

ENGINEERING STATEMENT  
IN SUPPORT OF AN APPLICATION FOR A  
CONSTRUCTION PERMIT  
FOR THE PROPOSED DIGITAL TV OPERATION OF  
KCWL-DT, LINCOLN, NEBRASKA  
CHANNEL 51 14.0 KW 125 METERS  
MARCH 2008

This engineering statement has been prepared on behalf of Lincoln Broadcasting, LLC, licensee of TV station KCWL-TV, Lincoln, Nebraska, in support of its application to “Flash Cut” its analog TV operation to post-transition digital TV (DTV) operation on Channel 51.

At present KCWL-TV, Facility ID Number 84453, operates its analog TV facilities on Channel 51 (692-698 MHz) with 51.4 kW effective radiated power (ERP) and 125 meters antenna height above average terrain (HAAT) using a directional TV antenna. In the Seventh Report and Order (MB Docket No. 87-268) the Commission has allotted Channel 51 for the KCWL-TV’s post-transition DTV operation with 200 kW ERP, 461 meters HAAT and a directional TV antenna. KCWL-TV is filing its application to “Flash Cut” its analog TV facility to digital and operate on Channel 51 with 14 kW ERP and 125 meters HAAT using a directional TV antenna.

The following information provides pertinent data for the proposed KCWL-DT operation.

Name of the Licensee:	Lincoln Broadcasting, LLC
Station Location:	NE-Lincoln
Channel:	51
Hours of Operation:	Unlimited
Transmitter:	Type Accepted
Antenna Type:	ERI, AL8M-51-PL, Directional
Beam Tilt:	1.75 deg

Antenna Coordinates:	North Latitude:	40 deg	51 min	10 sec
	West Longitude:	96 deg	40 min	36 sec

Transmitter output power: As required to achieve authorized ERP

Maximum effective radiated power (Average):	14.0 kW
	11.46 dBk

Height of radiation center above ground (meters):	149.5 meters
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Height of radiation center above mean sea level (meters):	499.1 meters
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Height of radiation center above average terrain (meters):	125 meters
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Antenna Structure Registration Number:	1022906
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**Response to questions for Post Transition Expedited Processing listed on the  
FCC Form 301, Section III-D-DTV Engineering**

**Question 1. (a)**

KCWL-DT will operate its DTV facility on Channel 51 as established in 47 C.F.R.  
Section 73.622.

**Question 1. (d)**

KCWL-DT is proposing to operate its post-transition facilities which are slightly different than established in Appendix B of the Seventh Report and Order (MB Docket No. 87-268). The proposed noise-limited service contour does not extend in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket 87-268. In addition, the attached electromagnetic interference study conducted according to the FCC OET Bullet 69 indicates the proposed operation of KCWL-DT on Channel 51 with 14 kW ERP and 125 meters HAAT

using a directional TV antenna will not cause impermissible interference to other DTV stations.

**Question 1. (e)**

The population within the proposed DTV service area would be 305,946 people. The predicted population defined in the new DTV Table Appendix B is 454,000 people.

**Question 2.**

The attached environmental statement demonstrates that there will not be any significant environmental impact from the proposed DTV operation in accordance with 47 C.F.R. Section 73.1307.

**Question 3.**

The attached map shows the proposed KCWL-DT contour will encompass the allotted principal community of Lincoln, Nebraska.

**Question 4.**

The proposed KCWL-DT facility complies with Section 73.1030 of the Commission's rules; therefore, notification to radio astronomy installations, radio receiving installations and FCC monitoring stations is not required.

**Question 5.**

The existing KCWL-DT tower is registered (ASR No. 1022906) by the Commission and no changes are proposed to require a change in the registration.

## OET BULLETIN 69 INTERFERENCE STUDY

Census data selected 2000

Post Transition Data Base Selected

/space/software/cdbb/tvdb.sff\_B

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 03-03-2008 Time: 16:19:41

Record Selected for Analysis

KCWL-DT USERRECORD-01 LINCOLN NE US

Channel 51 ERP 14. kW HAAT 125. m RCAMSL 00499 m

Latitude 040-51-10 Longitude 0096-40-36

Status APP Zone 2 Border

Dir Antenna Make usr Model VIC\_KCWL Beam tilt N Ref Azimuth 170.

Last update Cutoff date Docket

Comments

Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth	ERP	HAAT	41.0 dBu F(50,90)
(Deg)	(kW)	(m)	(km)
0.0	1.302	127.0	44.4
45.0	1.149	148.3	45.3
90.0	5.244	124.8	51.1
135.0	10.780	112.3	53.5
180.0	13.666	117.3	55.0
225.0	7.949	132.4	53.6
270.0	3.334	118.3	48.5
315.0	0.793	118.4	41.3

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

KCWL-DT 51 LINCOLN NE USERRECORD01

and station

KHANNA & GUILL, Inc. – Consulting Engineers

SHORT TO: KOWH      51 LINCOLN      NE BPCT      19960724LG

040-47-38    0097-14-22

Req. separation 223.7 Actual separation 47.9 Short 175.8 km

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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Start of Interference Analysis

Proposed Station

Channel	Call	City/State	ARN
51	KCWL-DT	LINCOLN NE	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
51	KPXE	KANSAS CITY MO	274.5	LIC	BLCDDT -20040406AAC

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Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application Ref. No.
51	KPXE	KANSAS CITY MO	BLCDDT -20040406AAC

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
51	KCWL-DT	LINCOLN NE	274.5	APP	USERRECORD-01

Proposal causes no interference

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Analysis of Interference to Affected Station 2

Analysis of current record

Channel	Call	City/State	Application Ref. No.
51	KCWL-DT	LINCOLN NE	USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
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KHANNA & GUILL, Inc. – Consulting Engineers

51 KPXE KANSAS CITY MO 274.5 LIC BLCDT -20040406AAC

Total scenarios = 1

Result key: 1

Scenario 1 Affected station 2

Before Analysis

Results for: 51A NE LINCOLN USERRECORD01 APP

HAAT 125.0 m, ATV ERP 14.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	306919	7256.4
not affected by terrain losses	306453	7224.1
lost to NTSC IX	0	0.0
lost to additional IX by ATV	507	96.8
lost to ATV IX only	507	96.8
lost to all IX	507	96.8

Potential Interfering Stations Included in above Scenario 1

51A MO KANSAS CITY BLCDT 20040406AAC LIC

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FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

## **ENVIRONMENTAL PROTECTION ACT**

Since KCWL-DT will be using its currently licensed analog TV tower (ASR No. 1022906), for the DTV operation the environmental concerns listed in Section 1.1307(a) of the Commission's rules are not pertinent; therefore, those issues have not been addressed.

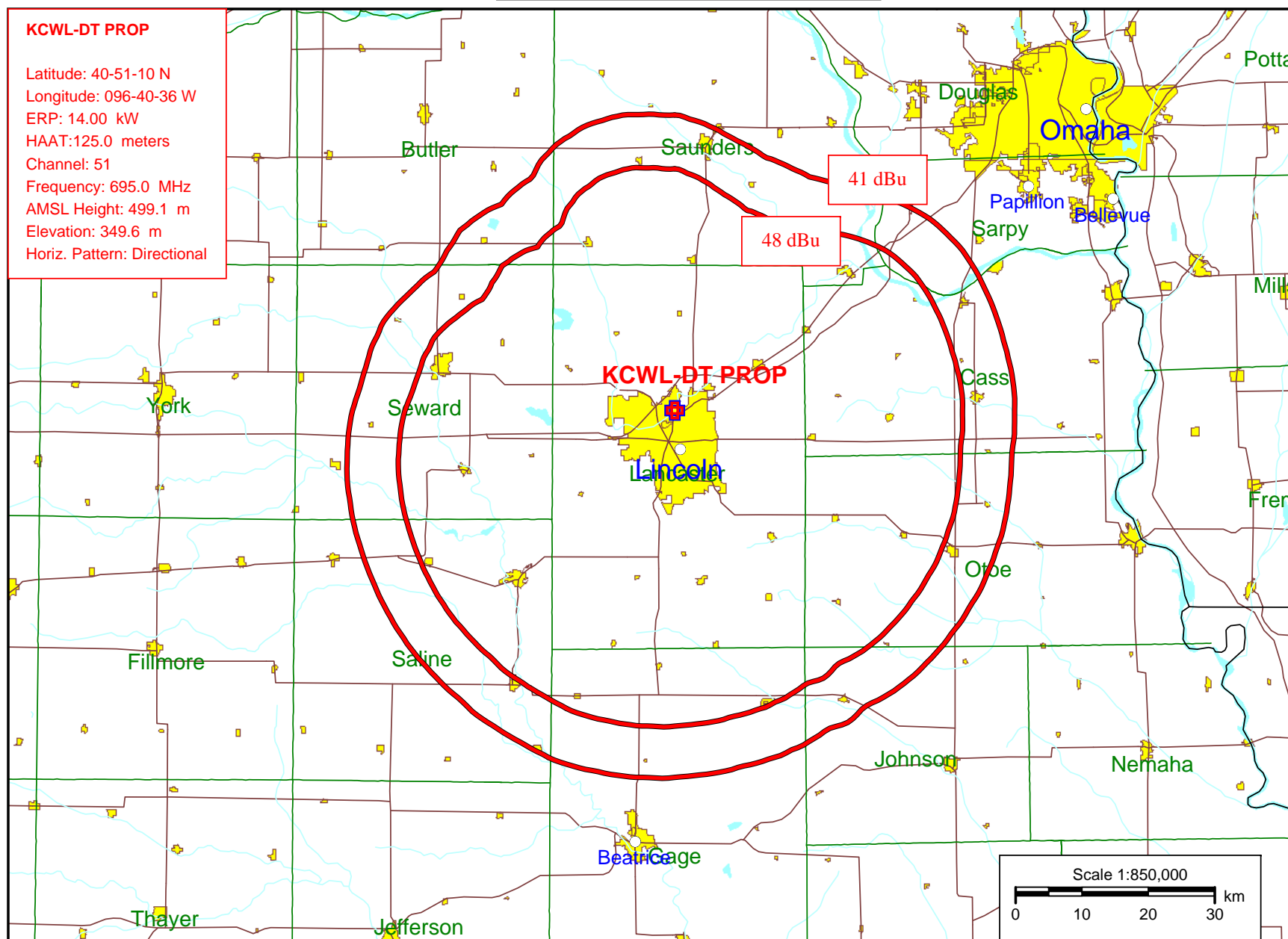
An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 14 kW and a radiation center of 149.5 meters above ground level, the proposed Channel 51 DTV operation would have approximately 5.4 microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ) RF field at 2 meters above the base of tower assuming an antenna field factor of 0.5 in the downward direction.

The Commission's guidelines for the Channel 51 TV are  $2,306 \mu\text{W}/\text{cm}^2$  for the occupational/controlled, and  $4613 \mu\text{W}/\text{cm}^2$  for the general population/uncontrolled environment.

The above analysis indicates that members of the public and personnel working around the KCWL-DT tower would not be exposed to RF fields exceeding the Commission's guidelines. With respect to work performed on the tower, KCWL-DT 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.





COMPUTED COVERAGE CONTOURS FOR THE PROPOSED DTV OPERATION OF KCWL-DT, LINCOLN, NEBRASKA