Kessler and Gehman Associates
Consultants • Broadcast • Wireless

DIGITAL LPTV CONSTRUCTION PERMIT MINOR MODIFICATION APPLICATION

CALL SIGN: K17OO-D
FCC File No.: BNPDTL-20090825AWE
FACILITY ID: 182499
LOCATION: Sioux Falls, SD

Prepared For:

Roseland Broadcasting, Inc.
888c 8th Avenue
Suite 733
New York, NY 10019

Prepared By:

Ryan Wilhour
Consulting Engineer
Kessler and Gehman Associates
507 NW 60th Street, Suite D
Gainesville, FL 32607-2055
352-332-3157 Extension 3
ryan@kesslerandgehman.com
www.kesslerandgehman.com

September 27, 2022

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Roseland Broadcasting, Inc. is the licensee of a digital low power television broadcast station having call sign K17OO-D. K17OO-D has a construction permit[1] to operate on channel 17 using an omni-directional antenna with an ERP of 3kW at a height of 373.3m AMSL on antenna structure number 1051548. It is proposed to modify the construction permit to

- replace the Jampro JA/LS-OM-16 omnioid antenna with an Scala CL-1469B directional antenna,
- decrease the ERP from 3kW to 50W,
- increase the antenna height AMSL by 7.3m
- change the transmitter site from
    - 42-42-15.0 N 89-59-42.0 W (NAD 83) to
    - 43-0-33.9 N 89-43-45.3 W (NAD 83)

No other changes are proposed.

2.0 MINOR MODIFICATION CLASSIFICATION

Pursuant to § 74.787(b) the proposed changes in Section 1.0 are considered "minor" since there is there is

- no change in frequency output proposed,
- no change in location where the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station,
- or no change in transmitting antenna location greater than 30 miles (48 kilometers) from the reference coordinates of the existing station's antenna location.

[1] FCC File No.: BNPDTL-20090825AWE

3.0 STATION TRANSMITTER LOCATION AND TOWER ELEVATION

It is proposed to move K17OO-D from its permitted location to an existing tower not registered with the FCC. TOWAIR has made the following determination regarding FCC tower registration:

- "Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided."

The instant application does not propose to increase or modify the existing support structure. Appendix B demonstrates that the proposed contour encroaches within some portion of the permitted contour.

4.0 ALLOCATION ANALYSIS

Appendix A are the summarized results from TVStudy V2.2.5 which illustrate that there are no interference failures to other facilities.

5.0 RADIO FREQUENCY RADIATION (RFR) COMPLIANCE.

A theoretical analysis has been conducted of the human exposure to radio frequency radiation ("RFR") using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain extraction is compiled from the support structure site, if the support structure is on a rooftop with no higher elevations (e.g., elevator shaft) then flat terrain is compiled. Terrain is extracted using radial lengths of 0.25 miles in 0.001-mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel

frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360-degree radials for each 0.001-mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

Appendix C is an RFR analysis which demonstrates that the peak RFR exposure is less than 5% of the most restrictive permissible exposure threshold standing anywhere at ground level and in any proximity to the proposed support structure. Pursuant to OET Bulletin 65, since the proposed operation does not exceed 5% of the most restrictive permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR and other sources of RFR need not be taken into consideration for a net effect. The instant application is compliant with the FCC limits for human exposure to RFR and thus is excluded from further environmental processing.

6.0 CERTIFICATION

The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed September 27, 2022.

Kessler and Gehman Associates, Inc.

Ryan Wilhour
Consulting Engineer

APPENDIX A – TVStudy V2.2.5 Allocation Analysis

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Study created: 2022.09.27 10:53:37

Study build station data: LMS TV 2022-09-27

    Proposal: K1700 D17 LD CP SIOUX FALLS, SD
 File number: Alaska Ave
 Facility ID: 182499
Station data: User record
   Record ID: 1162
     Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included

Stations potentially affected by proposal:
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IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WTVO	D16	DT	LIC	ROCKFORD, IL	BLCDT20021024AAS	92.3 km
No	W16DU-D	D16	LD	LIC	BLOOMINGTON, WI	BLANK0000062263	99.7
No	WYTU-LD	D16	LD	LIC	MILWAUKEE, WI	BLANK0000084618	146.5
No	K17MH-D	D17	LD	LIC	CEDAR FALLS, IA	BLANK0000177243	253.0
No	KWQC-TV	D17	DT	LIC	DAVENPORT, IA	BLANK0000097891	173.8
No	KDIT-CD	D17-	DC	LIC	Des Moines, IA	BLANK0000199021	344.7
No	KDIT-LD	D17	LD	LIC	FORT DODGE, IA	BLANK0000176977	363.4
No	WLCF-LD	D17	LD	LIC	DECATUR, IL	BLANK0000121247	347.4
No	W17EH-D	D17	LD	LIC	QUINCY, IL	BLANK0000169061	365.8
No	W17EH-D	D17	LD	CP	QUINCY, IL	BLANK0000185140	362.9
No	WYIN	D17	DT	LIC	GARY, IN	BLEDT20040206AAA	266.2
No	WPBI-LD	D17	LD	LIC	LAFAYETTE, IN	BLANK0000088160	375.5
No	WOTV	D17	DT	LIC	BATTLE CREEK, MI	BLANK0000141782	350.8
No	WMNN-LD	D17	LD	LIC	LAKE CITY, MI	BLANK0000118076	380.4
No	K17MX-D	D17	LD	LIC	FROST, MN	BLANK0000062750	345.7
No	KMWE-LD	D17	LD	LIC	SAINT CLOUD, MN	BLANK0000163947	390.5
No	KMWE-LD	D17	LD	APP	SAINT CLOUD, MN	BLANK0000177263	390.5
No	WEAU	D17	DT	LIC	EAU CLAIRE, WI	BLANK0000120880	208.7
No	WGBD-LD	D17	LD	LIC	GREEN BAY, WI	BLANK0000068358	209.0
No	WBME-CD	D17	DC	LIC	MILWAUKEE, WI	BLANK0000086894	146.5
No	W17DZ-D	D17	LD	LIC	SISTER BAY, WI	BLANK0000086983	325.0
No	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	246.7
No	KRIN	D18	LD	APP	WATERLOO, IA	BDRTEDT20120604AFO	90.8
No	WMEU-CD	D18	DC	LIC	CHICAGO, IL	BLANK0000086889	212.7
No	WMEU-CD	D18	DC	CP	CHICAGO, IL	BLANK0000196962	212.3
No	DWMKB-LP	D18z	LD	APP	Rochelle, IL	BLANK0000054707	120.6
No	WLUK-TV	D18	DT	LIC	GREEN BAY, WI	BLANK0000199689	209.0
No	WMSN-TV	D18	DT	LIC	MADISON, WI	BLANK0000113879	16.6

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No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

    Channel: D17
       Mask: Full Service
   Latitude:  43  0 33.90 N (NAD83)
  Longitude:  89 43 45.30 W
Height AMSL: 381.0 m (Adjusted based on actual ground elevation calculation)
       HAAT: 65.1 m
   Peak ERP: 0.050 kW
    Antenna: Scala CL-1469B 150.0 deg
Elev Pattrn: Generic

49.0 dBu contour:
Azimuth      ERP       HAAT   Distance
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  0.0 deg  0.000 kW    82.2 m    1.8 km
 45.0      0.000       61.5      1.8
 90.0      0.000       69.7      1.8
135.0      0.039       78.2     13.3
180.0      0.019       50.6      9.2
225.0      0.000       69.3      1.8
270.0      0.000       14.7      1.8
315.0      0.000       95.2      1.8

Distance to Canadian border: 546.5 km

Distance to Mexican border: 1800.5 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 97.0 degrees   Distance: 310.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 261.4 degrees   Distance: 1324.8 km

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area


Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%


---- Below is IX received by proposal Interim at 809 Alaska  ----

Proposal receives 61.40% interference from scenario 1
No IX check failures found.
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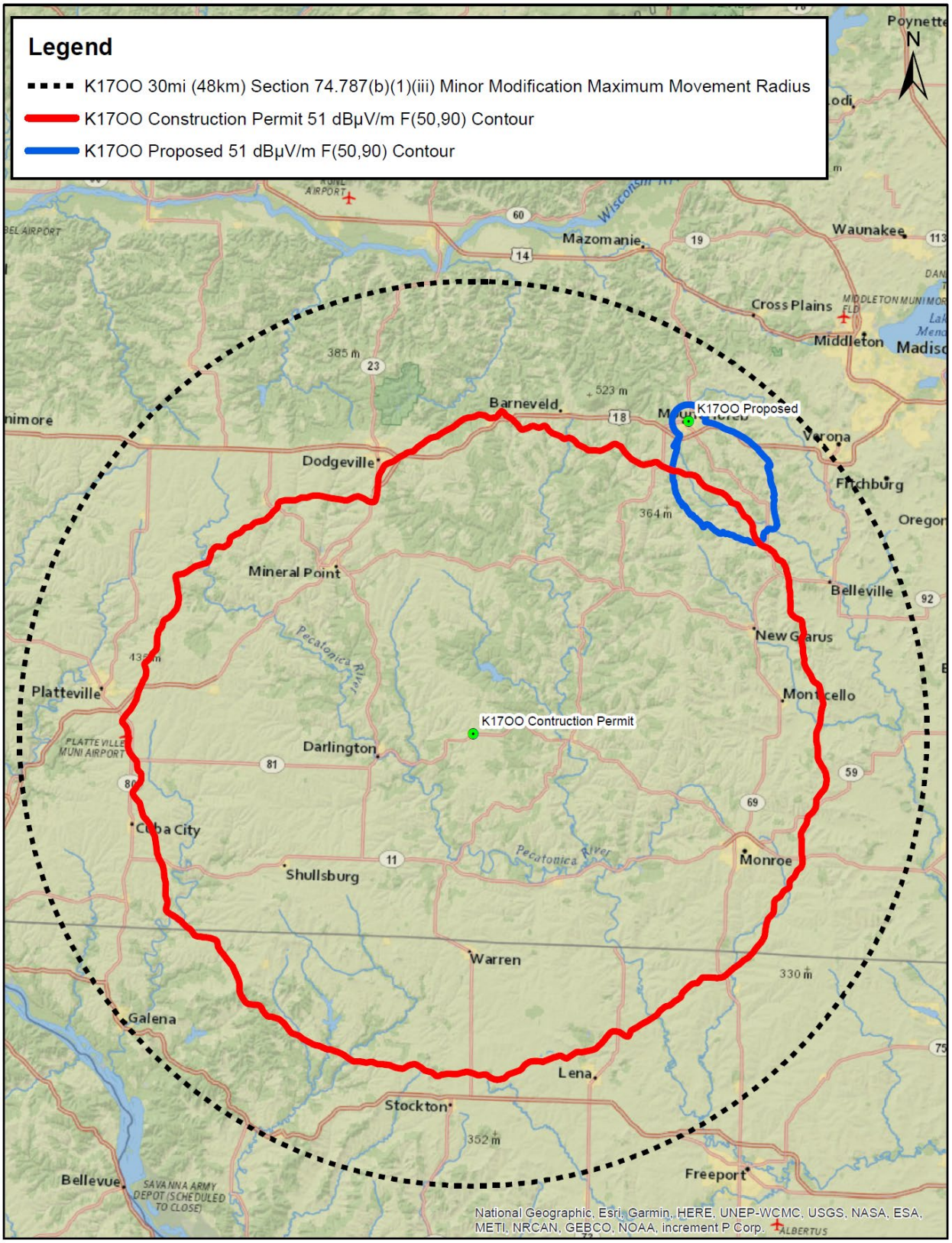
APPENDIX B – 51dBμ F(50,90) Permitted and Proposed Contour



APPENDIX C – Far Field Exposure to RF Emissions