



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN APPLICATION FOR
POST REPACK CONSTRUCTION PERMIT
WZTV - NASHVILLE, TENNESSEE
DTV - CH. 20 - 1000 kW - 411 m HAAT**

Prepared for: WZTV LICENSEE, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

GENERAL

This office has been authorized by WZTV LICENSEE, LLC, licensee of WZTV channel 15, facility ID number 418, licensed to Nashville, Tennessee, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for construction permit, in accordance with the Incentive Auction Closing and Channel Reassignment Public Notice, DA 17-314, and the technical information provided in the confidential reassignment letter from the FCC announcing the substitution for DTV channel 15 with new DTV channel 20 to be used by WZTV for its post-reassignment broadcasting.

DIRECTIONAL ANTENNA

The applicant proposes to install a new Dielectric TFU-18DSC/VP-R P230 elliptically polarized directional transmitting antenna with its center of radiation located at a height above ground of 350 meters, and a height above average terrain of 411 meters. The antenna manufacturer's directional horizontal plane azimuth radiation pattern for the horizontally polarized component is shown and tabulated in exhibit 2. The manufacturer's horizontal plane azimuth pattern for the vertically polarized component is shown and tabulated in exhibit 3. The manufacturer's vertical plane elevation radiation pattern, illustrating the antenna's radiation characteristics above and below the horizontal plane is shown and tabulated in Exhibit 4.

PREDICTED COVERAGE CONTOURS

The predicted coverage contours were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 1 shows the predicted Noise Limited (39.36 dBu) contour, and the principal community (48 dBu) contour. The 48 dBu contour completely encompasses the principal community of license, Nashville, Tennessee.

ALLOCATION CONSIDERATIONS

Post-Transition DTV Considerations

A study was performed, using the FCC's software, tv_study, v. 2.2.2, to determine if the instant application for construction permit is predicted to cause new prohibited interference to post reassignment DTV stations, construction permits, DTV allotments or Class A DTV stations. The study results, shown in Appendix B, indicate that the instant application for construction permit is predicted to cause no new interference exceeding 0.5% to the populations served by any post reassignment DTV station, construction permit, allotment or Class A DTV stations. The study also shows that WZTV's proposed service area is within the baseline plus 1%. (See Appendix B)

International DTV Considerations

The WZTV site is located beyond the coordination distances from the nearest points on both the US-Canadian border and US/Mexican border.

BLANKETING AND INTERMODULATION INTERFERENCE

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 km of the proposed WZTV site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

RADIO FREQUENCY IMPACT

The FCC's guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or "controlled" situations, and for "uncontrolled" environments that apply in all other cases that might affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated transmitting facilities, operations or devices comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. OET Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The Maximum Permitted Exposure (MPE) level for broadcast facilities that operate on a frequency between 30 MHz and 300 MHz is 200 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) for an "uncontrolled" environment, and is 1000 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) for a "controlled" environment. The MPE level for broadcast facilities that operate on a frequency between 300 MHz and 1500 MHz, primarily UHF TV stations, is determined for an "uncontrolled" environment by dividing the operating frequency in MHz by 1.5, and is similarly determined for a "controlled" environment by dividing the operating

STATEMENT OF JOHN E. HIDLE, P.E.
WZTV - Nashville, Tennessee
PAGE 5

frequency in MHZ by 0.3.

The predicted emissions of WZTV must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WZTV, which will operate on television Channel 20 (506-512 MHZ), the MPE is 339.33 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) in an "uncontrolled" environment and 1,696.7 $\mu\text{W}/\text{cm}^2$ in a "controlled" environment. The proposed WZTV facility will operate with a maximum ERP of 1000 kW from an elliptically polarized directional transmitting antenna with a centerline height of 350 meters above ground level (AGL). Considering a conservative predicted vertical plane relative field factor of 0.300 the WZTV facility is predicted to produce a power density at two meters above ground level of 31.036 $\mu\text{W}/\text{cm}^2$, which is 9.146% of the FCC guideline value for an "uncontrolled" environment, and 1.829% of the FCC's guideline value for "controlled" environments. There are two other full-power DTV facilities, one LPTV DTV facility, four full-power FM stations, one LPFM station and three FM auxiliary facilities that are located at the WZTV site. The total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations located within the relevant proximity, is 67.76% of the limit applicable to "uncontrolled" environments, and 13.552% of the limit for "controlled" environments. (See Appendix A)

OCCUPATIONAL SAFETY

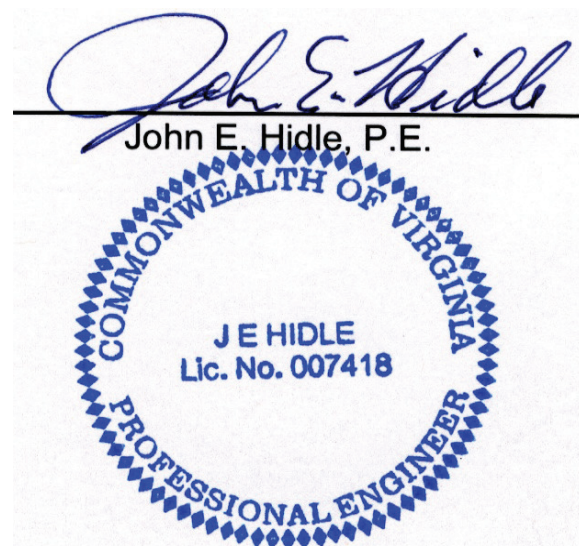
The licensee of WZTV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WZTV antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

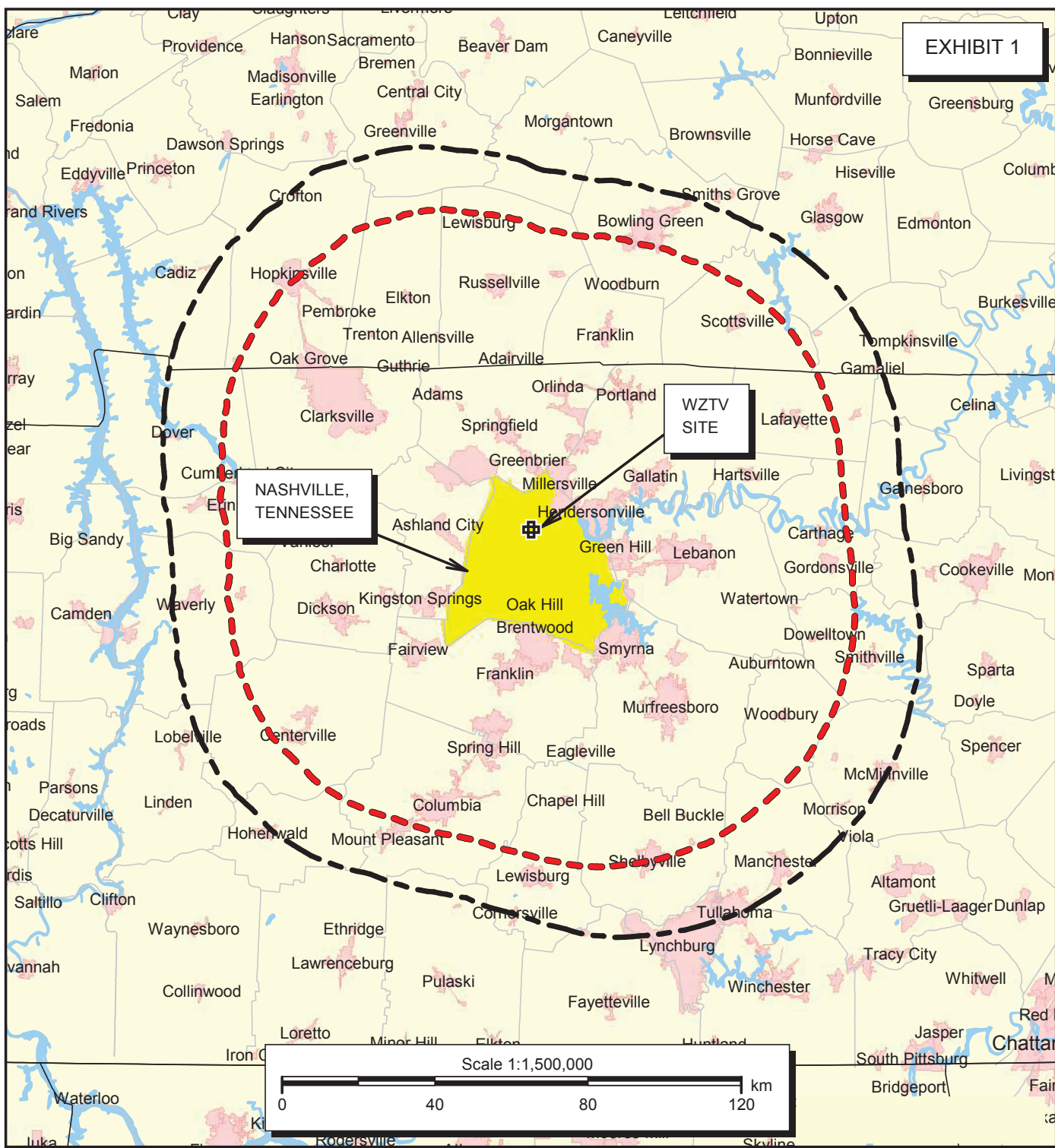
STATEMENT OF JOHN E. HIDLE, P.E.
WZTV - Nashville, Tennessee
PAGE 6

SUMMARY

It is submitted that the instant application for construction permit to change WZTV from channel 15 to channel 20, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: June 22, 2017





PREDICTED COVERAGE CONTOURS

WZTV - NASHVILLE, TENNESSEE
DTV Channel 20 - 1000 kW ERP - 411 M HAAT
JUNE, 2017

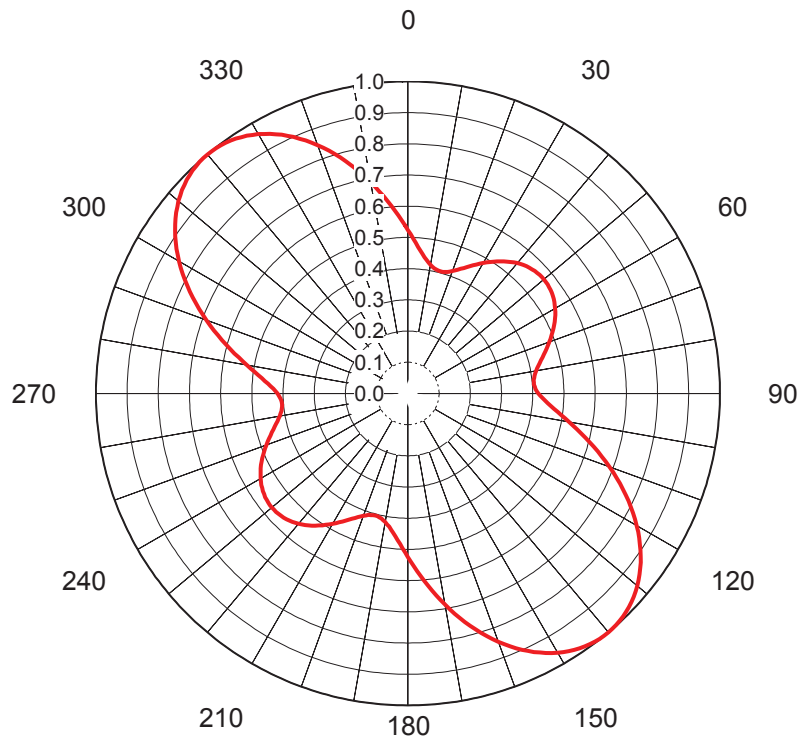


Predicted Noise Limited 39.36 dBu
F(50,90) Coverage Contour



Predicted Principal Community 48 dBu
F(50,90) Coverage Contour





AZIMUTH PATTERN Horizontal Polarization

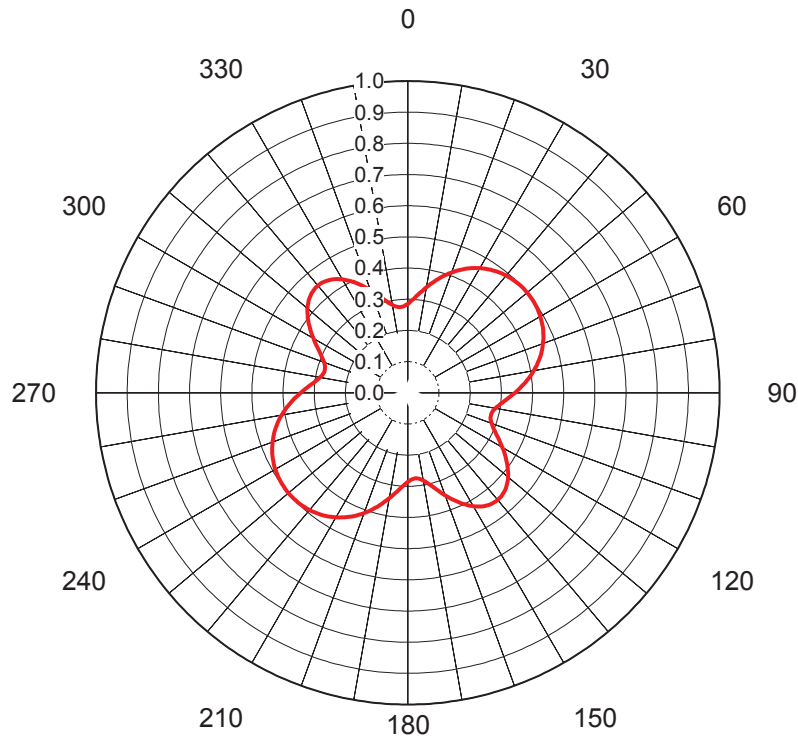
Proposal No. **C-70003**
 Date **14-Feb-17**
 Call Letters **WZTV 20**
 Frequency **509 MHz**
 Antenna Type **TFU-18DSC/VP-R P230**

Gain **2.29 (3.6dB)**
Calculated

Directional
 Drawing # **TFU-P230-20**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.524	36	0.523	72	0.468	108	0.654	144	0.993	180	0.524	216	0.523	252	0.468	288	0.654	324	0.993
1	0.510	37	0.529	73	0.461	109	0.671	145	0.989	181	0.510	217	0.529	253	0.461	289	0.671	325	0.989
2	0.496	38	0.535	74	0.453	110	0.688	146	0.985	182	0.496	218	0.535	254	0.453	290	0.688	326	0.985
3	0.483	39	0.540	75	0.447	111	0.705	147	0.980	183	0.483	219	0.540	255	0.447	291	0.705	327	0.980
4	0.471	40	0.545	76	0.440	112	0.722	148	0.974	184	0.471	220	0.545	256	0.440	292	0.722	328	0.974
5	0.460	41	0.549	77	0.434	113	0.738	149	0.967	185	0.460	221	0.549	257	0.434	293	0.738	329	0.967
6	0.449	42	0.554	78	0.428	114	0.755	150	0.960	186	0.449	222	0.554	258	0.428	294	0.755	330	0.960
7	0.440	43	0.557	79	0.422	115	0.771	151	0.951	187	0.440	223	0.557	259	0.422	295	0.771	331	0.951
8	0.431	44	0.560	80	0.417	116	0.787	152	0.942	188	0.431	224	0.560	260	0.417	296	0.787	332	0.942
9	0.425	45	0.563	81	0.413	117	0.802	153	0.932	189	0.425	225	0.563	261	0.413	297	0.802	333	0.932
10	0.418	46	0.565	82	0.410	118	0.818	154	0.922	190	0.418	226	0.565	262	0.410	298	0.818	334	0.922
11	0.414	47	0.567	83	0.408	119	0.833	155	0.911	191	0.414	227	0.567	263	0.408	299	0.833	335	0.911
12	0.409	48	0.568	84	0.405	120	0.847	156	0.900	192	0.409	228	0.568	264	0.405	300	0.847	336	0.900
13	0.407	49	0.569	85	0.405	121	0.861	157	0.887	193	0.407	229	0.569	265	0.405	301	0.861	337	0.887
14	0.405	50	0.569	86	0.405	122	0.874	158	0.874	194	0.405	230	0.569	266	0.405	302	0.874	338	0.874
15	0.405	51	0.569	87	0.407	123	0.887	159	0.861	195	0.405	231	0.569	267	0.407	303	0.887	339	0.861
16	0.405	52	0.568	88	0.409	124	0.900	160	0.847	196	0.405	232	0.568	268	0.409	304	0.900	340	0.847
17	0.408	53	0.567	89	0.414	125	0.911	161	0.833	197	0.408	233	0.567	269	0.414	305	0.911	341	0.833
18	0.410	54	0.565	90	0.418	126	0.922	162	0.818	198	0.410	234	0.565	270	0.418	306	0.922	342	0.818
19	0.413	55	0.563	91	0.425	127	0.932	163	0.802	199	0.413	235	0.563	271	0.425	307	0.932	343	0.802
20	0.417	56	0.560	92	0.431	128	0.942	164	0.787	200	0.417	236	0.560	272	0.431	308	0.942	344	0.787
21	0.422	57	0.557	93	0.440	129	0.951	165	0.771	201	0.422	237	0.557	273	0.440	309	0.951	345	0.771
22	0.428	58	0.554	94	0.449	130	0.960	166	0.755	202	0.428	238	0.554	274	0.449	310	0.960	346	0.755
23	0.434	59	0.549	95	0.460	131	0.967	167	0.738	203	0.434	239	0.549	275	0.460	311	0.967	347	0.738
24	0.440	60	0.545	96	0.471	132	0.974	168	0.722	204	0.440	240	0.545	276	0.471	312	0.974	348	0.722
25	0.447	61	0.540	97	0.483	133	0.980	169	0.705	205	0.447	241	0.540	277	0.483	313	0.980	349	0.705
26	0.453	62	0.535	98	0.496	134	0.985	170	0.688	206	0.453	242	0.535	278	0.496	314	0.985	350	0.688
27	0.461	63	0.529	99	0.510	135	0.989	171	0.671	207	0.461	243	0.529	279	0.510	315	0.989	351	0.671
28	0.468	64	0.523	100	0.524	136	0.993	172	0.654	208	0.468	244	0.523	280	0.524	316	0.993	352	0.654
29	0.475	65	0.517	101	0.539	137	0.996	173	0.637	209	0.475	245	0.517	281	0.539	317	0.996	353	0.637
30	0.483	66	0.511	102	0.554	138	0.998	174	0.620	210	0.483	246	0.511	282	0.554	318	0.998	354	0.620
31	0.490	67	0.504	103	0.570	139	0.999	175	0.603	211	0.490	247	0.504	283	0.570	319	0.999	355	0.603
32	0.497	68	0.497	104	0.586	140	1.000	176	0.586	212	0.497	248	0.497	284	0.586	320	1.000	356	0.586
33	0.504	69	0.490	105	0.603	141	0.999	177	0.570	213	0.504	249	0.490	285	0.603	321	0.999	357	0.570
34	0.511	70	0.483	106	0.620	142	0.998	178	0.554	214	0.511	250	0.483	286	0.620	322	0.998	358	0.554
35	0.517	71	0.475	107	0.637	143	0.996	179	0.539	215	0.517	251	0.475	287	0.637	323	0.996	359	0.539

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.



AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70003**
 Date **14-Feb-17**
 Call Letters **WZTV 20**
 Frequency **509 MHz**
 Antenna Type **TFU-18DSC/VP-R P230**

Gain **1.58 (1.97dB)**
Calculated

Directional
 Drawing # **TFU-P230-20-V**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.286	36	0.482	72	0.453	108	0.280	144	0.444	180	0.286	216	0.482	252	0.453	288	0.280
1	0.290	37	0.484	73	0.449	109	0.282	145	0.441	181	0.290	217	0.484	253	0.449	289	0.282
2	0.294	38	0.487	74	0.444	110	0.286	146	0.438	182	0.294	218	0.487	254	0.444	290	0.286
3	0.299	39	0.489	75	0.439	111	0.290	147	0.434	183	0.299	219	0.489	255	0.439	291	0.290
4	0.305	40	0.491	76	0.434	112	0.295	148	0.430	184	0.305	220	0.491	256	0.434	292	0.295
5	0.310	41	0.493	77	0.428	113	0.300	149	0.425	185	0.310	221	0.493	257	0.428	293	0.300
6	0.317	42	0.494	78	0.423	114	0.307	150	0.420	186	0.317	222	0.494	258	0.423	294	0.307
7	0.323	43	0.495	79	0.417	115	0.313	151	0.414	187	0.323	223	0.495	259	0.417	295	0.313
8	0.330	44	0.497	80	0.411	116	0.320	152	0.408	188	0.330	224	0.497	260	0.411	296	0.320
9	0.337	45	0.498	81	0.405	117	0.327	153	0.402	189	0.337	225	0.498	261	0.405	297	0.327
10	0.343	46	0.499	82	0.398	118	0.335	154	0.395	190	0.343	226	0.499	262	0.398	298	0.335
11	0.350	47	0.499	83	0.392	119	0.342	155	0.388	191	0.350	227	0.499	263	0.392	299	0.342
12	0.357	48	0.500	84	0.385	120	0.350	156	0.381	192	0.357	228	0.500	264	0.385	300	0.350
13	0.364	49	0.500	85	0.378	121	0.358	157	0.373	193	0.364	229	0.500	265	0.378	301	0.358
14	0.371	50	0.500	86	0.371	122	0.365	158	0.365	194	0.371	230	0.500	266	0.371	302	0.365
15	0.378	51	0.500	87	0.364	123	0.373	159	0.358	195	0.378	231	0.500	267	0.364	303	0.373
16	0.385	52	0.500	88	0.357	124	0.381	160	0.350	196	0.385	232	0.500	268	0.357	304	0.381
17	0.392	53	0.499	89	0.350	125	0.388	161	0.342	197	0.392	233	0.499	269	0.350	305	0.388
18	0.398	54	0.499	90	0.343	126	0.395	162	0.335	198	0.398	234	0.499	270	0.343	306	0.395
19	0.405	55	0.498	91	0.337	127	0.402	163	0.327	199	0.405	235	0.498	271	0.337	307	0.402
20	0.411	56	0.497	92	0.330	128	0.408	164	0.320	200	0.411	236	0.497	272	0.330	308	0.408
21	0.417	57	0.495	93	0.323	129	0.414	165	0.313	201	0.417	237	0.495	273	0.323	309	0.414
22	0.423	58	0.494	94	0.317	130	0.420	166	0.307	202	0.423	238	0.494	274	0.317	310	0.420
23	0.428	59	0.493	95	0.310	131	0.425	167	0.300	203	0.428	239	0.493	275	0.310	311	0.425
24	0.434	60	0.491	96	0.305	132	0.430	168	0.295	204	0.434	240	0.491	276	0.305	312	0.430
25	0.439	61	0.489	97	0.299	133	0.434	169	0.290	205	0.439	241	0.489	277	0.299	313	0.434
26	0.444	62	0.487	98	0.294	134	0.438	170	0.286	206	0.444	242	0.487	278	0.294	314	0.438
27	0.449	63	0.484	99	0.290	135	0.441	171	0.282	207	0.449	243	0.484	279	0.290	315	0.441
28	0.453	64	0.482	100	0.286	136	0.444	172	0.280	208	0.453	244	0.482	280	0.286	316	0.444
29	0.457	65	0.479	101	0.282	137	0.446	173	0.277	209	0.457	245	0.479	281	0.282	317	0.446
30	0.462	66	0.476	102	0.279	138	0.448	174	0.276	210	0.462	246	0.476	282	0.279	318	0.448
31	0.465	67	0.473	103	0.278	139	0.448	175	0.276	211	0.465	247	0.473	283	0.278	319	0.448
32	0.469	68	0.469	104	0.276	140	0.449	176	0.276	212	0.469	248	0.469	284	0.276	320	0.449
33	0.473	69	0.465	105	0.276	141	0.448	177	0.278	213	0.473	249	0.465	285	0.276	321	0.448
34	0.476	70	0.462	106	0.276	142	0.448	178	0.279	214	0.476	250	0.462	286	0.276	322	0.448
35	0.479	71	0.457	107	0.277	143	0.446	179	0.282	215	0.479	251	0.457	287	0.277	323	0.446

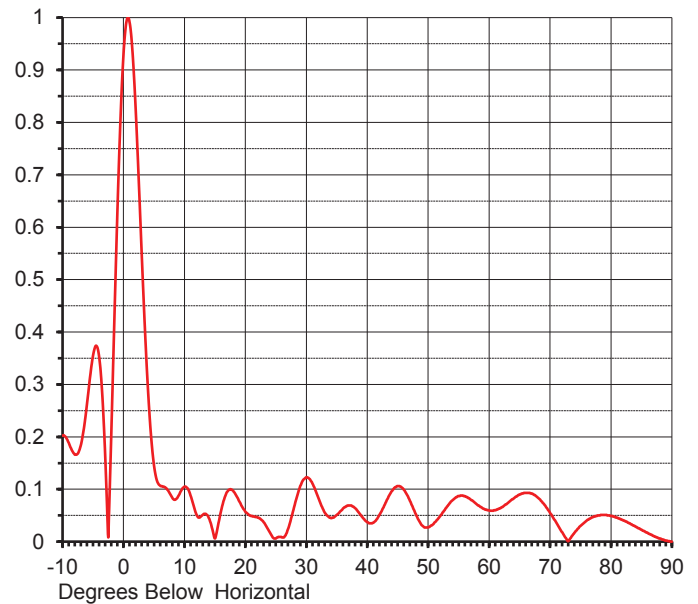
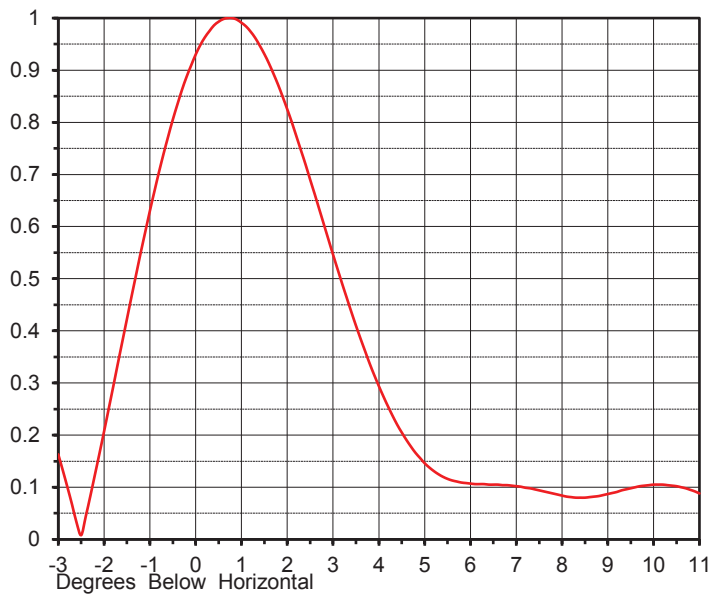
This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

ELEVATION PATTERN

Proposal No. **C-70003**
 Date **14-Feb-17**
 Call Letters **WZTV 20**
 Frequency **509 MHz**
 Antenna Type **TFU-18DSC/VP-R P230**

RMS Directivity at Main Lobe **15.00 (11.76 dB)**
 RMS Directivity at Horizontal **13.00 (11.14 dB)**
Calculated

Beam Tilt **0.75 deg**
 Drawing Number **18Q150075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.202	10.0	0.105	30.0	0.123	50.0	0.027	70.0	0.055
-9.0	0.189	11.0	0.088	31.0	0.111	51.0	0.036	71.0	0.037
-8.0	0.166	12.0	0.051	32.0	0.083	52.0	0.049	72.0	0.018
-7.0	0.184	13.0	0.051	33.0	0.056	53.0	0.065	73.0	0.001
-6.0	0.262	14.0	0.045	34.0	0.045	54.0	0.079	74.0	0.017
-5.0	0.355	15.0	0.006	35.0	0.051	55.0	0.087	75.0	0.030
-4.0	0.353	16.0	0.058	36.0	0.063	56.0	0.087	76.0	0.040
-3.0	0.163	17.0	0.095	37.0	0.069	57.0	0.080	77.0	0.047
-2.0	0.207	18.0	0.097	38.0	0.064	58.0	0.071	78.0	0.050
-1.0	0.630	19.0	0.077	39.0	0.050	59.0	0.063	79.0	0.051
0.0	0.930	20.0	0.057	40.0	0.037	60.0	0.060	80.0	0.049
1.0	0.991	21.0	0.049	41.0	0.036	61.0	0.060	81.0	0.046
2.0	0.825	22.0	0.046	42.0	0.051	62.0	0.065	82.0	0.041
3.0	0.546	23.0	0.037	43.0	0.074	63.0	0.073	83.0	0.035
4.0	0.294	24.0	0.018	44.0	0.096	64.0	0.082	84.0	0.029
5.0	0.146	25.0	0.006	45.0	0.106	65.0	0.090	85.0	0.023
6.0	0.107	26.0	0.008	46.0	0.099	66.0	0.093	86.0	0.017
7.0	0.102	27.0	0.024	47.0	0.078	67.0	0.092	87.0	0.011
8.0	0.084	28.0	0.066	48.0	0.052	68.0	0.084	88.0	0.006
9.0	0.087	29.0	0.106	49.0	0.031	69.0	0.072	89.0	0.002
								90.0	0.000

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

**SUMMARY OF RADIOFREQUENCY
RADIATION STUDY**
WZTV, Nashville, TN
Channel 20, 1000 kW, 411 m HAAT
June, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR**</u>	<u>WORST-CASE PREDICTED POWER DENSITY (μW/cm²)</u>	<u>FCC UNCONTROLLED LIMIT (μW/cm²)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WNAB*	DT	30	569	H	366	200.000	0.300	4.539	379.33	1.20%
WNAB*	DT	30	569	V	366	50.000	0.300	1.135	379.33	0.30%
WZTV*	DT	20	509	H	350	1000.000	0.300	24.829	339.33	7.32%
WZTV*	DT	20	509	V	350	250.000	0.300	6.207	339.33	1.83%
WUXP-TV	DT	21	515	H	352	1000.000	0.300	24.546	343.33	7.15%
WRTN-LD (CP)	DT	17	491	H	305	15.000	0.300	0.491	327.33	0.15%
W233BV	FM	223	92.5	H & V	283	0.140	1.000	0.118	200.00	0.06%
WCJK	FM	242	96.3	H & V	372	39.000	<note 1>	0.123	200.00	0.06%
WLVU	FM	246	97.1	H & V	168	9.000	<note 2>	0.240	200.00	0.12%
WSIX-FM (AUX)	FM	250	97.9	H & V	237	15.500	1.000	18.754	200.00	9.38%
WUBT	FM	266	101.1	H & V	237	1.900	1.000	2.299	200.00	1.15%
WNRQ (AUX)	FM	290	105.9	H & V	237	15.500	1.000	18.754	200.00	9.38%
WNFN	FM	294	106.7	H & V	233	2.950	1.000	3.694	200.00	1.85%
WRVW (AUX)	FM	298	107.5	H & V	237	46.000	1.000	55.658	200.00	27.83%

TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =

67.76%

* WNAB and WZTV are proposing elliptical polarization. The table above includes both the horizontal and vertical power levels for the proposed WNAB and WZTV operations.

** For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.

note 1: FM Model Antenna: EPA Type 3: ERI Rototiller Type, 8-bay, half-wave spaced antenna.

note 2: FM Model Antenna: EPA Type 1 (worst case analysis); 13-bay, 0.83-wave spaced antenna.



WZTV - NASHVILLE, TENNESSEE Longley-Rice Interference Analysis

tvstudy v2.2.2

Database: localhost, Study: WZTV_20_ASR_1MW_411H_B, Model: Longley-Rice

Start: 2017.05.23 12:34:55

Study created: 2017.05.23 12:34:48

Study build station data: LMS TV 2017-05-16 (10)

Proposal: WZTV D20 DT LIC NASHVILLE, TN
File number: WZTV_20_ASR_1MW_411H_B
Facility ID: 418
Station data: User record
Record ID: 438
Country: U.S.
Zone: II

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDT20111118COZ	171.2 km
WPSD-TV	D19	DT	BL	PADUCAH, KY	DTVBL51991	220.5
WABM	D20	DT	BL	BIRMINGHAM, AL	DTVBL16820	308.9
KTEJ	D20	DT	LIC	JONESBORO, AR	BL EDT20110818AAQ	359.4
WANN-CD	D20	DC	BL	ATLANTA, GA	DTVBL168812	352.8
WDNN-CD	D20	DC	BL	DALTON, GA	DTVBL49236	234.1
WAND	D20	DT	BL	DECATUR, IL	DTVBL70852	447.0
WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	196.1
WBII-CD	D20	DC	LIC	HOLLY SPRINGS, MS	BLDTA20090513AFM	267.5
WUNF-TV	D20	DD	BL	ASHEVILLE, NC	DTVBL69300	375.5
WLWT	D20	DT	BL	CINCINNATI, OH	DTVBL46979	375.5
WJKT	D21	DT	BL	JACKSON, TN	DTVBL68519	214.2
WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDT20060414AAU	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D20
Latitude: 36 15 49.80 N (NAD83)
Longitude: 86 47 38.90 W
Height AMSL: 593.0 m
HAAT: 411.0 m
Peak ERP: 1000 kW
Antenna: DIE-TFU-18DSC/VP-R P230 0.0 deg

39.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	275 kW	352.7 m	94.2 km
45.0	310	410.0	99.5
90.0	175	438.4	96.5

Appendix B - Interference Analysis
WZTV - Nashville, Tennessee
Channel 20 - 1000 kW - Page 2

135.0	960	430.9	112.5
180.0	275	439.3	100.6
225.0	310	442.1	102.0
270.0	175	387.9	93.4
315.0	960	370.0	106.7

Database HAAT does not agree with computed HAAT
 Database HAAT: 411 m Computed HAAT: 409 m

ERP exceeds maximum
 ERP: 1000 kW ERP maximum: 830 kW

Proposal service area is within baseline plus 1.0%
 Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 698.6 km

Distance to Mexican border: 1493.7 km

Conditions at FCC monitoring station: Powder Springs GA
 Bearing: 144.2 degrees Distance: 326.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 290.5 degrees Distance: 1662.7 km

No land mobile station failures found

Study cell size: 2.00 km
 Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
 Maximum new IX to LPTV: 2.00%

 Interference to BLCDT20111118COZ LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDT20111118COZ	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	171.2 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	171.2
	WZDX	D18	DT	BL	HUNTSVILLE, AL	DTVBL28119	0.2
	WIIQ	D19	DT	LIC	DEMOPOLIS, AL	BLEDT20090511AHE	291.9
	WIYC	D19	DT	BL	TROY, AL	DTVBL62207	302.5
	WGCL-TV	D19	DT	LIC	ATLANTA, GA	BLCDT20060113ACO	226.5
	WDKY-TV	D19	DT	BL	DANVILLE, KY	DTVBL64017	401.5
	WPSD-TV	D19	DT	BL	PADUCAH, KY	DTVBL51991	350.6
	WPDP-CD	D19	DC	BL	CLEVELAND, TN	DTVBL52078	179.5
	WABM	D20	DT	BL	BIRMINGHAM, AL	DTVBL16820	141.7
	WDNN-CD	D20	DC	BL	DALTON, GA	DTVBL49236	138.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
36360.2 1,569,885	34222.1 1,487,578	32492.1 1,426,845	32492.1 1,426,845	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL	24.2 349	20.1 322	
WZTV D20 DT LIC	24.2 349	20.1 322	
WZDX D18 DT BL	120.3 2,400	120.3 2,400	
WIIQ D19 DT LIC	604.9 20,807	340.3 7,355	

Appendix B - Interference Analysis
WZTV - Nashville, Tennessee
Channel 20 - 1000 kW - Page 3

WIYC D19 DT BL	8.0	389	0.0	0	0.0	0
WGCL-TV D19 DT LIC	988.1	41,500	759.9	29,225	759.9	29,225
WDKY-TV D19 DT BL	8.1	194	8.1	194	8.1	194
WPSD-TV D19 DT BL	100.8	2,921	88.6	2,695	88.6	2,695
WPDP-CD D19 DC BL	23.9	144	7.9	0	7.9	0
WABM D20 DT BL	228.7	9,568	48.2	3,032	48.2	3,032
WDNN-CD D20 DC BL	35.8	215	0.0	0	0.0	0

Interference to BLCDT20111118COZ LIC, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDT20111118COZ	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	171.2 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	171.2
	WZDX	D18	DT	BL	HUNTSVILLE, AL	DTVBL28119	0.2
	WIIQ	D19	DT	LIC	DEMOPOLIS, AL	BLCDT20090511AHE	291.9
	WIYC	D19	DT	BL	TROY, AL	DTVBL62207	302.5
	WGCL-TV	D19	DT	LIC	ATLANTA, GA	BLCDT20060113ACO	226.5
	WDKY-TV	D19	DT	BL	DANVILLE, KY	DTVBL64017	401.5
	WPSD-TV	D19	DT	BL	PADUCAH, KY	DTVBL51991	350.6
	WPDP-CD	D19	DC	BL	CLEVELAND, TN	DTVBL52078	179.5
	WABM	D20	DT	BL	BIRMINGHAM, AL	DTVBL16820	141.7
	WDNN-CD	D20	DC	BL	DALTON, GA	DTVBL49236	138.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
36360.2 1,569,885	34222.1 1,487,578	32492.1 1,426,845	32492.1 1,426,845	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL	24.2 349	20.1 322	
WZTV D20 DT LIC	24.2 349	20.1 322	
WZDX D18 DT BL	120.3 2,400	120.3 2,400	
WIIQ D19 DT LIC	604.9 20,807	340.3 7,355	
WIYC D19 DT BL	8.0 389	0.0 0	
WGCL-TV D19 DT LIC	988.1 41,500	759.9 29,225	
WDKY-TV D19 DT BL	8.1 194	8.1 194	
WPSD-TV D19 DT BL	100.8 2,921	88.6 2,695	
WPDP-CD D19 DC BL	23.9 144	7.9 0	
WABM D20 DT BL	228.7 9,568	48.2 3,032	
WDNN-CD D20 DC BL	35.8 215	0.0 0	

Interference to DTVBL51991 BL, scenario 1
Proposal causes no interference.

Interference to DTVBL16820 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WABM	D20	DT	BL	BIRMINGHAM, AL	DTVBL16820	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	308.9 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	308.9
	WIIQ	D19	DT	LIC	DEMOPOLIS, AL	BLCDT20090511AHE	159.6
	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDT20111118COZ	141.7
	WIYC	D19	DT	BL	TROY, AL	DTVBL62207	177.4
	WKRQ-TV	D20	DT	BL	MOBILE, AL	DTVBL73187	325.3
	WANN-CD	D20	DC	BL	ATLANTA, GA	DTVBL168812	231.1
	WDNN-CD	D20	DC	BL	DALTON, GA	DTVBL49236	215.4
	WBII-CD	D20	DC	LIC	HOLLY SPRINGS, MS	BLDTA20090513AFM	264.5
	WMPN-TV	D20	DT	LIC	JACKSON, MS	BLCDT20080807AAP	365.5
	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	0.0

Appendix B - Interference Analysis
WZTV - Nashville, Tennessee
Channel 20 - 1000 kW - Page 4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
29991.1 1,703,010	28954.5 1,677,980	28381.3 1,667,913	28385.3 1,668,253	-0.01 -0.02

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL	76.1 2,642	60.1 2,379	
WZTV D20 DT LIC	72.1 2,302		56.1 2,039
WIIQ D19 DT LIC	76.2 232	44.1 87	44.1 87
WHNT-TV D19 DT LIC	36.0 967	20.0 704	20.0 704
WKRG-TV D20 DT BL	292.9 1,667	232.8 1,116	232.8 1,116
WANN-CD D20 DC BL	31.9 376	31.9 376	31.9 376
WDNN-CD D20 DC BL	12.0 874	12.0 874	12.0 874
WMPN-TV D20 DT LIC	48.0 1,085	16.0 653	16.0 653
WTTO D21 DT BL	80.2 3,064	80.2 3,064	80.2 3,064

Interference to BLEDT20110818AAQ LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KTEJ	D20	DT	LIC	JONESBORO, AR	BLEDT20110818AAQ	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	359.4 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	359.4
	KLRA-CD	D20	DC	LIC	LITTLE ROCK, AR	BLANK0000004217	198.9
	KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDDT20110121ACA	332.4
	WBII-CD	D20	DC	LIC	HOLLY SPRINGS, MS	BLDTA20090513AFM	187.1
	WJKT	D21	DT	BL	JACKSON, TN	DTVBL68519	150.7

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26058.3 419,750	25862.1 417,368	25721.6 416,225	25721.6 416,225	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL	4.0 0	0.0 0	
WZTV D20 DT LIC	4.0 0		0.0 0
KLRA-CD D20 DC LIC	84.7 1,001	84.7 1,001	84.7 1,001
KNLJ D20 DT LIC	43.8 142	39.8 133	39.8 133
WBII-CD D20 DC LIC	16.0 9	8.0 0	8.0 0
WJKT D21 DT BL	4.0 0	0.0 0	0.0 0

Interference to DTVBL168812 BL, scenario 1
Proposal causes no interference.

Interference to DTVBL49236 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WDNN-CD	D20	DC	BL	DALTON, GA	DTVBL49236	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	234.1 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	234.1
	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDDT20111118COZ	138.4
	WGCL-TV	D19	DT	LIC	ATLANTA, GA	BLCDDT20060113ACO	120.3
	WPDP-CD	D19	DC	BL	CLEVELAND, TN	DTVBL52078	57.3
	WABM	D20	DT	BL	BIRMINGHAM, AL	DTVBL16820	215.4
	WANN-CD	D20	DC	BL	ATLANTA, GA	DTVBL168812	120.3
	WUNF-TV	D20	DD	BL	ASHEVILLE, NC	DTVBL69300	219.5
	WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	125.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
6802.7 642,636	5931.9 601,169	5840.5 598,604	5840.5 598,604	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL	15.9 360	11.9 358	
WZTV D20 DT LIC	19.9 475		11.9 358

Appendix B - Interference Analysis
WZTV - Nashville, Tennessee
Channel 20 - 1000 kW - Page 5

WABM D20 DT BL	31.8	928	31.8	928	31.8	928
WANN-CD D20 DC BL	47.7	1,279	43.7	1,277	39.7	1,162

Interference to DTVBL70852 BL, scenario 1
Proposal causes no interference.

Interference to BLDLTL20120328AJA LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	196.1 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	196.1
	WAND	D20	DT	BL	DECATUR, IL	DTVBL70852	256.8
	WLWT	D20	DT	BL	CINCINNATI, OH	DTVBL46979	270.2
	WRLW-CD	D21	DC	BL	SALEM, IN	DTVBL55315	123.6

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
6800.9 452,550	6800.9 452,550	6784.9 452,437	6784.9 452,437	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL 16.0	113	16.0 113	
WZTV D20 DT LIC 16.0	113		16.0 113

Interference to BLDTA20090513AFM LIC, scenario 1
Proposal causes no interference.

Interference to DTVBL69300 BL, scenario 1
Proposal causes no interference.

Interference to DTVBL69300 BL, scenario 2
Proposal causes no interference.

Interference to DTVBL46979 BL, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WLWT	D20	DT	BL	CINCINNATI, OH	DTVBL46979	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	375.5 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	375.5
	WIPB	D19	DT	BL	MUNCIE, IN	DTVBL3646	131.0
	WDKY-TV	D19	DT	BL	DANVILLE, KY	DTVBL64017	139.3
	WCLL-CD	D19	DC	LIC	COLUMBUS, OH	BLDTA20110616AAM	158.9
	WAND	D20	DT	BL	DECATUR, IL	DTVBL70852	380.8
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	270.2
	WFFT-TV	D20	DT	BL	FORT WAYNE, IN	DTVBL25040	227.9
	WTVS	D20	DT	BL	DETROIT, MI	DTVBL16817	386.4
	WOHZ-CD	D20	DC	BL	MANSFIELD, OH	DTVBL41892	244.0
	WVPB-TV	D20	DT	BL	HUNTINGTON, WV	DTVBL71657	212.8
	WFYI	D21	DT	LIC	INDIANAPOLIS, IN	BLEDT20100803ADB	167.8
	WRLW-CD	D21	DC	BL	SALEM, IN	DTVBL55315	147.6
	WKYT-TV	D21	DT	BL	LEXINGTON, KY	DTVBL24914	121.0
	WBNS-TV	D21	DT	LIC	COLUMBUS, OH	BLCDT20021025ABK	158.9

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
30280.4 3,319,685	29963.4 3,308,672	29063.7 3,280,198	29063.7 3,280,198	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL 15.8	2,323	0.0 0	
WZTV D20 DT LIC 15.8	2,323		0.0 0
WIPB D19 DT BL 27.9	147	0.0 0	0.0 0

Appendix B - Interference Analysis
WZTV - Nashville, Tennessee
Channel 20 - 1000 kW - Page 6

WDKY-TV D19 DT BL	213.1	7,725	3.9	337	3.9	337
WAND D20 DT BL	8.0	93	0.0	0	0.0	0
WFFT-TV D20 DT BL	295.7	14,169	259.8	13,929	259.8	13,929
WVPB-TV D20 DT BL	23.8	2,370	12.0	183	12.0	183
WKYT-TV D21 DT BL	520.6	12,925	311.4	5,537	311.4	5,537
WBNS-TV D21 DT LIC	67.5	860	67.5	860	67.5	860

Interference to DTVBL68519 BL, scenario 1
Proposal causes no interference.

Interference to BLCDT20060414AAU LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDT20060414AAU	
Undesireds:	WZTV	D20	DT	BL	NASHVILLE, TN	DTVBL418	0.0 km
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	0.0
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	196.1
	WTTT	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	308.9
	WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	357.2
	WRLW-CD	D21	DC	BL	SALEM, IN	DTVBL55315	267.0
	WKYT-TV	D21	DT	BL	LEXINGTON, KY	DTVBL24914	289.5
	WJKT	D21	DT	BL	JACKSON, TN	DTVBL68519	214.2
	WTVW	D22	DT	BL	EVANSVILLE, IN	DTVBL3661	202.0
	WCTE	D22	DT	LIC	COOKEVILLE, TN	BLEDT20110413ACS	130.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
33232.6 2,316,872	32320.9 2,305,293	31040.7 2,267,051	31048.7 2,267,175	-0.03 -0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WZTV D20 DT BL	8.0 124	8.0 124	
WZTV D20 DT LIC	0.0 0		0.0 0
WTTT D21 DT BL	153.5 3,952	80.9 1,324	80.9 1,324
WKYT-TV D21 DT BL	312.1 7,231	192.1 3,994	192.1 3,994
WJKT D21 DT BL	421.8 5,227	309.1 3,010	309.1 3,010
WCTE D22 DT LIC	601.6 28,574	501.5 24,192	501.5 24,192

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WZTV	D20	DT	LIC	NASHVILLE, TN	WZTV_20_ASR_1MW_411H_B	
Undesireds:	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDT20111118COZ	171.2 km
	WABM	D20	DT	BL	BIRMINGHAM, AL	DTVBL16820	308.9
	KTEJ	D20	DT	LIC	JONESBORO, AR	BLEDT20110818AAQ	359.4
	WANN-CD	D20	DC	BL	ATLANTA, GA	DTVBL168812	352.8
	WDNN-CD	D20	DC	BL	DALTON, GA	DTVBL49236	234.1
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	196.1
	WBII-CD	D20	DC	LIC	HOLLY SPRINGS, MS	BLDTA20090513AFM	267.5
	WUNF-TV	D20	DD	BL	ASHEVILLE, NC	DTVBL69300	375.5
	WLWT	D20	DT	BL	CINCINNATI, OH	DTVBL46979	375.5
	WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDT20060414AAU	0.0

Service area	Terrain-limited	IX-free	Percent IX
32187.5 2,288,093	31533.7 2,277,908	31449.2 2,277,222	0.27 0.03

Undesired	Total IX	Unique IX	Prcnt Unique IX
WHNT-TV D19 DT LIC	28.3 432	24.3 415	0.08 0.02
WABM D20 DT BL	12.1 59	8.1 42	0.03 0.00
KTEJ D20 DT LIC	12.1 27	12.1 27	0.04 0.00
WTSN-CD D20 DC LIC	36.1 185	36.1 185	0.11 0.01