INTERFERENCE ANALYSIS
Channel 283
University of Minnesota
Long Form 349

Minneapolis, MN
BNPFT20030317LQO
ERP = .099 kW H & V
August 2003

Page #3 of this exhibit is a computer generated channel study, showing the contour relationship between the proposed translator and adjacent stations. Page #4 is an explanation of the methods used in preparing the study. The proposal causes 2nd adjacent contour overlap with local class C1 station, WXPT, St. Louis Park.

Section 73.1204(a) of the Commissions Rules states that "an application for an FM translator station will not be accepted for filing if the proposed operation would involve overlap of predicted field strength contours with any other station, including commercial and noncommercial educational FM stations, FM translators and Class D (secondary) noncommercial educational FM stations." However, Section 74.1204(d) states that "the provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, *an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or other such factors as may be applicable."* (Emphasis added.)

Using the undesired-to-desired signal ratio method regarding interference to a second adjacent frequency[1], "interference is predicted to occur where the translator's undesired signal exceeds the protection station's desired signal by 40 dB or more."[2] The FCC F(50-50) curves were used to determine the signal strength, in dBu, of WXPT at the proposed translator's transmitter site. This signal strength was calculated to be 95 dBu, based on an HAAT toward the reference of 321.1 meters, power of 89 kW and distance of 13.47 km. Incorporating the 40 dB U/D ratio, the resulting translator interference contour is the 135 dBu. (95 + 40 = 135 dBu) At an ERP of .099 kW, the 135 dBu interference contour of the proposed translator station extends only 12.4 meters or 41 feet. Since the transmitting antenna will be 80 feet above the ground, the interference signal, extending only 41 feet, never touches the ground. Consequently, there is no interference to any population. If it is necessary to request a waiver of of Section 73.1204(a) of the

[1] *Second Report and Order,* FCC 00-368 at 9 and 39.
[2] *Memorandum Opinion and Order*, FCC 02-244 at 5 and 6, (In response to application of Living Way Ministries, Inc., File No. BPFT-19981001ITA.

Commissions Rules it is here so, respectfully, requested.

The proposed channel also has a 3rd adjacent relationship with WGVX, Lakeville, MN. The allocation map, attached as page #5 of this exhibit shows there is no contour overlap. Page #6 and #7 is an FMOVER study also showing that no contour overlaps occur.

Therefore no contour overlap or interference calculated on the basis of U/D will be caused to any existing licenses, construction permits or applications.

Doug Vernier Telecommunications Consultants
721 W. First St., Suite A, Cedar Falls, IA 50613

University of Minnesota
Minneapolis Campus Translator

REFERENCE CH# 283D - 104.5 MHz, Pwr= 0.099 kW, MAX HAAT=33.6 M, COR= 281 M DISPLAY DATES
44 58 14 N Average Protected F(50-50)= 5.91 km DATA 08-08-03
93 14 31 W Ave. F(50-10) 40 dBu= 19.6 54 dBu= 8.4 80 dBu= 1.9 100 dBu= .7 SEARCH 08-08-03

CH CALL	TYPE	AZI.	DIST	LAT.	Pwr(kW)	COR(M)	PRO(km)	*IN*	*OUT*
CITY	STATE	<--	FILE #	LNG.	HAAT(M)	INT(km)	LICENSEE	(Overlap in km)	
283D AP283	APP C	0.0	0.00	44 58 14	0.099	258	5.6	-24.15*<	-24.15*<
Minneapolis	MN	180.0	BNPFT20030317LRF	93 14 31	9	18.5	Regents Of The University		
281C1 WXPT	LIC CN	43.4	13.47	45 03 30	89.000	593	72.8	-2.29<	-60.01*<
St. Louis Park	MN	223.4	BLH19960411KC	93 07 27	321	0.7	The Audio House, Inc.		
286A WGVX	LIC NCN	166.4	30.77	44 42 05	2.600	440	28.6	21.65	1.45
Lakeville	MN	346.4	BLH19960507KA	93 09 02	158	0.7	Kqrs, Inc.		
284C KCLDFM	LIC CN	304.2	119.73	45 34 03	100.000	658	72.2	9.27	39.57
St. Cloud	MN	124.2	BLH19910913KB	94 30 43	298	8.0	Leighton Enterprises, Inc.		
284L1 AP284	APP	73.4	35.18	45 03 36	0.100	282	5.6	21.57	21.58
Stillwater	MN	253.4	BNPL20000830ACE	92 48 50	-14	8.0	Seventh-day Adventist Chur		
283C WAXX«	LIC CY	99.9	183.58	44 39 51	100.000	867	90.5	-17.66<	74.52
Eau Claire	WI	279.9	BLH7142	90 57 41	568	18.5	Maverick Media Of Eau Clai		
283D AP283	APP C	12.0	105.89	45 54 07	0.250	367	11.1	62.28	76.22
Hinkley	MN	192.0	BNPFT20030312ARE	92 57 25	74	18.5	1400 Inc.		
283C2 KJLY	LIC CN	205.6	161.05	43 39 41	50.000	466	50.9	19.01	91.62
Blue Earth	MN	25.6	BLH19901015KE	94 06 29	141	18.5	Minn-iowa Christian Broadc		
284L1 AP284	APP	129.4	72.53	44 33 19	0.100	54	5.6	58.92	58.93
Hager City	WI	309.4	BNPL20000901ACX	92 32 07	-153	8.0	Red Wing Broadcasting Asso		
285C3 WLMXFM	LIC CN	54.5	100.69	45 29 27	22.000	479	41.3	90.75	58.72
Balsam Lake	WI	234.5	BLH19970224KB	92 11 32	122	0.7	Quarnstrom Media Group, Ll		
Accepted as Class B1 by Canada 980605									
286D AP286	APP C	253.2	76.59	44 46 05	0.250	381	11.5	69.86	64.38
Glencoe	MN	73.2	BNPFT20030317FUE	94 10 06	79	0.7	Edgewater Broadcasting Inc		
285D DW290A	LIC HN	61.5	79.02	45 18 20	0.065	349	5.7	72.83	72.58
Amery	WI	241.5	BLFT19950113TB	92 21 21	39	0.7	Roger Olson		
Translator For WWIB, Ladysmith, WI. "To Channel 290"									
285A KRFOFM	LIC NCN	177.1	99.67	44 04 29	4.700	424	21.2	91.49	77.81
Owatonna	MN	357.1	BMLH19960111KW	93 10 46	60	0.7	Cumulus Licensing Corp.		
Section 73.215 applicant									
280D K280EC	LIC DC	175.3	98.34	44 05 19	0.006	469	5.1	91.92	92.55
Owatonna	MN	355.3	BLFT19990804TF	93 08 25	98	0.7	Minnesota Public Radio		

"*"Affixed to 'IN' or 'Out' values = site inside protected contour.
ERP and HAAT are on direct line to and from reference station.
"«" = Station meets FCC minimum distance spacing for its class. "<" = Contour Overlap

HOW TO READ THE FM COMPUTER PRINT-OUT

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table, while the 40, 54, 80 and 100 dBu contours are interference contours derived from the Commission's F(50-10) table. Contour distances are in kilometers and are predicted using spline interpolation from data points identical to those published in Report No. RS 76-01 by Gary C. Kalagian. Critical contour distances are determined using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

The column listed "* IN *" is the sum of the reference station's 60 dBu protected contour and the data file station's interference contour subtracted from the distance between the stations. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, the column is a measure of incoming interference. Negative distances in this column indicate the presence of interference. Listed antenna heights are the average heights of eight standard radials as found in the Commission's records unless otherwise noted, in which case the specific antenna heights and the DA power, if applicable, along the straight line azimuths between the reference station and the database station are used and visa versa. The column labeled "* OUT *" shows the distance in kilometers of overlap or clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing overlap interference.

Under the "AZIMUTH" column, the first row of numbers indicate the bearings from True North of the data base stations in relationship with the reference station, while the numbers in the second row indicate the reverse bearings from the database station to the reference station.

The columns labeled "INT" and "PRO" hold the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships the "IN" and "OUT" columns change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** separation in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. “Z” indicates a 73.215 directional. An “N” indicates it is a 73.215 station that operates omni. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an “X” if the commission is not sure, otherwise it will be an “N”.

Proposal Vs. WGVX

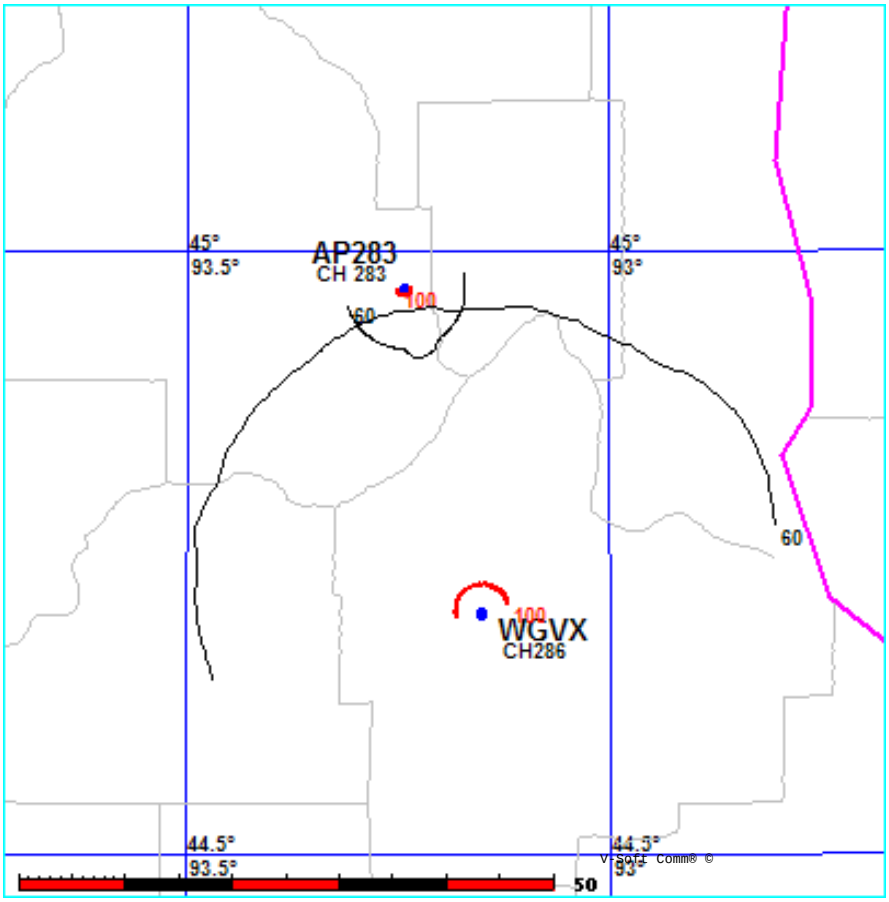
FMCONT Allocation Study

08-08-2003

AP283 CH 283 D
.099 kW 281M COR
Prot. = 60 dBu
Intef. = 100 dBu

WGVX CH 286 A
2.6kW, 440 M COR
Prot. = 60 dBu
Intef. = 100 dBu
File # BLH19960507KA

1:750,000



08-15-2003 30 Sec. Terrain Data

WGVX BLH19960507KA	AP283
Channel = 286A	Channel = 283D
Max ERP = 2.6 kW	Max ERP = 0.099 kW
RCAMSL = 440 M	RCAMSL = 281 M
N. Lat = 44 42 05	N. Lat = 445814
W. Lng = 93 09 02	W. Lng = 931431
Protected 60 dBu	Interfering 100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
316.0	002.6000	0153.7	028.3	232.3	000.0990	0007.7	015.7	42.4
317.0	002.6000	0153.7	028.3	232.6	000.0990	0006.7	015.2	42.8
318.0	002.6000	0153.7	028.3	232.7	000.0990	0006.7	014.7	43.3
319.0	002.6000	0153.6	028.3	232.8	000.0990	0006.7	014.2	43.9
320.0	002.6000	0153.7	028.3	233.0	000.0990	0006.7	013.7	44.5
321.0	002.6000	0153.7	028.3	233.1	000.0990	0006.7	013.2	45.2
322.0	002.6000	0153.4	028.3	233.0	000.0990	0006.7	012.7	45.9
323.0	002.6000	0152.8	028.2	232.8	000.0990	0006.7	012.2	46.6
324.0	002.6000	0152.4	028.2	232.6	000.0990	0006.7	011.7	47.3
325.0	002.6000	0152.9	028.2	232.8	000.0990	0006.7	011.3	48.1
326.0	002.6000	0154.1	028.3	233.2	000.0990	0006.7	010.8	48.9
327.0	002.6000	0155.0	028.4	233.4	000.0990	0006.7	010.3	49.8
328.0	002.6000	0155.7	028.4	233.6	000.0990	0006.4	009.8	50.7
329.0	002.6000	0156.6	028.5	233.8	000.0990	0006.4	009.3	51.6
330.0	002.6000	0157.6	028.6	234.0	000.0990	0006.4	008.8	52.5
331.0	002.6000	0158.3	028.7	234.0	000.0990	0006.4	008.3	53.4
332.0	002.6000	0158.8	028.7	233.8	000.0990	0006.4	007.8	54.4
333.0	002.6000	0159.1	028.7	233.4	000.0990	0006.7	007.3	55.6
334.0	002.6000	0159.2	028.7	232.8	000.0990	0006.7	006.8	56.8
335.0	002.6000	0159.8	028.8	232.3	000.0990	0007.7	006.3	58.1
336.0	002.6000	0160.6	028.9	231.8	000.0990	0007.7	005.8	59.6
337.0	002.6000	0161.1	028.9	230.8	000.0990	0008.9	005.3	61.1
338.0	002.6000	0161.1	028.9	229.2	000.0990	0010.8	004.8	62.7
339.0	002.6000	0161.2	028.9	227.0	000.0990	0012.6	004.3	64.5
340.0	002.6000	0161.1	028.9	224.0	000.0990	0016.3	003.8	66.4
341.0	002.6000	0160.9	028.9	220.0	000.0990	0019.5	003.4	68.6
342.0	002.6000	0160.9	028.9	214.9	000.0990	0020.6	003.0	70.8
343.0	002.6000	0160.6	028.9	207.8	000.0990	0021.2	002.6	73.3
344.0	002.6000	0159.9	028.8	198.0	000.0990	0023.1	002.3	75.4
345.0	002.6000	0158.8	028.7	185.7	000.0990	0026.8	002.2	76.7
346.0	002.6000	0157.8	028.6	172.4	000.0990	0040.4	002.2	79.6
347.0	002.6000	0157.4	028.6	159.3	000.0990	0040.5	002.2	79.3
348.0	002.6000	0157.7	028.6	146.9	000.0990	0032.0	002.3	76.3
349.0	002.6000	0157.6	028.6	136.4	000.0990	0021.8	002.5	73.9
350.0	002.6000	0156.8	028.5	128.9	000.0990	0009.6	002.9	71.4
351.0	002.6000	0155.7	028.4	123.5	000.0990	0006.7	003.3	69.1

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
172.0	000.0990	0040.4	006.5	345.0	002.6000	0158.8	024.3	64.4
173.0	000.0990	0039.7	006.4	344.8	002.6000	0158.8	024.4	64.3
174.0	000.0990	0038.9	006.3	344.5	002.6000	0158.8	024.5	64.3
175.0	000.0990	0037.7	006.3	344.3	002.6000	0159.9	024.6	64.2
176.0	000.0990	0036.5	006.1	344.1	002.6000	0159.9	024.7	64.2
177.0	000.0990	0035.2	006.0	343.9	002.6000	0159.9	024.9	64.1
178.0	000.0990	0034.3	006.0	343.7	002.6000	0159.9	025.0	64.0
179.0	000.0990	0033.2	005.9	343.6	002.6000	0159.9	025.1	63.9
180.0	000.0990	0032.2	005.8	343.4	002.6000	0160.6	025.2	63.9
181.0	000.0990	0030.8	005.7	343.3	002.6000	0160.6	025.3	63.8
182.0	000.0990	0029.4	005.6	343.1	002.6000	0160.6	025.4	63.7
183.0	000.0990	0028.4	005.6	342.9	002.6000	0160.6	025.4	63.7
184.0	000.0990	0027.8	005.6	342.7	002.6000	0160.6	025.5	63.7
185.0	000.0990	0027.3	005.6	342.5	002.6000	0160.9	025.5	63.7
186.0	000.0990	0026.8	005.6	342.3	002.6000	0160.9	025.5	63.6
187.0	000.0990	0026.1	005.6	342.1	002.6000	0160.9	025.6	63.6
188.0	000.0990	0025.6	005.6	341.9	002.6000	0160.9	025.6	63.6
189.0	000.0990	0025.0	005.6	341.7	002.6000	0160.9	025.7	63.5
190.0	000.0990	0024.6	005.6	341.5	002.6000	0160.9	025.7	63.5
191.0	000.0990	0024.4	005.6	341.3	002.6000	0160.9	025.8	63.5
192.0	000.0990	0024.4	005.6	341.1	002.6000	0160.9	025.8	63.4
193.0	000.0990	0024.3	005.6	340.9	002.6000	0160.9	025.9	63.4
194.0	000.0990	0024.2	005.6	340.7	002.6000	0160.9	025.9	63.4
195.0	000.0990	0024.1	005.6	340.6	002.6000	0160.9	026.0	63.3
196.0	000.0990	0023.7	005.6	340.4	002.6000	0161.1	026.0	63.3