Human exposure to excess levels of radiofrequency radiation

The proposed facility is to be built using a 1-bay circularly polarized antenna.

According to OET 65, “Applicants and licensees should be able to calculate, based on considerations of frequency, power and antenna characteristics the distance from their transmitter where their signal produces an RF field equal to, or greater than, the 5% threshold limit. The applicant or licensee then shares responsibility for compliance in any accessible area or areas within this 5% “contour” where the appropriate limits are found to be exceeded.”

As can be seen in Exhibit 17-A, the proposed facility’s maximum contribution to RF on the site is 3.35 $\mu W/cm^2$ at a distance of 31 meters from the tower, which is 1.7% of the uncontrolled (public) exposure limit.

Therefore, because the proposed facility will not cause an RF field that is equal to or greater than 5% of the 200 $\mu W/cm^2$ limit for uncontrolled exposure at any point, the proposed facility complies with the requirements of OET 65.

EMF will fully cooperate with other site users to temporarily reduce power or cease broadcasting, as necessary, to protect workers and others having access to the site from excessive levels of RF Radiation.

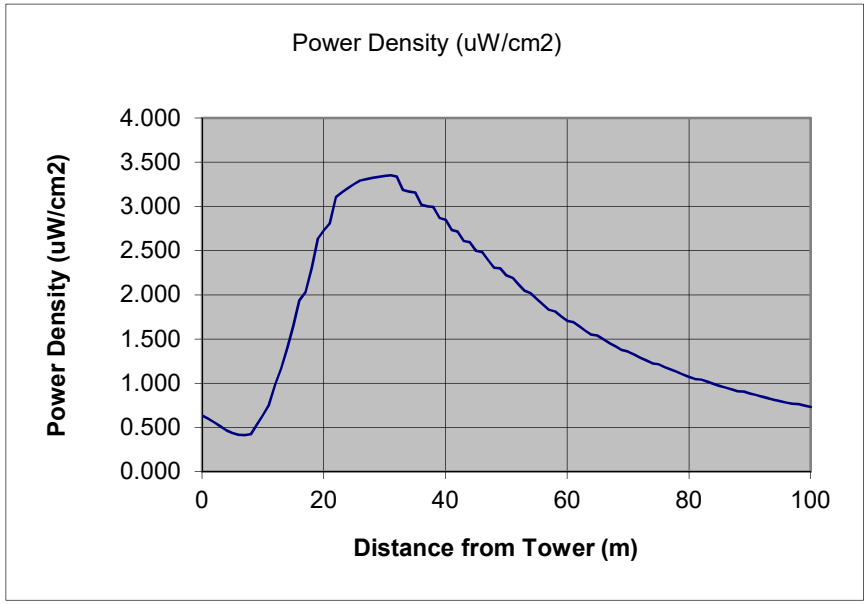
Specific Antenna RF Power Density Calculator

Based on Equation 10 of OET-65

Detailed Report

ERP	0.25	kW	% of OET-65	
Height above ground	20.0	meters	1.7%	Uncontrolled
Height above head	18.0	meters	0.3%	Controlled
Antenna Brand	**SCA**			
Antenna Model	**CA5-CP**			

Horizontal distance from tower (meters)	Angle (°)	Distance (m)	Field	Power (W)	Power Density (uW/cm2)
0	90	18.0	0.157	39.25	0.635
1	87	18.0	0.153	38.25	0.601
2	84	18.1	0.148	37	0.558
3	81	18.2	0.143	35.75	0.513
4	77	18.4	0.138	34.5	0.468
5	74	18.7	0.135	33.75	0.436
6	72	19.0	0.134	33.5	0.416
7	69	19.3	0.136	34	0.414
8	66	19.7	0.14	35	0.422
9	63	20.1	0.161	40.25	0.534
10	61	20.6	0.18	45	0.638
11	59	21.1	0.201	50.25	0.758
12	56	21.6	0.235	58.75	0.985
13	54	22.2	0.263	65.75	1.172
14	52	22.8	0.296	74	1.407
15	50	23.4	0.329	82.25	1.646
16	48	24.1	0.367	91.75	1.939
17	47	24.8	0.386	96.5	2.030
18	45	25.5	0.423	105.75	2.306
19	43	26.2	0.465	116.25	2.636
20	42	26.9	0.486	121.5	2.724
21	41	27.7	0.507	126.75	2.806
22	39	28.4	0.548	137	3.103
23	38	29.2	0.568	142	3.158
24	37	30.0	0.588	147	3.208
25	36	30.8	0.608	152	3.253
26	35	31.6	0.628	157	3.293



27	34	32.4	0.646	161.5	3.309
28	33	33.3	0.664	166	3.323
29	32	34.1	0.682	170.5	3.334
30	31	35.0	0.7	175	3.343
31	30	35.8	0.718	179.5	3.350
32	29	36.7	0.734	183.5	3.337
33	29	37.6	0.734	183.5	3.184
34	28	38.5	0.749	187.25	3.165
35	27	39.4	0.765	191.25	3.155
36	27	40.2	0.765	191.25	3.016
37	26	41.1	0.78	195	3.001
38	25	42.0	0.796	199	2.992
39	25	43.0	0.796	199	2.868
40	24	43.9	0.81	202.5	2.847
41	24	44.8	0.81	202.5	2.732
42	23	45.7	0.824	206	2.715
43	23	46.6	0.824	206	2.609
44	22	47.5	0.838	209.5	2.595
45	22	48.5	0.838	209.5	2.496
46	21	49.4	0.852	213	2.484
47	21	50.3	0.852	213	2.393
48	21	51.3	0.852	213	2.306
49	20	52.2	0.866	216.5	2.298
50	20	53.1	0.866	216.5	2.217
51	19	54.1	0.876	219	2.191
52	19	55.0	0.876	219	2.116
53	19	56.0	0.876	219	2.045
54	18	56.9	0.885	221.25	2.018
55	18	57.9	0.885	221.25	1.953
56	18	58.8	0.885	221.25	1.890
57	18	59.8	0.885	221.25	1.830
58	17	60.7	0.895	223.75	1.814
59	17	61.7	0.895	223.75	1.758
60	17	62.6	0.895	223.75	1.705
61	16	63.6	0.905	226.25	1.691
62	16	64.6	0.905	226.25	1.641
63	16	65.5	0.905	226.25	1.593
64	16	66.5	0.905	226.25	1.547
65	15	67.4	0.915	228.75	1.537

66	15	68.4	0.915	228.75	1.494
67	15	69.4	0.915	228.75	1.452
68	15	70.3	0.915	228.75	1.413
69	15	71.3	0.915	228.75	1.375
70	14	72.3	0.922	230.5	1.359
71	14	73.2	0.922	230.5	1.323
72	14	74.2	0.922	230.5	1.289
73	14	75.2	0.922	230.5	1.256
74	14	76.2	0.922	230.5	1.224
75	13	77.1	0.93	232.5	1.214
76	13	78.1	0.93	232.5	1.184
77	13	79.1	0.93	232.5	1.155
78	13	80.0	0.93	232.5	1.127
79	13	81.0	0.93	232.5	1.100
80	13	82.0	0.93	232.5	1.074
81	13	83.0	0.93	232.5	1.049
82	12	84.0	0.937	234.25	1.040
83	12	84.9	0.937	234.25	1.016
84	12	85.9	0.937	234.25	0.993
85	12	86.9	0.937	234.25	0.971
86	12	87.9	0.937	234.25	0.950
87	12	88.8	0.937	234.25	0.929
88	12	89.8	0.937	234.25	0.909
89	11	90.8	0.945	236.25	0.904
90	11	91.8	0.945	236.25	0.885
91	11	92.8	0.945	236.25	0.867
92	11	93.7	0.945	236.25	0.849
93	11	94.7	0.945	236.25	0.831
94	11	95.7	0.945	236.25	0.814
95	11	96.7	0.945	236.25	0.798
96	11	97.7	0.945	236.25	0.782
97	11	98.7	0.945	236.25	0.766
98	10	99.6	0.952	238	0.762
99	10	100.6	0.952	238	0.747
100	10	101.6	0.952	238	0.733