

**TECHNICAL STATEMENT  
IN SUPPORT OF A REQUEST FOR  
SPECIAL TEMPORARY AUTHORIZATION  
KTIV 320 KW-DA 516.0 M HAAT CH. 41  
SIOUX CITY, IOWA**

**INTRODUCTION**

KTIV License, LLC (the “Applicant”), the licensee of digital television station KTIV Channel 41, Facility ID No. 66170, requests special temporary authorization (STA) to operate KTIV on Channel 41 with parameters at variance from those specified on the current station license using an interim antenna. It is essential that KTIV employ a different antenna during the replacement of its licensed antenna system for post-auction operation on Channel 14. The interim antenna will be side mounted below the licensed antenna height and will operate with reduced effective radiated power (ERP). The technical operating parameters for the proposed STA facility are described in greater detail below.

**INTERIM ANTENNA AND OPERATING PARAMETERS**

An STA will enable KTIV to continue operations on Channel 41 during the construction phase of its transition to Channel 14. The antenna to be employed is a directional Dielectric Model TFU-24WB/VP-R C160 with 0.5 degrees electrical beam tilt. This antenna is configured for elliptical polarization such that the maximum horizontal ERP will be 320 kW and the maximum vertical ERP will be 103 kW. It is also designed so that the azimuth pattern of the vertical component will not exceed the horizontal in any direction. This interim antenna will be shared with two other reassigned television broadcast stations that are also licensed to Sioux City, namely KPTH Facility ID 77451 and KMEG Facility ID 39665.

The height of the antenna radiation center will be 500.5 meters above ground level (AGL) or 906.8 meters above mean sea level (AMSL). Because the proposed interim facility will operate with technical parameters that are significantly less than the licensed facility, no extension of the existing coverage area will result in any direction. The *TVStudy* summary report provided in [Figure 1](#) demonstrates that no interference beyond 0.5 percent will be caused to the technical parameters of any other station.



## ENVIRONMENTAL IMPACT

The proposed STA facility for KTIV does not exceed the criteria outlined in 47 CFR § 1.1307(a) for certain types of facilities that may significantly affect the environment. More specifically, the collocation of KTIV's interim antenna on an existing FCC registered tower, which was constructed after March 16, 2001, is not expected to exceed the conditions outlined in 47 CFR Part 1, App. B, § IV.A.<sup>1</sup> With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this application seeks authority to operate an interim facility in full compliance with those guidelines. The technical parameters for the interim facility are listed below.

|                           |                                     |
|---------------------------|-------------------------------------|
| Frequency :               | 632 - 638 MHz (UHF Channel 41)      |
| Antenna Type:             | TFU-24WB/VP-R C160                  |
| Antenna Polarization:     | Elliptical                          |
| Effective Radiated Power: | 320 kW(H); 103 kW(V)                |
| Location coordinates:     | 42-35-12.0 N, 96-13-19.0 W (NAD83)  |
| Site elevation:           | 406.3 meters AMSL                   |
| Antenna Height:           | 500.5 meters AGL; 516.0 meters HAAT |
| Overall tower height:     | 605.9 meters AGL                    |
| FCC ASRN:                 | 1057963; Constructed 02/22/2007     |

Using the methodology for predicting power density levels for television broadcast antennas outlined in *FCC OET Bulletin No. 65, Edition 97-01*, (OET-65), the proposed facility is calculated to produce a maximum power density of 2.27  $\mu\text{W}/\text{cm}^2$  at points 2 meters above ground (approximate human head height). This exposure level was determined using 20 percent antenna relative field, which is a conservative value for a UHF antenna. The maximum exposure limits applicable to Channel 41, as determined in accordance with 47 CFR

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<sup>1</sup> 47 CFR Part 1, App. B, § IV.A. "An antenna may be mounted on an existing tower constructed after March 16, 2001 without such collocation being reviewed through the Section 106 process set forth in the NPA, unless: 1. The Section 106 review process for the existing tower set forth in 36 CFR part 800 (including any applicable program alternative approved by the Council pursuant to 36 CFR 800.14) and any associated environmental reviews required by the FCC have not been completed; or, 2. The mounting of the new antenna will result in a substantial increase in the size of the tower as defined in Stipulation I.E, above; or, 3. The tower as built or proposed has been determined by the FCC to have an adverse effect on one or more historic properties, where such effect has not been avoided or mitigated through a conditional no adverse effect determination, a Memorandum of Agreement, a Programmatic Agreement, or otherwise in compliance with Section 106 and the NPA; or, 4. The collocation licensee or the owner of the tower has received written or electronic notification that the FCC is in receipt of a complaint from a member of the public, an Indian Tribe, a SHPO or the Council, that the collocation has an adverse effect on one or more historic properties."



§ 1.1310 for uncontrolled and controlled situations, are 421  $\mu\text{W}/\text{cm}^2$  and 2,107  $\mu\text{W}/\text{cm}^2$  respectively. Because the worst-case exposure level determined for the proposed facility is not more than 5% of those guidelines and considering that the existing tower location is fenced and suitable warning signs are posted, no further showing of compliance is necessary. Accordingly, this application complies with the RF exposure limits and is categorically excluded from environmental processing by 47 CFR § 1.1306.

Steps to limit exposure to persons authorized to access the transmitter site will be consistent with the appropriate recommendations in OET-65. All maintenance and other related work to be performed at elevations higher than 2 meters above ground will be coordinated to prevent exposure to RF fields in excess of the controlled limit. Such preventative steps shall include reducing power or shutting down the facility.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Scott Turpie', written over a horizontal line.

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Attachments:  
Figure 1 – Summary of TV Study Results

## FIGURE 1

### Analysis Summary

#### TVSTUDY, VERSION 2.2.5.

Study created: 2018.08.21 17:23:59

Study build station data: LMS TV 2018-08-20

Proposal: KTIV D41 DT STA SIOUX CITY, IA  
File number: 201821-STA-41  
Facility ID: 66170  
Station data: User record  
Record ID: 238  
Country: U. S.  
Zone: II

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

| IX  | Call    | Chan | Svc | Status | City, State       | File Number       | Distance |
|-----|---------|------|-----|--------|-------------------|-------------------|----------|
| No  | KCPD-LP | N26+ | TX  | LIC    | SIOUX FALLS, SD   | BLTTL20011029AAL  | 112.6 km |
| No  | KCWS-LP | N27  | TX  | APP    | SIOUX FALLS, SD   | BLANK0000054526   | 113.6    |
| No  | K40LA-D | D40  | LD  | LIC    | JACKSON, MN       | BLDTL20100428ABB  | 150.7    |
| No  | K4ONS-D | D40  | LD  | CP     | SPENCER, SD       | BNPDTL20100510AII | 164.2    |
| No  | KGCW    | D41  | DT  | LIC    | BURLINGTON, IA    | BLCDT20081120ABD  | 476.2    |
| Yes | K4IDD-D | D41  | LD  | LIC    | DES MOINES, IA    | BLDTL20101209AJ0  | 227.6    |
| No  | KMCI-TV | D41  | DT  | LIC    | LAWRENCE, KS      | BLCDT20110421AAR  | 425.5    |
| No  | K4INC-D | D41  | LD  | CP     | ALEXANDRIA, MN    | BNPDTL20100505AKQ | 370.5    |
| No  | K4IMF-D | D41  | LD  | LIC    | GRANITE FALLS, MN | BLDTT20110824ACN  | 251.9    |
| No  | K4IEG-D | D41  | LD  | LIC    | JACKSON, MN       | BLDTL20091204ADA  | 150.7    |
| No  | K4IMP-D | D41  | LD  | CP     | ROCHESTER, MN     | BNPDTL20100604ACV | 342.6    |
| No  | K4IIZ-D | D41  | LD  | LIC    | ST. JAMES, MN     | BLDTT20090813AAK  | 214.1    |
| Yes | KQLP-LD | D41  | LD  | LIC    | LINCOLN, NE       | BLANK0000004411   | 190.8    |
| No  | K42LR-D | D42  | LD  | CP     | RUSHMORE, MN      | BNPDTL20100510AIA | 122.0    |
| No  | KAUN-LP | N42  | TX  | LIC    | SIOUX FALLS, SD   | BLTTL1988052711   | 113.6    |
| No  | KCWS-LP | N44  | TX  | LIC    | SIOUX FALLS, SD   | BLTTL19901218JK   | 113.6    |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D41  
Latitude: 42 35 12.00 N (NAD83)  
Longitude: 96 13 19.00 W  
Height AMSL: 906.8 m  
HAAT: 516.0 m  
Peak ERP: 320 kW  
Antenna: DIE TFU-24WB/VP-R C160 176.0 deg

Elev Pattern: Generic  
Elec Tilt: 0.50

41.3 dBu contour:

| Azimuth | ERP    | HAAT    | Distance |
|---------|--------|---------|----------|
| 0.0 deg | 126 kW | 521.0 m | 96.1 km  |
| 45.0    | 78.7   | 491.8   | 90.2     |
| 90.0    | 235    | 501.8   | 100.0    |
| 135.0   | 318    | 524.1   | 104.5    |
| 180.0   | 303    | 530.6   | 104.5    |
| 225.0   | 311    | 514.8   | 103.6    |
| 270.0   | 215    | 529.5   | 101.4    |
| 315.0   | 62.5   | 514.1   | 89.9     |

Distance to Canadian border: 685.6 km

Distance to Mexican border: 1497.1 km

Conditions at FCC monitoring station: Grand Island NE  
Bearing: 225.4 degrees Distance: 260.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 253.2 degrees Distance: 797.7 km

Study cell size: 2.00 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%

No IX check failures found.