

ENGINEERING STATEMENT  
IN SUPPORT OF A SPECIAL TEMPORARY AUTHORIZATION  
TO INCREASE ERP OF CLASS A TV STATION  
WOOK-CD, CHICAGO, ILLINOIS  
CHANNEL 4 0.810 kW 570.8 METERS C/R AMSL  
NOVEMBER 2010

This engineering statement has been prepared on behalf of KM LPTV of Chicago-13, L.L.C., licensee of digital Class A television station WOCK-CD, Chicago, Illinois and is in support of a request for a Special Temporary Authorization (STA) to increase station's effective radiated power (ERP).

At present WOCK-CD operates its analog Class A TV facility (ID number 35092) on Channel 13 (210-216 MHz) with 3 kW ERP and 542 meters antenna height above mean sea level using a directional TV antenna. Since the analog Channel 13 operation is being displaced by WREX-DT, Channel 13, Rockford, Illinois, WOCK-CD has been licensed (BLDVA-20090608ACN) to operate its digital Class A TV station on Channel 4 (66-72 MHz) with 0.3 kW ERP and 570.8 meters antenna height above mean sea level using a directional TV antenna. WOCK-CD has been ganted a STA (BSTA-20100108ADA) to operate on Channel 4 with 0.405 kW ERP and 570.8 meters antenna height above mean sea level using a directional TV antenna.

WOCK-CD is requesting an STA under the extraordinary circumstances to operate on Channel 4 with slightly higher ERP of 0.810 kW using the currently authorized directional TV antenna. No other changes to the licensed Channel 4 facilities are proposed. It's current STA with 0.405 kW ERP has not adequately addressd WOCK-CD TV service problems on its low VHF TVoperation. According to WOCK-CD the station is still having problems with providing adequate digital television service on Channel 4 within its noise limited service area. This is due to the presence of relatively high impulse noise in the Channel 4 (66-72 MHz) frequency band. In addition, it has been observed that many receive TV antennas are not adequately configured to receive

digital TV signals in the low VHF band. Receive dipole antennas need much larger elements for a more efficient capture of TV signals at low VHF bands. It is not practical to adjust most commonly used table top TV antenna elements to proper lengths for efficient tuning of Channel 4 TV signals. The “cliff” effect of digital TV reception further exacerbates this problem. At many locations a weak analog TV signal would result in a “snowy” picture and was deemed acceptable. Such locations are having difficulty in receiving digital TV pictures particularly on low VHF bands.

The attached map shows the noise limited (43 dBu) for the currently licensed and the proposed STA operation of WOCK-CD. As the map indicates the proposed STA operation would result in minimal extension of the noise limited contour with respect to the similar licensed contour; however, the proposed STA operation would provide stronger digital signals within the noise limited contour for better picture quality. As such the proposed STA operation is in the public interest since it would result in better digital TV reception for those viewers who were able to receive adequate analog TV signals but are having problems under the digital TV environment.

The attached Table I is an electromagnetic interference study conducted according to FCC OET Bulletin 69 which indicates the proposed STA operation would not cause interference to any present or proposed full-service digital TV, low power TV or TV Translator stations exceeding the Commission’s guidelines. In case of actual interference to any digital full-service TV, low power TV or TV Translator stations WOCK-CD will reduce or terminate its STA operation as appropriate.

Since the proposed STA operation exceeds the maximum power limits specified for digital VHF TV stations, WOCK-CD respectfully requests a waiver of Sections 73.6007 and 74.735(b)(1) of the Commission’s rules.

WOCK-CD is requesting a temporary relief through this STA and believes with the advent of new TV receivers and receive antennas, there would not be any need for WOCK-CD to operate at higher power than permitted under the Commission’s rules. Therefore, WOCK-CD requests the Commission to grant its proposed STA.

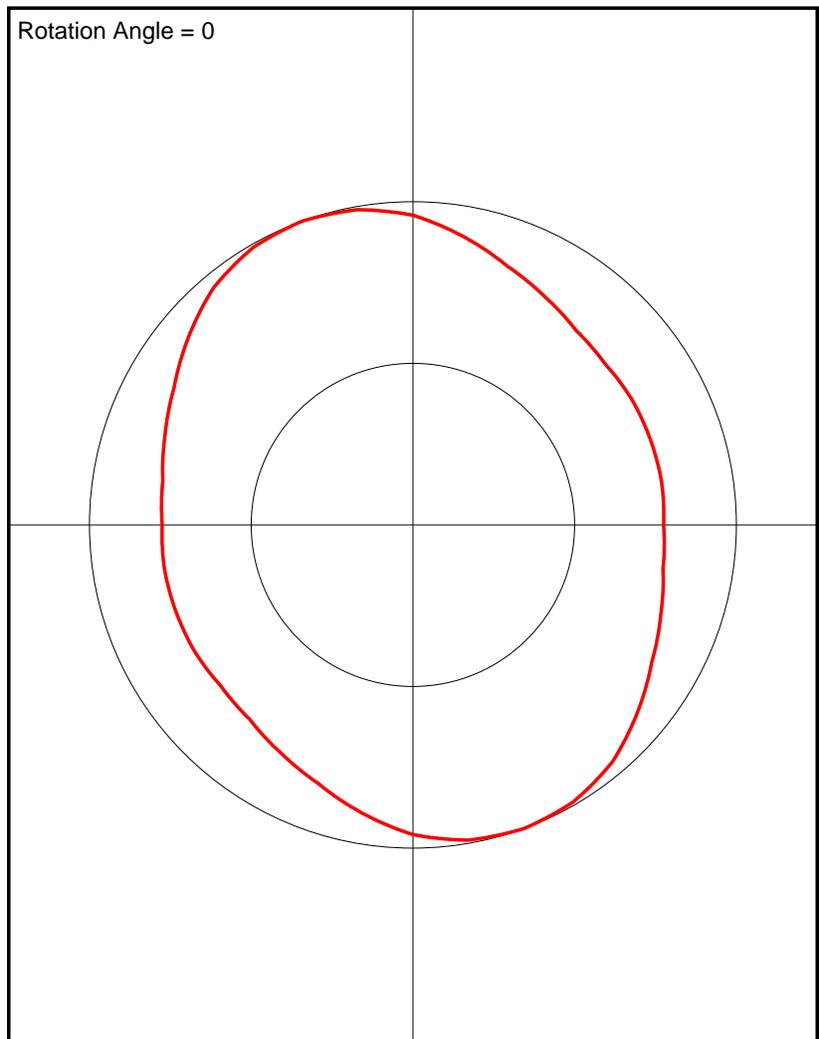
The following information provides pertinent data for the proposed WOCK-CD operation.

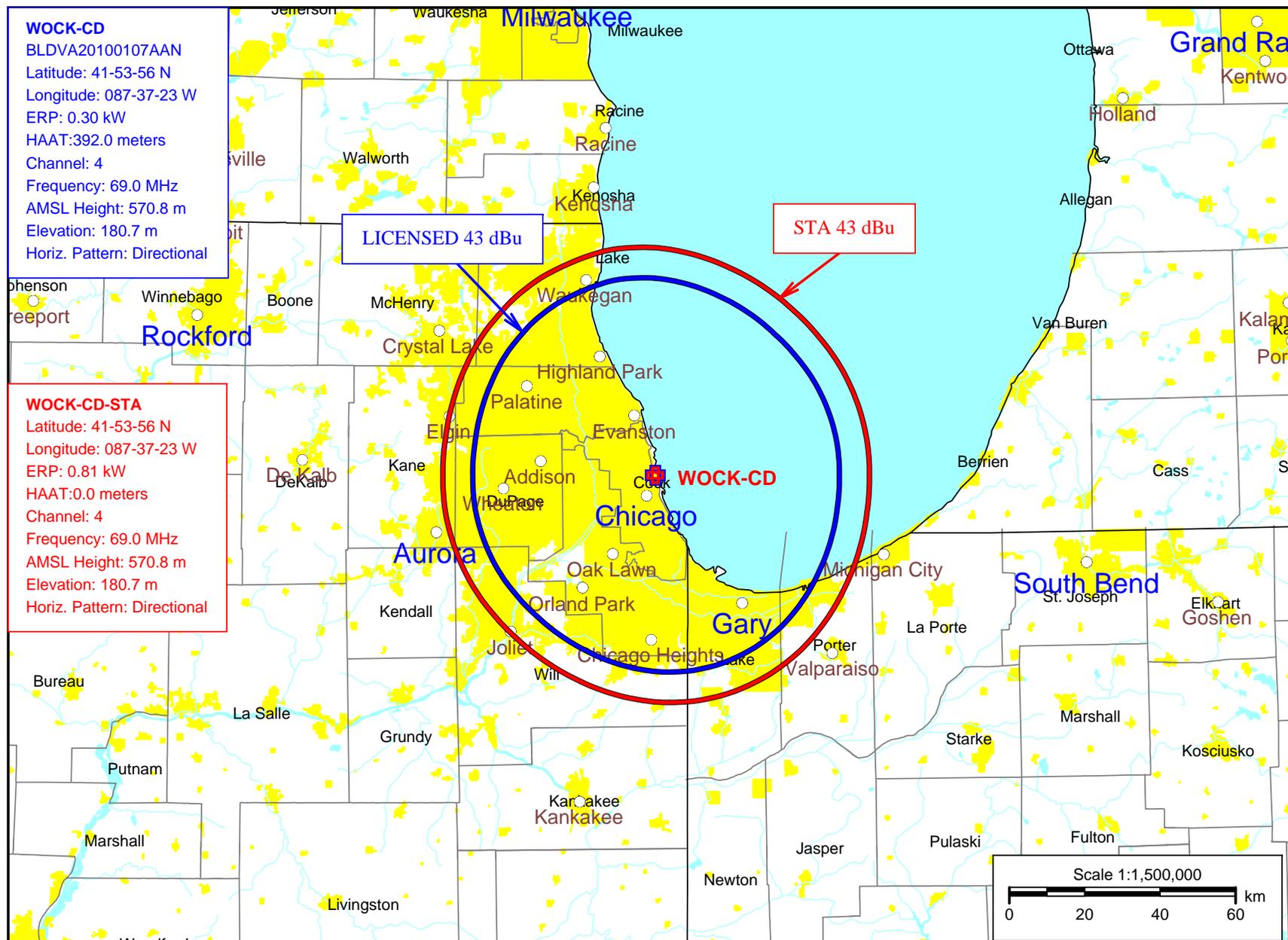
Name of the Licensee:	KM LPTV of Chicago-13, L.L.C.			
Station Location:	IL-Chicago			
Channel:	4			
Transmitter:	Type Accepted			
Antenna Type:	SCA, TVOCUSWOCK, Directional			
Antenna Coordinates:	North Latitude:	41 deg	53 min	56 sec
	West Longitude:	87 deg	37 min	23 sec
Transmitter output power:	1.0 kW			
Maximum effective radiated power (Average):	0.810 kW (-0.915 dBk)			
Elevation of the site above mean sea level:	180.7 meters			
Overall height of the tower above ground:	443.6 meters			
Height of radiation center above ground (meters):	390.1 meters			
Height of radiation center above mean sea level (meters):	570.8 meters			
Antenna Structure Registration Number:	1009013			

WOCK Antenna Pattern  
Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.958
10.0	0.905
20.0	0.852
30.0	0.815
40.0	0.785
50.0	0.775
60.0	0.780
70.0	0.780
80.0	0.780
90.0	0.775
100.0	0.785
110.0	0.815
120.0	0.852
130.0	0.905
140.0	0.958
150.0	0.990
160.0	1.000
170.0	0.990
180.0	0.958
190.0	0.905
200.0	0.852
210.0	0.815
220.0	0.785
230.0	0.775
240.0	0.780
250.0	0.780
260.0	0.780
270.0	0.775
280.0	0.785
290.0	0.815
300.0	0.852
310.0	0.905
320.0	0.958
330.0	0.990
340.0	1.000
350.0	0.990

Rotation Angle = 0





COMPUTED 43 dBu CONTOURS FOR THE LICENSED AND PROPOSED STA OPERATION OF WOCK-CD, CHICAGO, IL

TABLE I

Percent allowed new interference: 0.500  
 Percent allowed new interference to non Class A LPTV: 2.000  
 TW Census data selected 2000  
 Data Base Selected  
 /space/software/cdbs/pt\_tvdb.sff  
 TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 08-20-2010 Time: 15:07:53

Record Selected for Analysis

WOCK-CD USERRECORD-01 CHICAGO IL US  
 Channel 04 ERP 0.81 kW HAAT 391. m RCAMSL 00571 m STRINGENT MASK  
 Latitude 041-53-56 Longitude 0087-37-23  
 Status APP Zone 1 Border Site number: 01  
 Dir Antenna Make usr Model WOCK-DA Beam tilt N Ref Azimuth 0.  
 Last update Cutoff date Docket  
 Comments  
 Applicant

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility (site # 01) meets maximum height/power limits

Site number	1			
Azimuth	ERP	HAAT	43.0 dBu F(50,90)	
(Deg)	(kW)	(m)	(km)	
0.0	0.743	395.0	60.3	
45.0	0.493	395.0	56.9	
90.0	0.487	395.0	56.8	
135.0	0.703	395.0	59.8	
180.0	0.743	390.7	60.1	
225.0	0.493	389.9	56.7	
270.0	0.487	384.7	56.3	
315.0	0.703	385.4	59.4	

Contour Overlap to Proposed Station

Station  
 WHBF-TV 4 ROCK ISLAND IL BPCDT20100512AFK causes

Contour overlap to Digital LPTV station  
 WOCK-CD 4 CHICAGO IL USERRECORD01

Contour Overlap Evaluation to Proposed Station Complete

Checks to Site Number 01

Proposed facility OK to FCC Monitoring Stations  
 Proposed facility OK toward West Virginia quiet zone  
 Proposed facility OK toward Table Mountain

Proposed facility is within the Canadian coordination distance  
 Distance to border = 368.4km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

\*\*\*\*\*  
 Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
04	WOCK-CD	CHICAGO IL	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
04	WHBF-TV	ROCK ISLAND IL	239.9	CP	BPCDT	-20100512AFK
04	WTCU-LD	TRAVERSE CITY MI	355.1	CP	BNPDVL	-20090825ACF
04	W04CW	TIGERTON, ETC. WI	327.9	LIC	BLTVL	-20081016AAZ
04	KBVW-LP	WAUSAU WI	378.2	CP	BNPTVL	-20000829AFO

%%%

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
04	WHBF-TV	ROCK ISLAND IL	BPCDT	-20100512AFK

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
04	WOCK-CD	CHICAGO IL	239.9	APP	USERRECORD-01	

Total scenarios = 1

Result key: 1  
 Scenario 1 Affected station 1  
 Before Analysis

Results for: 4A IL ROCK ISLAND BPCDT 20100512AFK CP  
 HAAT 409.0 m, ATV ERP 33.7 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1765934	50258.8
not affected by terrain losses	1753108	49922.0
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

After Analysis

Results for: 4A IL ROCK ISLAND BPCDT 20100512AFK CP  
 HAAT 409.0 m, ATV ERP 33.7 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1765934	50258.8
not affected by terrain losses	1753108	49922.0
lost to NTSC IX	0	0.0
lost to additional IX by ATV	4789	308.3
lost to ATV IX only	4789	308.3
lost to all IX	4789	308.3

Potential Interfering Stations Included in above Scenario 1



KHANNA & GULL, Inc. - Consulting Engineers

04 WOCK-CD CHICAGO IL USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
04	WHBF-TV	ROCK ISLAND IL	239.9	CP	BPCDT	-20100512AFK

Total scenarios = 1

Result key: 2  
Scenario 1 Affected station 5  
Before Analysis

Results for: 4A IL CHICAGO USERRECORD01 APP  
HAAT 391.0 m, ATV ERP 0.8 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	7702321	10681.5
not affected by terrain losses	7702321	10681.5
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

#####

FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

## **ENVIRONMENTAL PROTECTION ACT**

Since WOCK-CD is requesting an STA with no change in the authorized antenna site or TV antenna the environmental concerns listed in Section 1.1307(a) of the Commission's rules are not pertinent; therefore, those issues have not been addressed.

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 0.810 kW and a radiation center of 53 meters above the roof of the rooftop of the John Hancock Building, the proposed Channel 4 WOCK-CD operation would have less than 3 microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ) RF field at 2 meters above the rooftop assuming an antenna field factor of 0.5 in the downward direction.

The Commission's guidelines for Channel 4 are 1,000  $\mu\text{W}/\text{cm}^2$  for the occupational/controlled, and 200  $\mu\text{W}/\text{cm}^2$  for the general population/uncontrolled environment.

The rooftop of the John Hancock building is locked and inaccessible to general public. The above analysis indicates that members of the public and personnel working on the ground would not be exposed to RF fields exceeding the Commission's guidelines. With respect to work performed on the rooftop, WOCK-CD will establish procedures to ensure that workers are not exposed to RF fields above the Commission's guidelines, by reducing or turning off the power, as appropriate.

For the reasons stated above, it is believed this proposal complies with Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from environmental processing.