

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
FCC FILE NO. BPCDT-19991029AEV
FACILITY ID 68547
STATION WWRS-TV
MAYVILLE, WISCONSIN
CH 43 300 KW 186 M

Technical Narrative

This Technical Exhibit supports an application for modification of the outstanding construction permit for WWRS-TV on DTV channel 43 at Mayville, Wisconsin, FCC File No. BPCDT-19991029AEV (Facility ID 68547). The purpose of the modification application is to reduce the WWRS-TV antenna height and increase the effective radiated power (ERP). The instant application is considered a minor change in facilities pursuant to Section 73.3572(a). Furthermore, as detailed below, the instant application is also acceptable for filing under the criteria set forth in the FCC TV/DTV freeze as there will be no increase in WWRS-TV's authorized DTV service area in any direction.¹

Current Authorization

Station WWRS-TV is presently authorized (BPCDT-19991029AEV) to operate DTV channel 43 with a nondirectional DTV antenna system maximum ERP of 250 kW and an antenna height above average terrain (HAAT) of 202 meters. The authorized transmitter site is located at N43°26'11", W88°31'34". The antenna structure registration number is 1219139.

Proposed Operation

Station WWRS-TV proposes to operate on DTV channel 43 from the authorized site location with a nondirectional DTV antenna system maximum ERP of 300 kW and an HAAT of 186 meters.

¹ See FCC Public Notice dated August 3, 2004 entitled "Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes" (DA 04-2446).

Response to Paragraph 10 - Antenna Data

Figure 1 provides the vertical plane radiation pattern for the proposed Andrew type ATW25HS3-HSO-43H, horizontally polarized, nondirectional antenna system.

Response to Paragraph 11 - Interference Protection

Figure 2 is the separation study for DTV channel 43 from the currently authorized WWRN-TV site. The study has been used to determine the assignments requiring interference studies using the procedures outlined in the FCC's OET-69 bulletin. An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin which demonstrates that the proposal complies with the interference protection provisions of Section 73.623(c)(2).² Interference calculations for the proposed WWRN-TV DTV operation are summarized below. It is noted that the summary only includes stations with which interference (masked or unmasked) is calculated.

Protected NTSC/DTV Station	FCC Service Population	Proposed Unique Interference Population*
WMT, NTSC Ch. 36 Milwaukee, WI Application	2,107,244	533 (0.03%)
CP	2,052,775	121 (0.01%)
License	1,879,595	3,425 (0.18%)
WPNE-DT, Green Bay, WI License	729,437	774 (0.11%)
KFXB-DT, DTV Ch. 43 Dubuque, IA Allotment	221,171	81 (0.04%)
CP	221,171	2,379 (1.08%)
WCPX-DT, DTV Ch. 43 Chicago, IL Allotment	8,099,000	11,668 (0.14%)
CP	8,099,000	7,690 (0.10%)
WZPX, NTSC Ch. 43 Battle Creek, MI License	1,871,276	66 (0.004%)
WMMF-DT, DTV Ch. 44 Fond du Lac, WI Allotment	2,423,979	1,530 (0.063%)

*Considers interference "masking" from other NTSC and DTV assignments.

² The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed.

As indicated, the proposal complies with the FCC's 2%/10% interference standard applicable to DTV.

Compliance with TV Freeze Order

Figure 3 is a map which depicts the location of the predicted 41 dBu, F(50,90) contours for the authorized and herein proposed WWRS-TV DTV channel 43 operations. As indicated, the proposed WWRS-TV 41 dBu is entirely within the authorized WWRS-TV 41 dBu contour. Therefore, it is believed that the instant application is acceptable for filing under the criteria set forth in the FCC TV/DTV freeze as there will be no increase in WWRS-TV's authorized DTV channel 43 service area in any direction.

Response to Paragraph 12 - City Coverage

Figure 3 also depicts the predicted 48 dBu, F(50,90) coverage contour for the herein proposed WWRS-TV channel 43 operation. As indicated Mayville is located within the 48 dBu contour. The Mayville city limits were derived from information contained in the 2000 U.S. Census for Wisconsin.

The distances to the predicted 41 dBu and 48 dBu, F(50,90) coverage contours were determined in accordance with the provisions of Section 73.625. The average elevations from 3.2 to 16.1 kilometers from the transmitter site, were obtained from the NGDC 30-second terrain database and were used for determining the distances to coverage contours.

Response to Paragraph 13 - Environmental Protection Act

The proposed facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 126 meters above ground level. The maximum DTV ERP is 300 kW (horizontal polarization). A "worst-case" vertical plane relative field value of 0.05 (for angles below 60 degrees downward) is assumed for the antenna's downward radiation (see Figure 1). The calculated power density at a point 2 meters above ground level is 0.0016 mW/cm². This is

0.81% of the FCC's recommended limit of 0.43 mW/cm² for channel 43 for an "uncontrolled" environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the new RF emission rules.

Access to the transmitting site is restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement is in effect with the other stations in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing RF protective clothing or scheduling work when the stations are at reduced power or shut down.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

W. Jeffrey Reynolds

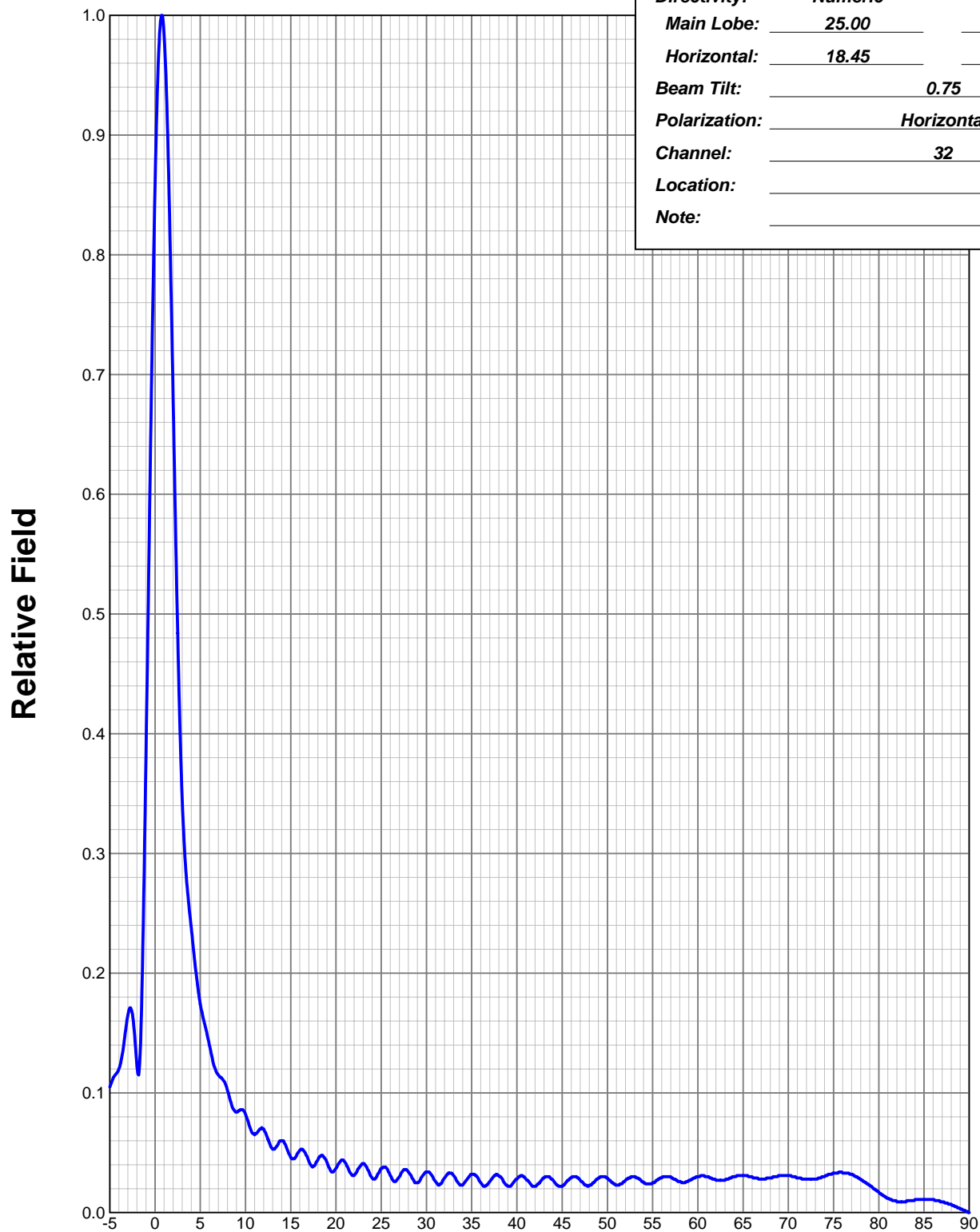
du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237-6019
(941) 329-6000
JEFF@DLR.COM

October 1, 2004



ANDREW® ELEVATION PATTERN

Type:	ATW25HS3H	
Directivity:	Numeric	dBd
Main Lobe:	25.00	13.98
Horizontal:	18.45	12.66
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	32	
Location:		
Note:		



ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A 60462

**ANDREW®****ELEVATION TABULATED DATA**Type: ATW25HS3HPolarization: Horizontal

<i>Angle</i>	<i>Field</i>	<i>dB</i>	<i>Angle</i>	<i>Field</i>	<i>dB</i>	<i>Angle</i>	<i>Field</i>	<i>dB</i>	<i>Angle</i>	<i>Field</i>	<i>dB</i>
-5.00	0.105	-19.58	6.50	0.123	-18.20	42.00	0.022	-33.15	88.00	0.007	-43.10
-4.75	0.110	-19.17	6.75	0.118	-18.56	43.00	0.029	-30.75	89.00	0.003	-50.46
-4.50	0.114	-18.86	7.00	0.115	-18.79	44.00	0.027	-31.37	90.00	0.000	0.00
-4.25	0.117	-18.67	7.25	0.113	-18.94	45.00	0.022	-33.15			
-4.00	0.120	-18.42	7.50	0.111	-19.09	46.00	0.029	-30.75			
-3.75	0.127	-17.92	7.75	0.108	-19.33	47.00	0.027	-31.37			
-3.50	0.138	-17.20	8.00	0.102	-19.83	48.00	0.023	-32.77			
-3.25	0.153	-16.33	8.25	0.096	-20.40	49.00	0.029	-30.75			
-3.00	0.165	-15.65	8.50	0.089	-21.01	50.00	0.029	-30.75			
-2.75	0.171	-15.34	8.75	0.085	-21.36	51.00	0.023	-32.77			
-2.50	0.166	-15.60	9.00	0.084	-21.51	52.00	0.027	-31.37			
-2.25	0.147	-16.65	9.25	0.085	-21.41	53.00	0.030	-30.46			
-2.00	0.122	-18.27	9.50	0.086	-21.31	54.00	0.025	-32.04			
-1.75	0.120	-18.45	9.75	0.085	-21.36	55.00	0.025	-32.04			
-1.50	0.169	-15.44	10.00	0.082	-21.72	56.00	0.029	-30.75			
-1.25	0.264	-11.55	11.00	0.065	-23.74	57.00	0.030	-30.46			
-1.00	0.382	-8.36	12.00	0.070	-23.10	58.00	0.026	-31.70			
-0.75	0.510	-5.85	13.00	0.053	-25.51	59.00	0.027	-31.37			
-0.50	0.638	-3.90	14.00	0.060	-24.44	60.00	0.030	-30.46			
-0.25	0.757	-2.42	15.00	0.046	-26.74	61.00	0.030	-30.46			
0.00	0.859	-1.32	16.00	0.052	-25.68	62.00	0.027	-31.37			
0.25	0.936	-0.58	17.00	0.043	-27.33	63.00	0.027	-31.37			
0.50	0.985	-0.13	18.00	0.044	-27.13	64.00	0.030	-30.46			
0.75	1.000	0.00	19.00	0.042	-27.54	65.00	0.031	-30.17			
1.00	0.984	-0.14	20.00	0.037	-28.64	66.00	0.030	-30.46			
1.25	0.938	-0.56	21.00	0.042	-27.54	67.00	0.028	-31.06			
1.50	0.868	-1.23	22.00	0.031	-30.17	68.00	0.029	-30.75			
1.75	0.778	-2.18	23.00	0.041	-27.74	69.00	0.031	-30.17			
2.00	0.679	-3.36	24.00	0.029	-30.75	70.00	0.031	-30.17			
2.25	0.578	-4.76	25.00	0.037	-28.64	71.00	0.029	-30.75			
2.50	0.484	-6.30	26.00	0.031	-30.17	72.00	0.028	-31.06			
2.75	0.406	-7.84	27.00	0.030	-30.46	73.00	0.028	-31.06			
3.00	0.345	-9.24	28.00	0.034	-29.37	74.00	0.030	-30.46			
3.25	0.304	-10.34	29.00	0.025	-32.04	75.00	0.033	-29.63			
3.50	0.276	-11.18	30.00	0.034	-29.37	76.00	0.033	-29.63			
3.75	0.256	-11.84	31.00	0.026	-31.70	77.00	0.032	-29.90			
4.00	0.238	-12.47	32.00	0.029	-30.75	78.00	0.028	-31.06			
4.25	0.220	-13.17	33.00	0.031	-30.17	79.00	0.023	-32.77			
4.50	0.202	-13.89	34.00	0.023	-32.77	80.00	0.017	-35.39			
4.75	0.187	-14.56	35.00	0.032	-29.90	81.00	0.012	-38.42			
5.00	0.174	-15.19	36.00	0.025	-32.04	82.00	0.009	-40.92			
5.25	0.165	-15.65	37.00	0.026	-31.70	83.00	0.009	-40.92			
5.50	0.157	-16.08	38.00	0.031	-30.17	84.00	0.011	-39.17			
5.75	0.149	-16.54	39.00	0.022	-33.15	85.00	0.011	-39.17			
6.00	0.140	-17.08	40.00	0.028	-31.06	86.00	0.011	-39.17			
6.25	0.132	-17.62	41.00	0.028	-31.06	87.00	0.009	-40.92			



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CDBS TV/DTV SEPARATION STUDY

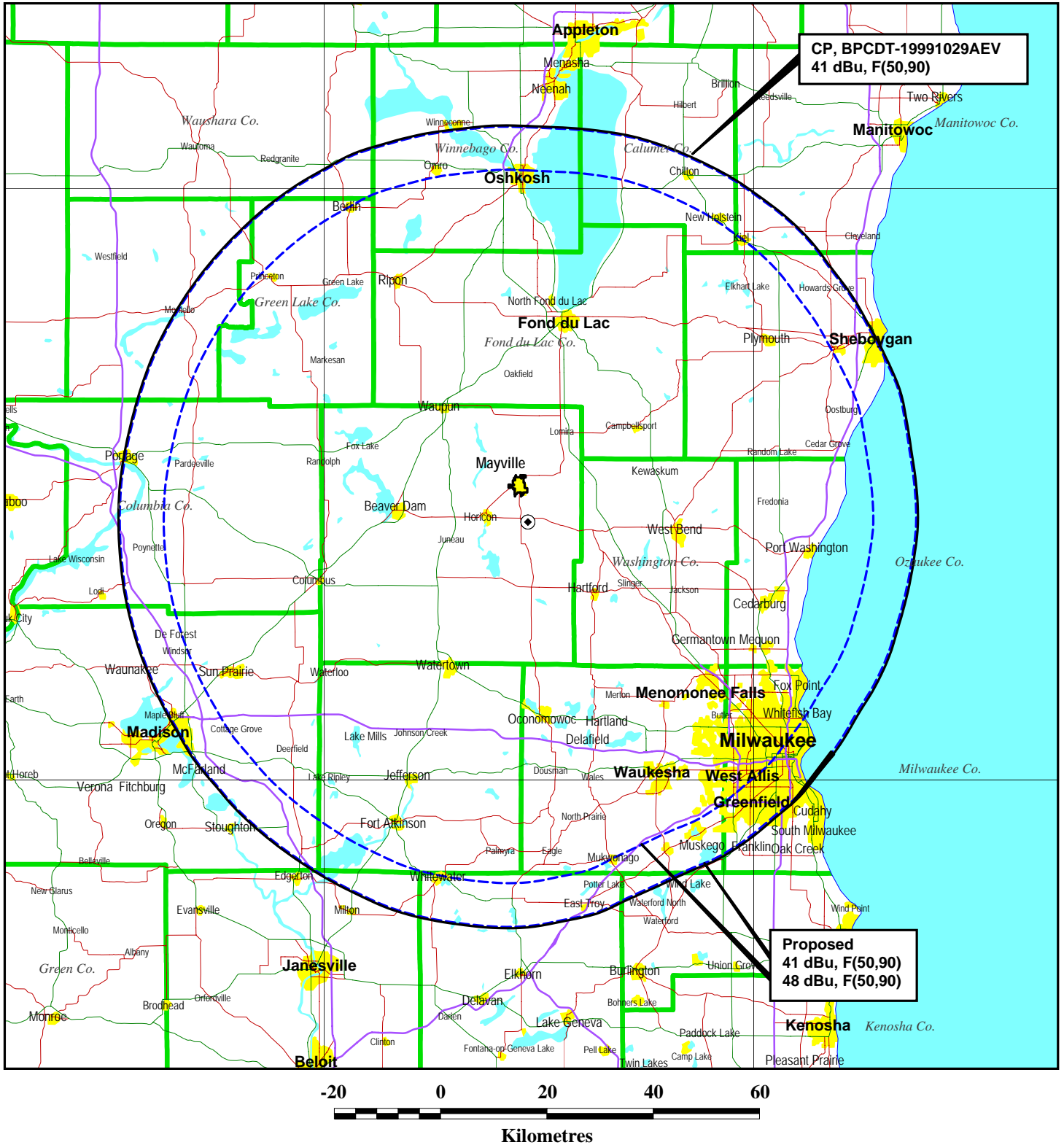
Job Title: Proposed WWRs-DT, Mayville, WI
 Channel: 43
 Class: C
 Type: DT

Separation Buffer: 50 km
 Coordinates: 43-26-11 088-31-34
 Zone: I

Call Id	City St	Status	File Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min	max
960722 83151	SHEBOYGAN WI		BPCT APP C 19960722KR	28(Z) I	5000.000 373	N	43-29-07 088-13-51	77.0	24.5 0.41	24.1	80.5 Short
WMVT 42665	MILWAUKEE WI		BLET LIC C 19810501KE	36(Z) I	2340.000 283	D 20654	43-05-48 087-54-19	126.7	63.0 17.53	24.1	80.5 Short
WMVT 42665	MILWAUKEE WI		BMPET APP C 20040618AA	36(Z) I	4790.000 339.8	D 66934	43-05-46 087-54-15	126.7	63.1 17.42	24.1	80.5 Short
WMVT 42665	MILWAUKEE WI		BPET CP C 19940610KE	36(Z) I	4790.000 330	D 18761	43-05-44 087-54-17	126.8	63.1 17.42	24.1	80.5 Short
WMLW-C 71422	MILWAUKEE WI		BLTTA LIC C 20021002AA	41(-) II	37.000 32060	D	43-06-42 087-55-50	126.6	60.3 20.18	0.0	0.0 Class A
WPNE 18798	GREEN BAY WI		BLEDT LIC C 20040505AB	42() II	200.000 375	N 45983	44-24-34 088-00-06	21.0	116.0 6.03	24.0	110.0 Close
DWPNE	GREEN BAY WI		DTV	42() II	50.000 360	D	44-24-35 088-00-05	21.0	116.1 6.07	24.0	110.0 Close
DWQRFT	ROCKFORD IL		DTV	42() I	50.000 176	D	42-17-26 089-09-51	202.4	137.6 27.56	24.0	110.0 Clear
WQRF-T 52408	ROCKFORD IL		BPCDT APP C 19991029AI	42() I	1000.000 149	D 40572	42-17-26 089-09-51	202.4	137.6 27.56	24.0	110.0 Clear
WWRs-T 68547	MAYVILLE WI		BPCDT CP C 19991029AE	43() I	250.000 202	N 41779	43-26-11 088-31-34	97.0	0.0		
DWWRs	MAYVILLE WI		DTV	43() I	50.000 120	D	43-26-11 088-31-34	90.2	0.0		
DWCFCT	CHICAGO IL		DTV	43() I	215.300 381	D	41-53-56 087-37-23	156.3	186.1 10.15	196.3	196.3 Short
WCPX 10981	CHICAGO IL		BPCDT CP C 19990824KE	43() I	200.000 508.7	D 38347	41-52-44 087-38-08	156.9	187.8 8.51	196.3	196.3 Short
KFXB 17625	DUBUQUE IA		BPCDT CP C 19991028AC	43() II	800.000 262	D 39740	42-31-09 090-37-11	239.8	198.9 2.57	196.3	196.3 Close
	DUBUQUE IA		DTV	43() II	50.000 256	D	42-31-05 090-37-16	239.8	199.0 2.73	196.3	196.3 Close
WMMF-T 60571	FOND DU LAC WI		BMPCD CP C 20040209AB	44() I	700.000 195	D 66227	43-26-20 088-31-29	22.1	0.3 23.70	24.0	110.0 Clear
DWMMFT	FOND DU LAC WI		DTV	44() I	122.700 506	D	43-21-44 088-53-45	254.7	31.1 7.07	24.0	110.0 Short

Call Id	City St	Status	File Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min max
960920 83742	GREEN BAY WI	APP C	BPCT 19960920YF	44(+) II	5000.000 339	N	44-30-48 088-00-24	19.0	126.7 20.71	12.0 106.0 Clear
98758	GREEN BAY WI	C		44(+) II		N	44-30-48 088-00-24	19.0	126.7 20.71	12.0 106.0 Clear
960722 83147	RICHLAND WI	CE APP C	BPCT 19960722KN	45(Z) I	5000.000 306	N	43-23-40 089-52-20	268.0	109.1 28.62	24.1 80.5 Clear
WMSN-T 10221	MADISON WI	BMLCT LIC C	20010817AA	47(+) I	1150.000 450	N 31625	43-03-21 089-32-06	243.0	92.2 11.70	24.1 80.5 Close
97095	OSHKOSH WI	C		50(+) II		N	44-01-18 088-32-42	358.7	65.0 15.45	24.1 80.5 Short
NEW 127326	GREEN BAY WI	BPRM ADD C	20000717AC	50(+) I	1000.000 339	D 41341	44-30-48 088-00-24	19.0	126.7 46.21	24.1 80.5 Clear
WCFC-C 10968	ROCKFORD IL	BLTTA LIC C	20020620AA	51(-)	49.400	D 17001	42-19-20 089-00-41	197.9	130.0 49.47	0.0 0.0 Class A

Figure 3



FCC PREDICTED 48 DBU AND 41 DBU DTV CONTOURS

STATION WWRS-DT
MAYVILLE, WISCONSIN
CH 43 300 KW 186 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida