

Comprehensive Technical Exhibit
Amendment to Application for Construction Permit
Digital Flash-Cut
WEDE-CA – Arlington Heights, Illinois
First United, Inc.
March, 2009

Amendment to Application for Construction Permit

The following engineering statement and attached exhibits have been prepared for **First United, Inc.**, licensee of Class-A television station WEDE-CA at Arlington Heights, Illinois and are in support of their amendment to application for construction permit to modify that facility.¹ This application seeks to amend the pending application requesting a flash-cut from analog to digital facilities on the current channel of operation.

By way of letter the applicant was advised that the facilities originally proposed in BDFCDTA-20081014AAM did not comply with the Commission's interference standards. The failure to comply with the interference standards was the result of improper modeling of the interference situation for the proposed facility. Specifically full-power ratios were utilized instead of the appropriate LPTV/Class-A ratios.

In order to bring the proposed facility into compliance with the Commission's interference standards, a reduction in the maximum effective radiated power to 4.3 kW from the originally requested 15 kW is proposed. In addition, the applicant will continue to utilize the existing WEDE-CA directional antenna system for the flash-cut facility. Use of the existing antenna will result in a change in the directional pattern proposed under the original application. The applicant will also specify use of a stringent mask to aid in interference protection.

The antenna that would continue to be utilized by WEDE is an MCI model 9552312 antenna. This is a custom directional panel antenna designed by MCI, and has been in use by

¹ The facility ID for WEDE-CA is 66978.

WEDE for several years. The antenna utilizes 0.75 degrees of electrical beamtilt. No mechanical beamtilt is utilized or proposed.

The proposed facility will comply with the applicable interference requirements. Sections 73.6016 through 73.6019 reference various portions of Section 74.793 of the Commission's Rules. Exhibits E-1 and E-2 depict the interference study for the proposed facility relative to other DTV, LPTV, and Class-A facilities. These two exhibits demonstrate that the proposed facility would comply with the interference requirements of the applicable rule sections to all facilities except the analog facilities of WWTO-TV.

As indicated in Exhibits E-1 and E-2, the proposed facility is predicted to cause interference to 1.0 percent of the analog service area population of WWTO-TV.² The CDBS indicates that WWTO-TV is licensed and silent, implying that it has ceased analog operations on channel 35. The applicant, however, will not have sufficient time following a grant of this construction permit to flash-cut WEDE-CA to digital operations ahead of the June modified NTSC sunset date. As a result, the interference situation to WWTO-TV will become moot prior to the time at which WEDE-CA will be able to commence digital operations.

Section 73.6020 refers to Section 74.709 of the Commission's Rules. That section discusses interference protection requirements to facilities operating in the Land Mobile Service. Although Chicago, Illinois is one of the areas identified in this particular section, the proposed facility operates on channel 34, therefore rendering this section of the Commission's Rules not applicable in this particular instance.

² The facility ID for WWTO-TV at La Salle, Illinois is 998.

The proposed facility would comply with Sections 73.6027, 73.1030, and 0.121 of the Commission's Rules. WEDE-CA is not located in close proximity to any radio astronomy facility identified in the Commission's Rules. In addition, the proposed facility is not located in proximity to any protected FCC field installation. WEDE-CA is not expected to adversely affect any facility described under the above referenced sections of the Commission's Rules.

The proposed WEDE-CA facility would not constitute a substantial environmental impact. Although a change in the antennas would be made, no excavation or additional environmental impact would result. In addition, an RF exposure hazard would not result to the general public from the proposed facility. The rooftop level of Sears Tower is a restricted access area, to which only persons trained in the hazards and exposure mitigation procedures relevant to non-ionizing radiation are granted access.

Since the rooftop of the building is a controlled access area, the controlled environment condition of the applicable safety standard is applicable. Due to the physical dimensions of the building, all points on the rooftop lie within a depression angle between 60.0 and 90 degrees from the antenna. The maximum relative field within this range has 0.200 as a value. Neglecting trigonometric dimensions and assuming the distance is simply the vertical distance above the rooftop of the antenna (20 feet) the maximum predicted power density from the proposed WEDE-CA proposed facility is $154.4 \mu\text{W}/\text{cm}^2$, which is considerably less than the $1970 \mu\text{W}/\text{cm}^2$ permissible under the controlled environment condition of the applicable safety standard. The power density at ground level will clearly be insignificant.

In order to ensure that the proposed facility does not result in the creation of additional restricted areas on the rooftop levels of the building, a survey of the rooftop non-ionizing radiation levels will be performed following construction of the facility. Such surveys are performed regularly at Sears Tower and are also completed following the installation of new or additional broadcast facility.

WEDE-CA will coordinate with other users of the broadcast platform to ensure that workers are not exposed to levels of non-ionizing radiation which may exceed the applicable safety standards. Sears Tower utilizes an RF safety program with a solitary RF safety contractor responsible for all coordination and notification of antenna work. During such periods of work, the contractor requires affected facilities to switch to alternate antennas, reduce power, or cease operation as necessary to protect workers.

The structure utilized for the facilities described in this application has been registered with the Commission. Specifically an Antenna Structure Registration Number of 1032959 has been assigned to the structure.

Affidavit

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2009

Jeremy D. Ruck, PE
March 5, 2009

Exhibit E-2

Outgoing Interference Population Report

WEDE-CA-D.A (34) Arlington Heights, IL - BDFCDTA20081014AAM
Broadcast Type: Digital Service: F [Stringent Emission Mask]
Lat: 41-52-44 N Lng: 087-38-10 W ERP: 4.3 kW AMSL: 625.4 m
TV Outgoing Interference Study
Signal Resolution: 2.0 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
Default # of radials computed for contours: 72
Contours calculated using 8 radial HAAT.
LR Profile Spacing Increment: 1.0 km
Masked interference points are being
counted as interference.
Using LPTV/translator D/U rules.
Pop Centroid DB: 2000 US Census (SF1)

Study Date: 3/5/2009
TV Database Date: 3/4/2009

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Stations Considered:

Call Letters	City	State	Dist	Bear
1177674-D.A (33)	Chicago	IL	2.5	26.0
KQIN-D (34)	DAVENPORT	IA	237.2	255.5
KQIN-D.C (34)	Davenport	IA	237.2	255.5
W34BZ (34Z)	Ludington	MI	265.2	23.2
W34DL (34Z)	Champaign	IL	195.8	192.0
W34DL-D.C (34)	Champaign	IL	195.8	192.0
W57CQ.A (34+)	Lafayette	IN	177.6	158.4
W58CO.A (34+)	Madison	WI	219.0	313.2
W64CQ.A (42-)	Arlington Heights	IL	40.6	315.1
W64CQ.C (42-)	Arlington Heights	IL	40.6	315.1
WCIU-TV (26Z)	Chicago	IL	0.0	0.0
WCIU-TV.A (26Z)	Chicago	IL	0.0	90.0
WCPX (38-)	Chicago	IL	0.0	90.0
WFBN-LP-D.C (35)	Rockford	IL	126.3	290.5
WFLD (32Z)	Chicago	IL	2.5	26.0
WFLD.C (31)	Chicago	IL	0.0	90.0
WGN-TV (19)	Chicago	IL	0.0	90.0
WGN-TV.C (19Z)	Chicago	IL	0.0	90.0
WHTV-D (34)	JACKSON	MI	264.2	75.8

WHTV-D.A (34)	Jackson	MI	283.5	70.4
WHTV-D.C (34)	Jackson	MI	283.5	70.4
WIPX-LP.C (34+)	Indianapolis	IN	251.2	150.9
WIPX-LP-D.C (34)	Indianapolis	IN	248.8	150.0
WISN-D (34)	MILWAUKEE	WI	139.0	350.1
WISN-TV-D (34)	Milwaukee	WI	139.0	350.1
WITI.C (33)	Milwaukee	WI	136.3	351.0
WITI-D (33)	MILWAUKEE	WI	136.2	351.0
WITI-D.A (33)	Milwaukee	WI	136.3	351.0
WITI-D.A (33)	Milwaukee	WI	136.3	351.0
WITI-D.A (33)	Milwaukee	WI	136.3	351.0
WITI-D.C (33)	Milwaukee	WI	137.0	350.8
WMVT-D (35)	Milwaukee	WI	137.0	350.8
WMVT-D (35)	MILWAUKEE	WI	137.0	350.8
WMVT-D.S (35)	Milwaukee	WI	137.0	350.8
WMYS-LP.A (34-)	South Bend	IN	124.2	103.2
WNIT-D (35)	SOUTH BEND	IN	123.9	103.3
WNIT-D (35)	South Bend	IN	123.9	103.3
WNIT-D.A (35)	South Bend	IN	123.9	103.3
WOCH-CA (41Z)	Chicago	IL	2.5	26.0
WOCH-CA.A (41Z)	Chicago	IL	2.5	26.0
WWTO-TV (35Z)	La Salle	IL	127.2	239.0
WYCC (20Z)	Chicago	IL	2.5	26.0

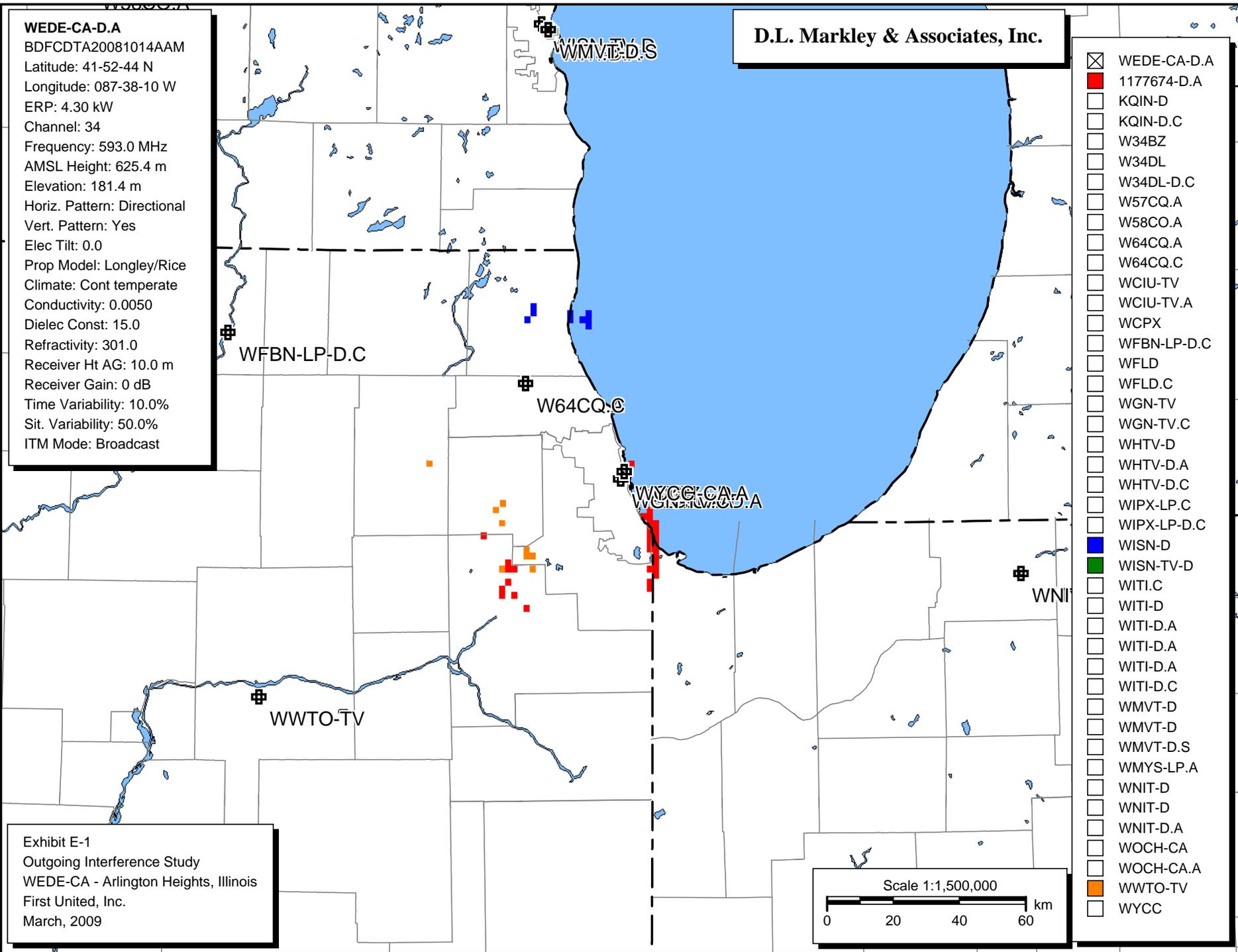
Call	Area	HUnits	Contour	Masked	Ix	Unmasked	Ix	%
1177674-D.A (33)	109.6	32,417	4,545,652	0		85,327		1.9
KQIN-D (34)	0.0	0	421,540	0		0		0.0
KQIN-D.C (34)	0.0	0	628,962	0		0		0.0
W34BZ (34Z)	0.0	0	28	0		0		0.0
W34DL (34Z)	0.0	0	173,681	0		0		0.0
W34DL-D.C (34)	0.0	0	277,060	0		0		0.0
W57CQ.A (34+)	0.0	0	153,331	0		0		0.0
W58CO.A (34+)	0.0	0	97,363	0		0		0.0
W64CQ.A (42-)	0.0	0	948,600	0		0		0.0
W64CQ.C (42-)	0.0	0	948,600	0		0		0.0
WCIU-TV (26Z)	0.0	0	9,338,626	0		0		0.0
WCIU-TV.A (26Z)	0.0	0	6,447,026	0		0		0.0
WCPX (38-)	0.0	0	9,247,812	0		0		0.0
WFBN-LP-D.C (35)	0.0	0	336,017	0		0		0.0
WFLD (32Z)	0.0	0	9,264,736	0		0		0.0
WFLD.C (31)	0.0	0	7,544,439	0		0		0.0
WGN-TV (19)	0.0	0	7,220,638	0		0		0.0
WGN-TV.C (19Z)	0.0	0	2,974,838	0		0		0.0
WHTV-D (34)	0.0	0	1,422,914	0		0		0.0
WHTV-D.A (34)	0.0	0	3,223,491	0		0		0.0
WHTV-D.C (34)	0.0	0	822,918	0		0		0.0
WIPX-LP.C (34+)	0.0	0	1,363,051	0		0		0.0
WIPX-LP-D.C (34)	0.0	0	1,547,797	0		0		0.0
WISN-D (34)	32.6	1,858	2,692,345	0		4,182		0.2
WISN-TV-D (34)	32.6	1,858	2,692,417	0		4,182		0.2
WITI.C (33)	0.0	0	1,667,559	0		0		0.0

WITI-D (33)	0.0	0	2,941,349	0	0	0.0
WITI-D.A (33)	0.0	0	2,683,611	0	0	0.0
WITI-D.A (33)	0.0	0	2,925,849	0	0	0.0
WITI-D.A (33)	0.0	0	2,683,611	0	0	0.0
WITI-D.C (33)	0.0	0	3,144,372	0	0	0.0
WMVT-D (35)	0.0	0	2,780,738	0	0	0.0
WMVT-D (35)	0.0	0	2,778,476	0	0	0.0
WMVT-D.S (35)	0.0	0	2,256,971	0	0	0.0
WMYS-LP.A (34-)	0.0	0	615,623	0	0	0.0
WNIT-D (35)	0.0	0	1,213,543	0	0	0.0
WNIT-D (35)	0.0	0	1,215,635	0	0	0.0
WNIT-D.A (35)	0.0	0	1,256,028	0	0	0.0
WOCH-CA (41Z)	0.0	0	5,049,348	0	0	0.0
WOCH-CA.A (41Z)	0.0	0	4,458,308	0	0	0.0
WWTO-TV (35Z)	32.9	6,403	1,629,466	0	17,000	1.0
WYCC (20Z)	0.0	0	8,884,787	0	0	0.0

	Housing Units	Population
Illinois		
Cook County		
Total	2,096,121	5,376,741
1177674-D.A (33)	14,034	39,633
WWTO-TV (35Z)	1,372	4,430
DuPage County		
Total	335,621	904,161
1177674-D.A (33)	1,096	2,949
WWTO-TV (35Z)	2,829	6,911
Kane County		
Total	138,998	404,119
WWTO-TV (35Z)	1,357	3,060
Lake County		
Total	225,919	644,356
WISN-D (34)	1,858	4,182
WISN-TV-D (34)	1,858	4,182
Will County		
Total	175,524	502,266
1177674-D.A (33)	5,615	15,104
WWTO-TV (35Z)	845	2,599
Indiana		
Lake County		
Total	194,992	484,564
1177674-D.A (33)	11,672	27,641

WEDE-CA-D.A
 BDFCDTA20081014AAM
 Latitude: 41-52-44 N
 Longitude: 087-38-10 W
 ERP: 4.30 kW
 Channel: 34
 Frequency: 593.0 MHz
 AMSL Height: 625.4 m
 Elevation: 181.4 m
 Horiz. Pattern: Directional
 Vert. Pattern: Yes
 Elec Tilt: 0.0
 Prop Model: Longley/Rice
 Climate: Cont temperate
 Conductivity: 0.0050
 Dielec Const: 15.0
 Refractivity: 301.0
 Receiver Ht AG: 10.0 m
 Receiver Gain: 0 dB
 Time Variability: 10.0%
 Sit. Variability: 50.0%
 ITM Mode: Broadcast

D.L. Markley & Associates, Inc.



- ☒ WEDE-CA-D.A
- 1177674-D.A
- KQIN-D
- KQIN-D.C
- W34BZ
- W34DL
- W34DL-D.C
- W57CQ.A
- W58CO.A
- W64CQ.A
- W64CQ.C
- WCIU-TV
- WCIU-TV.A
- WCPX
- WFBN-LP-D.C
- WFLD
- WFLD.C
- WGN-TV
- WGN-TV.C
- WHTV-D
- WHTV-D.A
- WHTV-D.C
- WIPX-LP.C
- WIPX-LP-D.C
- WISN-D
- WISN-TV-D
- WITI.C
- WITI-D
- WITI-D.A
- WITI-D.A
- WITI-D.A
- WITI-D.C
- WMVT-D
- WMVT-D
- WMVT-D.S
- WMYS-LP.A
- WNIT-D
- WNIT-D
- WNIT-D.A
- WOCH-CA
- WOCH-CA.A
- WWTO-TV
- WYCC

Exhibit E-1
 Outgoing Interference Study
 WEDE-CA - Arlington Heights, Illinois
 First United, Inc.
 March, 2009

