
Allowance for height of person:	2	meters
Allowance for elevation change/roof-top	0	meters
Radiation center height used:	165	meters
Minimum Distance - Occupational	66.00	meters - at average ERP specified above, main beam
Minimum Distance - Occupational	216.52	feet - at average ERP specified above, main beam
Minimum Distance - Public	147.57	meters - at average ERP specified above, main beam
Minimum Distance - Public	484.15	feet - at average ERP specified above, main beam
Minimum Distance - 5% of Public limit	659.95	meters - at average ERP specified above, main beam
Minimum Distance - 5% of Public limit	2165.20	feet - at average ERP specified above, main beam
Antenna model:Shivley 6810 5R DA	5	

Notes	Depress Angle deg.	Rel. field	Total Distance (meters)	Horiz Distance (meters)	Power density (mW/cm²)	% of \$1.1310 level (occupational)	% of \$1.1310 level (uncontrolled)
	0.1	1	94538.08	94537.94	0.000000	0.00%	0.00%
	-1	0.988	-9454.28	9452.84	0.000047	0.00%	0.02%
	-2	0.952	-4727.86	4724.98	0.000176	0.02%	0.09%
	-3	0.895	-3152.71	3148.39	0.000350	0.04%	0.18%
	-4	0.817	-2365.37	2359.61	0.000518	0.05%	0.26%
	-5	0.724	-1893.16	1885.96	0.000635	0.06%	0.32%
	-6	0.617	-1578.52	1569.87	0.000664	0.07%	0.33%
	-7	0.503	-1353.91	1343.82	0.000599	0.06%	0.30%
	-8	0.385	-1185.57	1174.04	0.000458	0.05%	0.23%
	-9	0.268	-1054.75	1041.77	0.000280	0.03%	0.14%
	-10	0.156	-950.20	935.76	0.000117	0.01%	0.06%
	-11	0.054	-864.74	848.85	0.000017	0.00%	0.01%
	-12	0.037	-793.61	776.26	0.000009	0.00%	0.00%
	-13	0.112	-733.49	714.69	0.000101	0.01%	0.05%
	-14	0.17	-682.04	661.78	0.000270	0.03%	0.13%
	-15	0.211	-637.51	615.79	0.000476	0.05%	0.24%
	-16	0.234	-598.61	575.42	0.000664	0.07%	0.33%
	-17	0.239	-564.35	539.69	0.000779	0.08%	0.39%
	-18	0.23	-533.95	507.82	0.000806	0.08%	0.40%
	-19	0.206	-506.81	479.19	0.000718	0.07%	0.36%
	-20	0.172	-482.43	453.33	0.000552	0.06%	0.28%
	-21	0.129	-460.42	429.84	0.000341	0.03%	0.17%
	-22	0.082	-440.46	408.39	0.000151	0.02%	0.08%
	-23	0.032	-422.29	388.72	0.000025	0.00%	0.01%
	-24	0.016	-405.67	370.60	0.000007	0.00%	0.00%
	-25	0.062	-390.42	353.84	0.000110	0.01%	0.05%
	-26	0.101	-376.39	338.30	0.000313	0.03%	0.16%
	-27	0.133	-363.44	323.83	0.000582	0.06%	0.29%
	-28	0.156	-351.46	310.32	0.000856	0.09%	0.43%
	-29	0.17	-340.34	297.67	0.001084	0.11%	0.54%
	-30	0.174	-330.00	285.79	0.001208	0.12%	0.60%
	-31	0.169	-320.36	274.61	0.001209	0.12%	0.60%
	-32	0.155	-311.37	264.06	0.001076	0.11%	0.54%
	-33	0.133	-302.95	254.08	0.000837	0.08%	0.42%
	-34	0.105	-295.07	244.62	0.000550	0.05%	0.27%
	-35	0.073	-287.67	235.64	0.000280	0.03%	0.14%
	-36	0.037	-280.71	227.10	0.000075	0.01%	0.04%
	-37	0	-274.17	218.96	0.000000	0.00%	0.00%
	-38	0.036	-268.00	211.19	0.000078	0.01%	0.04%
	-39	0.071	-262.19	203.76	0.000319	0.03%	0.16%
	-40	0.102	-256.69	196.64	0.000686	0.07%	0.34%
	-41	0.129	-251.50	189.81	0.001143	0.11%	0.57%
	-42	0.151	-246.59	183.25	0.001629	0.16%	0.81%
	-43	0.167	-241.94	176.94	0.002069	0.21%	1.03%
	-44	0.176	-237.53	170.86	0.002385	0.24%	1.19%
	-45	0.179	-233.35	165.00	0.002556	0.26%	1.28%
	-46	0.175	-229.38	159.34	0.002528	0.25%	1.26%
	-47	0.165	-225.61	153.86	0.002323	0.23%	1.16%
	-48	0.15	-222.03	148.57	0.001982	0.20%	0.99%
	-49	0.129	-218.63	143.43	0.001512	0.15%	0.76%

-50	0.105	-215.39	138.45	0.001032	0.10%	0.52%
-51	0.076	-212.32	133.61	0.000557	0.06%	0.28%
-52	0.045	-209.39	128.91	0.000201	0.02%	0.10%
-53	0.013	-206.60	124.34	0.000017	0.00%	0.01%
-54	0.021	-203.95	119.88	0.000046	0.00%	0.02%
-55	0.055	-201.43	115.53	0.000324	0.03%	0.16%
-56	0.089	-199.03	111.29	0.000869	0.09%	0.43%
-57	0.121	-196.74	107.15	0.001643	0.16%	0.82%
-58	0.152	-194.56	103.10	0.002651	0.27%	1.33%
-59	0.181	-192.49	99.14	0.003840	0.38%	1.92%
-60	0.207	-190.53	95.26	0.005127	0.51%	2.56%
-61	0.23	-188.65	91.46	0.006456	0.65%	3.23%
-62	0.25	-186.87	87.73	0.007773	0.78%	3.89%
-63	0.268	-185.18	84.07	0.009097	0.91%	4.55%
-64	0.282	-183.58	80.48	0.010249	1.02%	5.12%
-65	0.292	-182.06	76.94	0.011173	1.12%	5.59%
-66	0.3	-180.61	73.46	0.011983	1.20%	5.99%
-67	0.305	-179.25	70.04	0.012575	1.26%	6.29%
-68	0.307	-177.96	66.66	0.012926	1.29%	6.46%
-69	0.306	-176.74	63.34	0.013020	1.30%	6.51%
-70	0.303	-175.59	60.06	0.012933	1.29%	6.47%
-71	0.298	-174.51	56.81	0.012666	1.27%	6.33%
-72	0.29	-173.49	53.61	0.012136	1.21%	6.07%
-73	0.281	-172.54	50.45	0.011520	1.15%	5.76%
-74	0.271	-171.65	47.31	0.010826	1.08%	5.41%
-75	0.259	-170.82	44.21	0.009985	1.00%	4.99%
-76	0.245	-170.05	41.14	0.009016	0.90%	4.51%
-77	0.231	-169.34	38.09	0.008082	0.81%	4.04%
-78	0.216	-168.69	35.07	0.007121	0.71%	3.56%
-79	0.2	-168.09	32.07	0.006149	0.61%	3.07%
-80	0.184	-167.55	29.09	0.005238	0.52%	2.62%
-81	0.167	-167.06	26.13	0.004340	0.43%	2.17%
-82	0.15	-166.62	23.19	0.003520	0.35%	1.76%
-83	0.132	-166.24	20.26	0.002738	0.27%	1.37%
-84	0.114	-165.91	17.34	0.002051	0.21%	1.03%
-85	0.096	-165.63	14.44	0.001459	0.15%	0.73%
-86	0.077	-165.40	11.54	0.000941	0.09%	0.47%
-87	0.059	-165.23	8.65	0.000554	0.06%	0.28%
-88	0.04	-165.10	5.76	0.000255	0.03%	0.13%
-89	0.021	-165.03	2.88	0.000070	0.01%	0.04%
-90	0	-165.00	0.00	0.000000	0.00%	0.00%

"Angle deg." is the angle in degrees from the antenna to the point evaluated. 0 degrees is horizontal
"Distance" is the distance in meters from the center of the antenna to a point at the specified height above the ground
"Rel. field" is the relative field voltage from data supplied by the antenna manufacturer.
"Power Density" is the calculated power density using the formula in FCC OET Bulletin Number 65

$$33.4 * (\text{Relative Field})^2 (\text{ERP}) / \text{Distance}^2$$

"% of §1.1310 Permitted Level" is the percentage of the maximum exposure level permitted under FCC Rules §1.1310,