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ENGINEERING EXHIBIT
APPLICATION FOR AUXILIARY ANTENNA CONSTRUCTION PERMIT
WYFF HEARST-ARGYLE TELEVISION, INC.
STATION WYFF, GREENVILLE, SOUTH CAROLINA

The instant Engineering Exhibit has been prepared on behalf of WYFF Hearst-Argyle Television, Inc. (hereafter, Hearst) and is in support of a construction permit application for an auxiliary antenna for digital television station WYFF, Greenville South Carolina. Specifically, Hearst seeks to obtain a construction permit and then a license for an antenna that was used for Station WYFF pursuant to a STA in File #BDSTA-20080815ABH during the transition from analog Channel 4 to digital Channel 36. The antenna is side-mounted on the same tower as is specified for the Channel 36 main antenna operation for which a license application is pending in File # BLCDT-20090901ACV.. The proposed effective radiated power for the auxiliary antenna is 1000 kW and the antenna radiation center height above average terrain is 522 meters.

The antenna to be employed is a Dielectric, model TFU-24JSC-R 04. The antenna is non-directional and has a power gain of 22.0 at the proposed 1° electrical beam tilt angle. Figure 1 is the vertical plane relative field radiation pattern for the antenna and Figure 2 is the tabulation of relative field data for the pattern of Figure 1.

The proposed auxiliary antenna is mounted with the radiation center 180 meters above ground level; 1121 meters above mean sea level. No change in the overall structure height results. The ASRN for the structure is 1052729. The NAD '27 site geographic coordinates are: 35° 06' 43" N. Lat.; 82° 36' 24" W. Long. Other details concerning the proposed operation are furnished in the Tech Box responses on FCC Form 301

The WYFF main antenna ERP is 1000 kW, and the height above average terrain, is 596 meters. It is clear that the coverage for the auxiliary antenna will not extend beyond the coverage for the main antenna in any direction, and that no interference analysis is required.

Environmental impact considerations for the proposed auxiliary antenna operation have been taken into account. Since the proposed site is already employed for broadcasting purposes, only the aspect relating to human exposure to radiofrequency radiation (rfr) from among the list of environmentally sensitive concerns of Section 1.1307 of the Rules is germane. Consideration of exposure to the public (uncontrolled locations) and exposure to workers (controlled locations) are addressed herein.

In order to determine if compliance with the maximum permitted exposure (MPE) to the public would be achieved, a test calculation of prospective power density, using OET Bulletin 65, Edition 97-01 procedures, has been made. Conservative assumptions that are designed to yield excessive safety margins have been employed. The test calculation was from the bottom of the proposed antenna to a point located two meters above ground level at the tower base. Thus, all the energy was assumed to be radiating from the bottom of the antenna. The two meter above ground level target represents the approximate height of a standing person's head. The location at the tower base is the shortest possible distance to the tower that a person could be located.

From the vertical plane pattern of Figure 1, and the tabulation of Figure 2, it is seen that the relative field throughout the depression angle range from 5.3° to 90° below the horizontal plane does not exceed 0.135. A ray from the bottom of the antenna would impinge on a target located 2 meters above ground level at a horizontal distance of 1843 meters from the tower, based on an assumption of flat earth.

Using the relative field value of 0.135 to determine the radiation to the target, together with a recommended ground reflection coefficient of 1.6, yields a power density level of 0.000021 mW/ cm^2. The MPE at Channel 36 is 0.4 mW/cm^2, so the maximum expected power density exposure level anywhere within a radius of 1843 meters is only 0.005 % of the MPE.

At a distance of 1843 meters and beyond, with an assumption of maximum radiation of 1000 kW, the power density level will not exceed 0.010 mW/cm^2, or 2.5 % of the MPE. The 2.5 % level is well below the 5 % of the MPE level that triggers the need for cooperative involvement in ameliorating excessive levels of radiation at uncontrolled locations when there are other contributors. The proposed STA operation will not cause excessive rfr exposure to persons at uncontrolled locations.

As to worker exposure concerns, the tower that will support the antenna is fenced and access within the fenced area is available only to authorized personnel. Radiation hazard warning signs are posted on the fence. Persons whose activities require climbing of the tower are instructed in rfr overexposure avoidance procedures which must be followed. These procedures include termination of excitation to an otherwise energized antenna when the work activity is in the proximity of the antenna, or the reduction of power into the antenna to an extent sufficient to assure exposure that is less than the MPE at the assigned work position. Thus the fenced area where the tower is located is a controlled location for rfr exposure consideration purposes.

The foregoing demonstrates that the proposed STA operation will comply with FCC criteria for the avoidance of excessive rfr exposure at uncontrolled and controlled locations according to the adopted standard. An environmental assessment is not required for the proposed operation.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 8, 2009.

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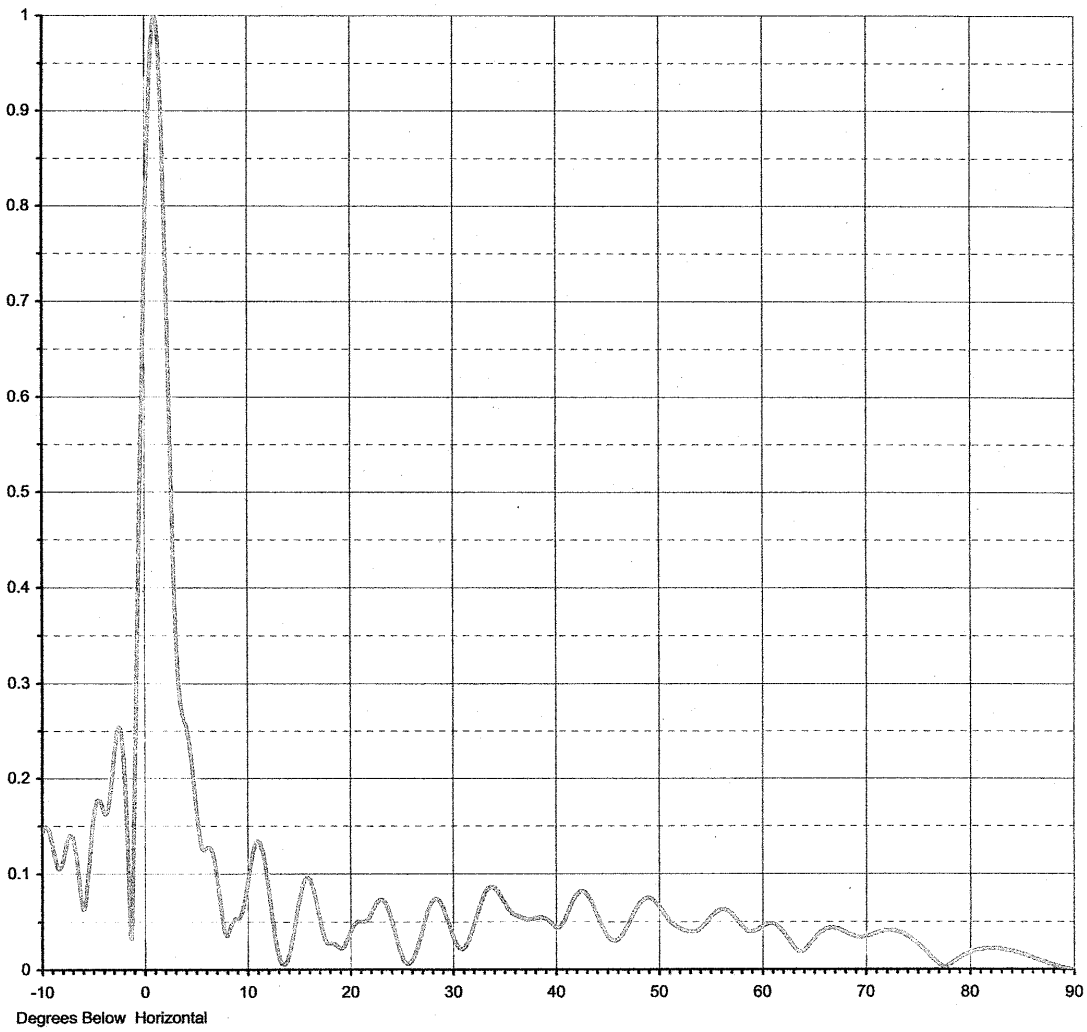
Dielectric

FIGURE 1

Proposal Number	**C-01945**		
Date	**17-Sep-07**		
Call Letters	**WYFF-DT**	Channel	**36**
Location	**Greenville, SC**		
Customer			
Antenna Type	**TFU-24JSC-R O4**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**22.00 (13.42 dB)**	Beam Tilt	**1.00 deg**
RMS Gain at Horizontal	**11.90 (10.76 dB)**	Frequency	**605.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**24Z220100-90**



Dielectric

FIGURE 2

Proposal Number	**C-01945**
Date	**17-Sep-07**
Call Letters	**WYFF-DT** Channel **36**
Location	**Greenville, SC**
Customer	
Antenna Type	**TFU-24JSC-R O4**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-O4**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.889	90	1.000	135	0.889	180	1.000	225	0.889	270	1.000	315	0.889
1	1.000	46	0.889	91	1.000	136	0.889	181	1.000	226	0.889	271	1.000	316	0.889
2	0.999	47	0.889	92	0.999	137	0.889	182	0.999	227	0.889	272	0.999	317	0.889
3	0.998	48	0.889	93	0.998	138	0.889	183	0.998	228	0.889	273	0.998	318	0.889
4	0.997	49	0.890	94	0.997	139	0.890	184	0.997	229	0.890	274	0.997	319	0.890
5	0.995	50	0.891	95	0.995	140	0.891	185	0.995	230	0.891	275	0.995	320	0.891
6	0.993	51	0.892	96	0.993	141	0.892	186	0.993	231	0.892	276	0.993	321	0.892
7	0.991	52	0.893	97	0.991	142	0.893	187	0.991	232	0.893	277	0.991	322	0.893
8	0.989	53	0.894	98	0.989	143	0.894	188	0.989	233	0.894	278	0.989	323	0.894
9	0.986	54	0.895	99	0.986	144	0.895	189	0.986	234	0.895	279	0.986	324	0.895
10	0.983	55	0.897	100	0.983	145	0.897	190	0.983	235	0.897	280	0.983	325	0.897
11	0.979	56	0.899	101	0.979	146	0.899	191	0.979	236	0.899	281	0.979	326	0.899
12	0.976	57	0.901	102	0.976	147	0.901	192	0.976	237	0.901	282	0.976	327	0.901
13	0.972	58	0.903	103	0.972	148	0.903	193	0.972	238	0.903	283	0.972	328	0.903
14	0.968	59	0.905	104	0.968	149	0.905	194	0.968	239	0.905	284	0.968	329	0.905
15	0.964	60	0.908	105	0.964	150	0.908	195	0.964	240	0.908	285	0.964	330	0.908
16	0.960	61	0.911	106	0.960	151	0.911	196	0.960	241	0.911	286	0.960	331	0.911
17	0.956	62	0.914	107	0.956	152	0.914	197	0.956	242	0.914	287	0.956	332	0.914
18	0.951	63	0.917	108	0.951	153	0.917	198	0.951	243	0.917	288	0.951	333	0.917
19	0.947	64	0.920	109	0.947	154	0.920	199	0.947	244	0.920	289	0.947	334	0.920
20	0.943	65	0.924	110	0.943	155	0.924	200	0.943	245	0.924	290	0.943	335	0.924
21	0.939	66	0.927	111	0.939	156	0.927	201	0.939	246	0.927	291	0.939	336	0.927
22	0.935	67	0.931	112	0.935	157	0.931	202	0.935	247	0.931	292	0.935	337	0.931
23	0.931	68	0.935	113	0.931	158	0.935	203	0.931	248	0.935	293	0.931	338	0.935
24	0.927	69	0.939	114	0.927	159	0.939	204	0.927	249	0.939	294	0.927	339	0.939
25	0.924	70	0.943	115	0.924	160	0.943	205	0.924	250	0.943	295	0.924	340	0.943
26	0.920	71	0.947	116	0.920	161	0.947	206	0.920	251	0.947	296	0.920	341	0.947
27	0.917	72	0.951	117	0.917	162	0.951	207	0.917	252	0.951	297	0.917	342	0.951
28	0.914	73	0.956	118	0.914	163	0.956	208	0.914	253	0.956	298	0.914	343	0.956
29	0.911	74	0.960	119	0.911	164	0.960	209	0.911	254	0.960	299	0.911	344	0.960
30	0.908	75	0.964	120	0.908	165	0.964	210	0.908	255	0.964	300	0.908	345	0.964
31	0.905	76	0.968	121	0.905	166	0.968	211	0.905	256	0.968	301	0.905	346	0.968
32	0.903	77	0.972	122	0.903	167	0.972	212	0.903	257	0.972	302	0.903	347	0.972
33	0.901	78	0.976	123	0.901	168	0.976	213	0.901	258	0.976	303	0.901	348	0.976
34	0.899	79	0.979	124	0.899	169	0.979	214	0.899	259	0.979	304	0.899	349	0.979
35	0.897	80	0.983	125	0.897	170	0.983	215	0.897	260	0.983	305	0.897	350	0.983
36	0.895	81	0.986	126	0.895	171	0.986	216	0.895	261	0.986	306	0.895	351	0.986
37	0.894	82	0.989	127	0.894	172	0.989	217	0.894	262	0.989	307	0.894	352	0.989
38	0.893	83	0.991	128	0.893	173	0.991	218	0.893	263	0.991	308	0.893	353	0.991
39	0.892	84	0.993	129	0.892	174	0.993	219	0.892	264	0.993	309	0.892	354	0.993
40	0.891	85	0.995	130	0.891	175	0.995	220	0.891	265	0.995	310	0.891	355	0.995
41	0.890	86	0.997	131	0.890	176	0.997	221	0.890	266	0.997	311	0.890	356	0.997
42	0.889	87	0.998	132	0.889	177	0.998	222	0.889	267	0.998	312	0.889	357	0.998
43	0.889	88	0.999	133	0.889	178	0.999	223	0.889	268	0.999	313	0.889	358	0.999
44	0.889	89	1.000	134	0.889	179	1.000	224	0.889	269	1.000	314	0.889	359	1.000