

## **COMPLIANCE WITH RADIOFREQUENCY RADIATION GUIDELINES**

The instant application for WHTS(FM), Coopersville, MI has been evaluated for human exposure to non-ionizing radiofrequency radiation at the transmitter site. The site will house multiple transmitters. The potential for human exposure to non-ionizing radiofrequency radiation at the proposed transmitter site has been evaluated with regards to §1.1307(b)(3) concerning the five percent (5%) contribution rule for multiple transmitter sites.

The WHTS(FM) facility will operate on 105.3 MHz with a maximum effective radiated power (ERP) of 19.0 kW circular polarization. The facility will operate with a five element Dielectric DCR-C5 SS05ER antenna mounted 228.1 meters above ground level (AGL). EPA Type 9 elements were assumed as defined by FM Model Version 2.10 Beta issued March 22, 1995.

This site has been evaluated for compliance with the FCC guidelines concerning human exposure to radiofrequency radiation. The standards employed are detailed in OET Bulletin No. 65 (Edition 97-01).

A computer software package was used to determine the individual contribution of the station. FM radiofrequency radiation levels were predicted using both the array pattern, the calculations of which are based on the number of bays in the antenna and wavelength spacing between the bays, and the element pattern. The element pattern is determined by using measured element data prepared by the EPA and published in "An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM and TV Services," by Paul C. Gailey and Richard Tell - April 1985, U.S. Environmental Protection Agency, Las Vegas, NV. The programs use formulas that were originally published in OET Bulletin No. 65.

The result of the evaluations for the station is shown in both graphical and tabular forms at the end of this report. The tabulation lists the portion of the tabular output for the station showing the region of maximum radiofrequency radiation. The locations of maximum predicted power density have been highlighted using ***bold italic*** type. The FM graphical display has been scaled to show the best definition of the data curve.

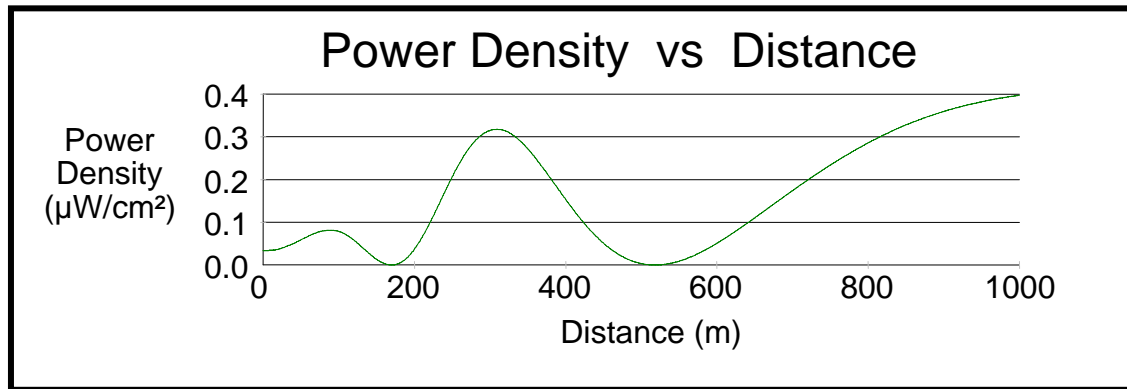
To evaluate the total exposure to non-ionizing radio-frequency radiation with regards to the five percent contribution exclusion rule, it is necessary to express the individual contribution as a decimal fraction of the maximum permissible limit. If the resulting contribution is less than or equal to 0.05 (5.0%), the exposure is concluded to be within the guidelines of OET Bulletin No. 65 (Edition 97-01) and §1.1307(b)(3). The maximum predicted exposure of 0.39753  $\mu\text{W}/\text{cm}^2$  will occur at 1000 meters from the base of the tower. This level represents 0.20% of the 200  $\mu\text{W}/\text{cm}^2$  limit for the more restrictive uncontrolled environment where members of the general public may be exposed to radiofrequency radiation. Protection of the more restrictive uncontrolled limit implies protection of the controlled limit.

Since the maximum contribution of 0.20% for uncontrolled environments is less than the 5.0% as set for by §1.1307(b)(3), the proposed facility is in compliance with FCC guidelines. §1.1307(b)(3) states that facilities contributing less than five percent of the exposure limit at locations with multiple transmitters are categorically excluded from responsibility for taking any corrective action in the areas where its contribution is less than five percent. Since this instant application meets the five percent exclusion test at all ground level areas, the impact of the proposed facility may be considered independently from other facilities operating at or nearby this site. It is believed the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b)(3).

In addition to the protection afforded by the proposed antenna height above ground, the facility is properly marked with signs, and entry to the facility is restricted by means of fencing with locked doors and/or gates. Any other means that may be required to protect employees and the general public will be employed.

In the event work is required in proximity to the antenna(s) such that the person or persons working in the area will be potentially exposed to fields in excess of the current guidelines, an agreement signed by all broadcast parties at the site will be in effect for the offending transmitter(s) to reduce power, or cease operation during the critical period.

**PLOT OF TOTAL POWER DENSITY**  
**WHTS(FM) – Coopersville, MI**  
**Using a 5-Bay EPA Type 9 Antenna Mounted 228.1 meters AGL**



Distance (meters) = 1000  
Horizontal ERP (W) = 20000  
Antenna Height (m) = 228.1  
Number of Elements = 5  
Y-axis (Linear) = -1

Vertical ERP (W) = 20000  
Antenna EPA Type = 9  
Element Spacing = .5  
X-axis Setup = -1, 1000

X(m)	Y(μW/cm²)	X(m)	Y(μW/cm²)	X(m)	Y(μW/cm²)	X(m)	Y(μW/cm²)	X(m)	Y(μW/cm²)	X(m)	Y(μW/cm²)
0	3.3599E-02	45	5.4735E-02	90	8.1554E-02	867	.33967	912	.36565	957	.38479
1	.03364	46	5.5649E-02	91	8.1464E-02	868	.34033	913	.36614	958	.38514
2	3.3701E-02	47	.05656	92	8.1324E-02	869	.34098	914	.36664	959	.38550
3	3.3771E-02	48	5.7468E-02	93	8.1135E-02	870	.34163	915	.36713	960	.38584
4	3.3853E-02	49	5.8372E-02	94	8.0894E-02	871	.34228	916	.36761	961	.38619
5	3.3948E-02	50	5.9271E-02	95	8.0604E-02	872	.34292	917	.36810	962	.38653
6	3.4055E-02	51	6.0163E-02	96	8.0262E-02	873	.34356	918	.36858	963	.38687
7	3.4174E-02	52	6.1048E-02	97	7.9870E-02	874	.34419	919	.36905	964	.38721
8	3.4305E-02	53	6.1925E-02	98	7.9427E-02	875	.34482	920	.36953	965	.38754
9	3.4449E-02	54	.06279	99	7.8934E-02	876	.34545	921	.37000	966	.38788
10	3.4604E-02	55	6.3649E-02	100	7.8390E-02	877	.34608	922	.37046	967	.38821
11	.03477	56	6.4494E-02			878	.34670	923	.37092	968	.38853
12	3.4950E-02	57	6.5327E-02		***	879	.34731	924	.37138	969	.38885
13	.03514	58	.06614		Complete	880	.34793	925	.37184	970	.38917
14	.03534	59	6.6950E-02		Tabulation	881	.34854	926	.37229	971	.38949
15	3.5556E-02	60	6.7738E-02		Will be supplied	882	.34914	927	.37274	972	.38981
16	3.5781E-02	61	6.8551E-02		Upon request	883	.34974	928	.37319	973	.39012
17	3.6017E-02	62	6.9404E-02		***	884	.35034	929	.37364	974	.39043
18	3.6264E-02	63	.07023			885	.35094	930	.37408	975	.39073
19	3.6521E-02	64	7.1047E-02	841	.32117	886	.35153	931	.37451	976	.39104
20	3.6859E-02	65	7.1834E-02	842	.32195	887	.35211	932	.37495	977	.39134
21	.03745	66	7.2598E-02	843	.32272	888	.35270	933	.37538	978	.39164
22	3.8065E-02	67	7.3335E-02	844	.32349	889	.35328	934	.37581	979	.39193
23	3.8682E-02	68	7.4047E-02	845	.32424	890	.35385	935	.37623	980	.39222
24	3.9307E-02	69	7.4730E-02	846	.32498	891	.35443	936	.37665	981	.39251
25	3.9941E-02	70	7.5385E-02	847	.32572	892	.35500	937	.37707	982	.39280
26	4.0582E-02	71	.07600	848	.32645	893	.35556	938	.37748	983	.39309
27	4.1231E-02	72	7.6602E-02	849	.32718	894	.35612	939	.37790	984	.39337
28	.04188	73	7.7163E-02	850	.32791	895	.35668	940	.37831	985	.39365
29	4.2549E-02	74	7.7690E-02	851	.32863	896	.35724	941	.37871	986	.39392
30	4.3218E-02	75	7.8183E-02	852	.32935	897	.35779	942	.37911	987	.39420
31	4.3892E-02	76	7.8640E-02	853	.33007	898	.35834	943	.37951	988	.39447
32	4.4572E-02	77	7.9060E-02	854	.33078	899	.35888	944	.37991	989	.39474
33	4.5257E-02	78	.07944	855	.33148	900	.35942	945	.38030	990	.39501
34	4.5945E-02	79	7.9786E-02	856	.33219	901	.35996	946	.38069	991	.39527
35	.04663	80	8.0091E-02	857	.33289	902	.36050	947	.38108	992	.39553
36	4.7334E-02	81	8.0355E-02	858	.33358	903	.36103	948	.38147	993	.39579
37	4.8032E-02	82	8.0577E-02	859	.33427	904	.36155	949	.38185	994	.39604
38	4.8732E-02	83	8.0833E-02	860	.33496	905	.36208	950	.38223	995	.39630
39	4.9433E-02	84	8.1076E-02	861	.33565	906	.36260	951	.38260	996	.39655
40	5.0163E-02	85	8.1274E-02	862	.33633	907	.36311	952	.38297	997	.39680
41	5.1075E-02	86	8.1425E-02	863	.33700	908	.36363	953	.38334	998	.39704
42	5.1989E-02	87	8.1529E-02	864	.33767	909	.36414	954	.38371	999	.39729
43	5.2905E-02	88	8.1586E-02	865	.33834	910	.36464	955	.38407	1000	.39753
44	5.3820E-02	89	8.1594E-02	866	.33901	911	.36515	956	.38443		