

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
FCC FILE NO. BPCDT-20000427AAD
FACILITY ID 41674
STATION WNDU-DT
SOUTH BEND, INDIANA
CH 42 560 KW 282 M

Technical Narrative

This technical exhibit was prepared in support of an application for modification of the construction permit for station WNDU-DT on channel 42 at South Bend, Indiana (BPCDT-20000427AAD). By means of this instant modification application, WNDU-DT proposes to change transmitter site and decrease the nondirectional effective radiated power (ERP) from 695 kW to 560 kW and to decrease the antenna height above average terrain (HAAT) from 299 meters to 282 meters. No other changes are proposed. 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 WNDU-DT's authorized DTV service area in any direction.¹

Proposed Facilities

It is proposed to operate WNDU-DT from the licensed WNDU-DT site (NAD27 coordinates: 41-36-19 N, 86-12-45 W) with a nondirectional antenna maximum ERP of 560 kW and an antenna HAAT of 282 meters. It is proposed to increase the overall height of the existing tower/antenna structure by 103.6 meters, from 164.0 meters above ground level (AGL) to 267.6 meters AGL, and mount a Dielectric model TUP-04-8-1 nondirectional panel antenna at the 263 meter level on the tower structure. The Dielectric model TUP-04-8-1 nondirectional antenna will incorporate 0.50 degree of electrical beam tilt. The proposed antenna radiation center height above mean sea level will be 521 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 4 - Antenna Structure Registration
Number

As noted above, it is proposed to increase the height of the existing supporting structure from 164.0 meters to 267.6 meters. The FAA has been notified of the proposed height increase (FAA Aeronautical study No. 2005-AGL-1147-OE). The tower registration number for the existing structure is 1027597. Upon receipt of a Determination of No Hazard from the FAA, the registered tower information will be revised to reflect the increased height.

Response to Paragraph 10 - Antenna Data

Figure 1 provides vertical plane radiation pattern data for the proposed Dielectric model TUP-04-8-1, horizontally polarized, nondirectional panel antenna system.

Response to Paragraph 11 - Interference Protection

Figure 2 is the separation study for DTV channel 42 from the proposed WNDU-DT 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 WNDU-DT DTV operation are summarized below. It is noted that the summary only includes stations with which interference (masked or unmasked) is calculated.

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.

Protected NTSC/DTV Station	FCC Service Population	Proposed Unique Interference Population*
WOTV, NTSC Ch. 41 Battle Creek, MI License	1,800,294	603 (0.03%)
WQRF-DT, DTV Ch. 42 Rockford, IL Allotment Application	690,621 690,621	214 (0.03%) 2,124 (0.31%)
WCLJ-TV, NTSC Ch. 42 Bloomington, IN License	1,561,287	125 (0.01%)
WCPX, DTV Ch. 43 Chicago, IL CP	8,098,818	2,519 (0.03%)

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

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

Class A Allocation Considerations

A study has been conducted which indicates that the WNDU-DT proposal will not create prohibited interference to other existing, authorized or proposed Class A stations.

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 WNDU-DT operation (BPCDT-20000427AAD) and the herein proposed WNDU-DT DTV channel 42 operation. As indicated, the 41 dBu contour for the instant modification application is entirely within the 41 dBu contour for the authorized operation. Therefore, it is believed that the instant modification application is acceptable for filing under the criteria set forth in the FCC TV/DTV freeze as there will be no increase in WNDU-DT's DTV channel 42 service area, based on the authorized facilities, 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 WNDU-DT channel 42 operation. As indicated South Bend is located within the 48 dBu contour. The South Bend city limits were derived from information contained in the 2000 U.S. Census for Indiana.

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.

US-Canadian LOU Compliance

The instant modification application proposes a reduction in the currently authorized facilities. Therefore, Canadian coordination is not believed necessary. Furthermore, it is noted that the proposed WNDU-DT operation complies with the requirements of the distance tables in Appendix 2 of the Letter of Understanding (LOU) between the FCC and Industry Canada.³

Objectionable Interference

Station WSBT(AM) is the only authorized full service AM station within 5 kilometers (3 miles) of the proposed transmitter site. Figure 4 provides a tabulation of all known authorized full service FM and TV stations within 16 kilometers of the proposed WNDU-DT site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed operation.

The proposed site is more than 1895 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Allegan, Michigan located 113 kilometers to the north. The National Radio Quiet Zone

³ See Letter of "Understanding Between the Federal Communications Commission of the United States of American and Industry Canada Related to the Use of the 54-72 MHz, 76-88 MHz, 174-216 MHz and 470-806 MHz Bands for the Digital Television Broadcasting Service Along the Common Border".

(VA/WV) is 550 kilometers to the east-southeast. The Table Mountain Radio Quiet Zone (CO) is more than 1603 kilometers to the west. The closest radio astronomy site conducting research on TV channel 37 is at North Liberty, Iowa located 445 kilometers to the west. All these separations are considered sufficient to avoid interference from the proposed operation.

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 263 meters above ground level. The maximum DTV ERP is 560 kW (horizontal polarization). A "worst-case" vertical plane relative field value of 0.1 (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 0.0027 mW/cm^2 . This is 0.63% of the FCC's recommended limit of 0.43 mW/cm^2 for channel 42 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 will continue to be restricted and appropriately marked with warning signs. As this is a proposed multi-user site, agreements are currently in effect concerning workers or other authorized personnel that enter restricted areas or climb the tower, to ensure that appropriate measures are 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 "accepted" RFR protective clothing and/or RFR exposure monitors 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.



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DIELECTRIC



Call Letters
Location
Customer
Antenna Type

WNDU-HD Channel 42
South Bend, IN
TUP-04-8-1

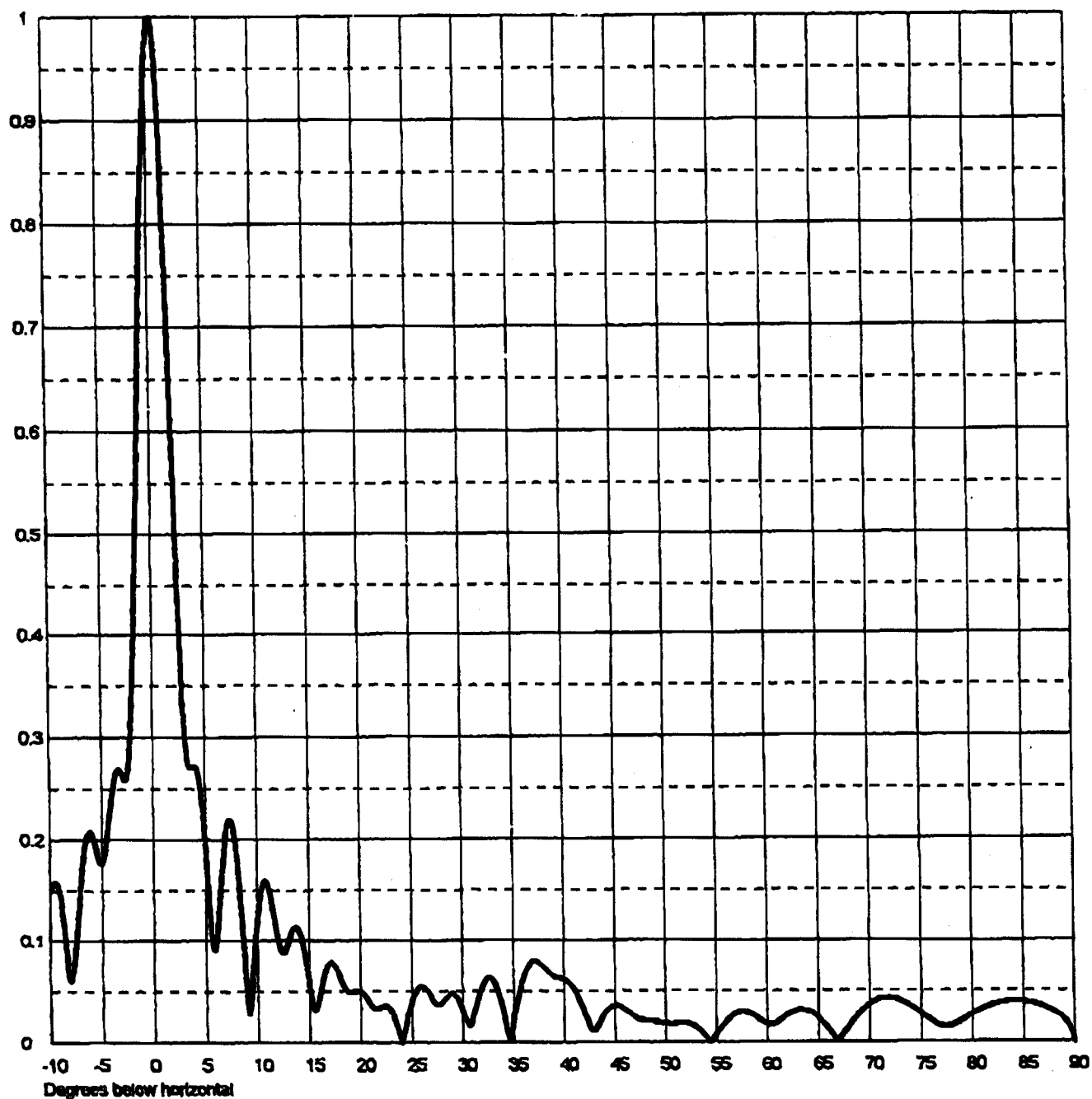
ELEVATION PATTERN

RMS Gain at Main Lobe
RMS Gain at Horizontal
Calculated / Measured

17.2 (12.36 dB)
16.0 (12.04 dB)
Calculated

Beam Tilt
Frequency
Drawing #

0.50 Degrees
641.00 MHz
08U172050-90



DIELECTRIC COMMUNICATIONS

A UNIT OF GENERAL SIGNAL



CDBS TV/DTV SEPARATION STUDY

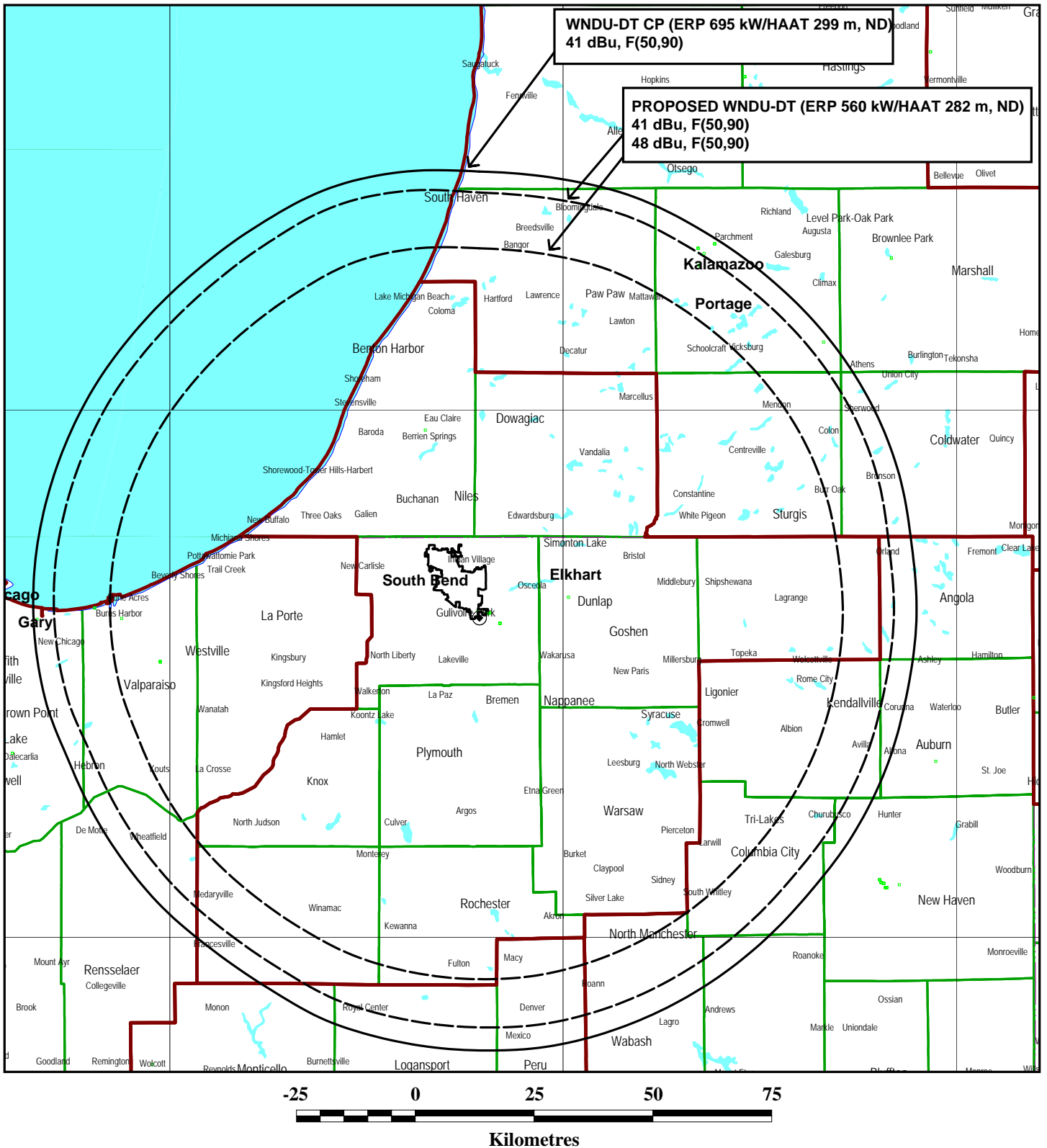
Job Title: Proposed WNDU-DT
Channel: 42
Class: C
Type: DT

Separation Buffer: 50 km
Coordinates: 41-36-19 086-12-45
Zone: I

Call Id	City St	File Status Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min	max
WSJV 74007	ELKHART IN	BLCT LIC C	19991223AC	28(+) I	5000.000 335	D 30747	41-36-58 086-11-38	52.1	2.0 22.14	24.1 80.5 Clear
WNIT 41671	SOUTH BEND IN	BLET LIC C	19910307KE	34(-) I	1380.000 246	N 66515	41-36-59 086-11-43	49.2	1.9 22.21	24.1 80.5 Clear
WEDE-CA 66978	ARLINGTON H IL	BLTTA LIC C	20050308AA	34(Z) I	48.000 66956	C	41-52-44 087-38-10	284.9	122.3 41.76	0.0 0.0 Class A
WCPX 10981	CHICAGO IL	BLCT LIC C	2495	38(-) I	5000.000 381	D 20628	41-53-56 087-37-23	286.1	121.8 41.27	24.1 80.5 Clear
WCPX 10981	CHICAGO IL	BPCT CP C	20040802AT	38(-) I	3630.000 510	D 67250	41-52-44 087-38-08	284.9	122.2 41.72	24.1 80.5 Clear
WFWA 22108	FORT WAYNE IN	BLET LIC C	19920131KF	39(-) I	1380.000 223	N 67640	41-06-13 085-11-28	122.9	102.0 21.53	24.1 80.5 Clear
WFWA 22108	FORT WAYNE IN	BPET APP C	20050405AB	39(-) I	1125.000 223	N 69331	41-06-13 085-11-28	122.9	102.0 21.53	24.1 80.5 Clear
WOCH-LP 35101	CHICAGO IL	BPTTA APP C	20050127AL	41(Z) I	110.000 69514	C	41-53-56 087-37-23	286.1	121.8 15.77	0.0 0.0 Class A
WOCH-LP 35101	CHICAGO IL	BPTTL CP C	20010711AB	41(Z) I	25.000 16875	D	41-53-56 087-37-23	286.1	121.8 15.77	0.0 0.0 Class A
WOTV 10212	BATTLE CREE MI	BLCT LIC C	19961120KE	41(+) I	5000.000 329	N 28527	42-34-15 085-28-07	29.5	123.7 17.65	12.0 106.0 Clear
WNDU-TV 41674	SOUTH BEND IN	BLCDT LIC C	19991230AA	42() I	310.000 178	N 30578	41-36-19 086-12-45	90.0	0.0 196.30	196.3 196.3 Short
DWNDUT	SOUTH BEND IN	DTV		42() I	390.900 326	D	41-36-20 086-12-45	1.5	0.0 196.27	196.3 196.3 Short
WNDU-TV 41674	SOUTH BEND IN	BPCDT CP C	20000427AA	42() I	695.000 299	N 68032	41-36-20 086-12-46	323.1	0.0 196.26	196.3 196.3 Short
WCLJ-TV 68007	BLOOMINGTON IN	BLCT LIC C	19870904KG	42(+) I	5000.000 317	D 17190	39-24-12 086-08-50	178.7	244.6 27.27	217.3 217.3 Clear
DWCFCT	CHICAGO IL	DTV		43() I	215.300 381	D	41-53-56 087-37-23	286.1	121.8 11.77	24.0 110.0 Close
WCPX 10981	CHICAGO IL	BPCDT CP C	19990824KE	43() I	200.000 508.7	D 38347	41-52-44 087-38-08	284.9	122.2 12.22	24.0 110.0 Close

Call Id	City St	Status	File Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min	max
WZPX 71871	BATTLE CREE MI	BLCT LIC C	19961017KE	43(-) I	5000.000 323	N 44916	42-40-45 085-03-57	38.0	152.4 46.36	12.0	106.0 Clear
WSNS-TV 70119	CHICAGO IL	BLCT LIC C	20000110AA	44(Z) I	5000.000 472	D 17531	41-52-44 087-38-10	284.9	122.3 41.76	24.1	80.5 Clear
WFWC-CA 67485	FORT WAYNE IN	BLTTL LIC C	19900727IO	45(+) I	5.800 18314	D 18314	41-05-58 085-08-43	121.9	105.5 25.01	0.0	0.0 Class A
WHME-TV 36117	SOUTH BEND IN	BLCT LIC C	2590	46(Z) I	1120.000 305	N 44922	41-35-43 086-09-38	104.4	4.5 19.63	24.1	80.5 Clear
WOKZ-CA 36841	KALAMAZOO MI	BLTTA LIC C	20021213AB	50(+) I	14.300 44922	C 44922	42-17-48 085-38-29	31.4	90.2 9.72	0.0	0.0 Class A
WPWR-TV 48772	GARY IN	BLCT LIC C	19870128KL	50(Z) I	5000.000 494	D 16279	41-52-44 087-38-10	284.9	122.3 41.76	24.1	80.5 Clear

Figure 3



**FCC PREDICTED COVERAGE CONTOURS
STATION WNDU-DT
SOUTH BEND, INDIANA
CH 42 560 KW 282 M**

du Treil, Lundin, and Rackley**Proposed WNDU-DT****Coordinates: 41-36-19 086-12-45 Frequency Range: -****Range: 16**

Date: 5/27/2005

CDBS FM Inquiry List

Page: 1

Rec Type	Fac Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bear	Dist. (km)
C	19365	WVPE	LIC	201	FM	B	ELKHART	IN	N	41-36-59	086-11-43	10.500	169.0	404.0	49.2	1.9
C	70459	WSND-F	LIC	205	FM	A	NOTRE DAME	IN	N	41-36-19	086-12-45	3.400	110.0	348.0	0.0	0.0
C	28881	WUBS	LIC	209	FM	A	SOUTH BEND	IN	N	41-40-51	086-15-34	1.500	24.0	255.0	335.1	9.3
C	28881	WUBS	CP	209	FM	A	SOUTH BEND	IN	D	41-40-51	086-15-34	2.200	68.0	299.0	335.1	9.3
C	28881	WUBS	APP	209	FM	A	SOUTH BEND	IN	D	41-40-36	086-15-08	1.300	89.0	318.0	337.4	8.6
C	60920	WETL	LIC	219	FM	A	SOUTH BEND	IN		41-37-24	086-14-15	3.000	91.0	331.0	314.0	2.9
C	41675	WNDV-F	CP	225	FM	B	SOUTH BEND	IN	N	41-36-20	086-12-46	12.000	268.0	507.0	323.1	0.0
C	41675	WNDV-F	LIC	225	FM	B	SOUTH BEND	IN		41-36-20	086-12-45	12.000	268.0	507.0	1.1	0.0
C	12999	WZOC	LIC	232	FM	B1	PLYMOUTH	IN	N	41-31-41	086-15-53	11.500	150.0	395.0	206.9	9.6
C	48911	WAOR	LIC	237	FM	A	NILES	MI	N	41-44-16	086-15-10	5.500	84.0	312.1	347.2	15.1
C	51723	WBYT	LIC	264	FM	B	ELKHART	IN	N	41-36-58	086-11-38	15.000	277.0	517.0	52.1	2.0
C	73984	WNSN	LIC	268	FM	B	SOUTH BEND	IN	N	41-37-00	086-13-01	13.000	296.0	536.0	343.7	1.3
C	37149	WHME	LIC	276	FM	A	SOUTH BEND	IN		41-36-11	086-12-51	3.000	91.0	336.0	209.3	0.3
C	27145	WRBR-F	LIC	280	FM	A	SOUTH BEND	IN		41-41-53	086-09-20	3.000	100.0	336.0	24.6	11.3
C	21927	WUBU	APP	292	FM	A	SOUTH BEND	IN	D	41-40-35	086-15-08	3.000	92.0	323.0	337.4	8.6
C	21927	WUBU	LIC	292	FM	A	SOUTH BEND	IN	D	41-40-36	086-15-08	3.000	89.0	320.0	337.4	8.6

du Treil, Lundin, and Rackley**Proposed WNDU-DT****Coordinates: 41-36-19 086-12-45 Channel Range: -****Range: 16**

Date: 5/27/2005

CDBS Tv Inquiry List

Page: 1

Rec Type	Facility Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bearing	Dist. (km)
C	41674	WNDU-T	LIC	42	DT		SOUTH BEND	IN	N	41-36-19	086-12-45	310.000	178	417	0	0
C	41674	WNDU-T	CP	42	DT		SOUTH BEND	IN	N	41-36-20	086-12-46	695.000	299	538	323.0	0.04
C	41674	WNDU-T	LIC	16	TV		SOUTH BEND	IN	N	41-36-20	086-12-46	5000.00	326	565	323.0	0.04
C	73983	WSBT-T	LIC	22	TV		SOUTH BEND	IN	N	41-37-00	086-13-01	4790.00	325	566	343.7	1.32
C	73983	WSBT-T	CP	30	DT		SOUTH BEND	IN	N	41-37-00	086-13-01	400.000	239	481	343.7	1.32
C	41671	WNIT	LIC	34	TV		SOUTH BEND	IN	N	41-36-59	086-11-43	1380.00	246	485	49.20	1.89
C	74007	WSJV	LIC	28	TV		ELKHART	IN	D	41-36-58	086-11-38	5000.00	335	575	52.08	1.96
C	74007	WSJV	CP	58	DT		ELKHART	IN	N	41-36-58	086-11-38	671.000	298	538	52.08	1.96
C	41671	WNIT	LIC	35	DT		SOUTH BEND	IN	N	41-36-49	086-11-20	50.000	332.9	575	64.72	2.18
C	36117	WHME-T	LIC	46	TV		SOUTH BEND	IN	N	41-35-43	086-09-38	1120.00	305	550	104.4	4.47
C	36117	WHME-T	CP	48	DT		SOUTH BEND	IN	D	41-35-43	086-09-38	300.000	295	539	104.4	4.47