

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

7.1.	Channel: 10
7.2.	Zone: <input type="radio"/> I <input checked="" type="radio"/> II <input type="radio"/> III
7.3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 35 Minutes 58 Seconds 08 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 95 Minutes 36 Seconds 55 <input checked="" type="radio"/> West <input type="radio"/> East
7.4.	Antenna Structure Registration Number: 1010985 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
7.5.	Antenna Location Site Elevation Above Mean Sea Level: 196 meters
7.6.	Overall Tower Height Above Ground Level: 581.8 meters
7.7.	Height of Radiation Center Above Ground Level: 530.5 meters
7.8.	Height of Radiation Center Above Average Terrain: 542.3 meters
7.9.	Maximum Effective Radiated Power (average): 9.46 kW
7.10.	Antenna Specifications: <input type="radio"/> Nondirectional <input checked="" type="radio"/> Directional a. Manufacturer DIE Model THV-5A10-R C170 SM b. Electrical Beam Tilt: 0.5 degrees <input type="checkbox"/> Not Applicable c. Mechanical Beam Tilt: degrees toward azimuth degrees True <input checked="" type="checkbox"/> Not Applicable d. Polarization: <input checked="" type="radio"/> Horizontal <input type="radio"/> Circular <input type="radio"/> Elliptical Directional Antenna Relative Field Values: Rotation (Degrees): <input type="checkbox"/> No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	0.938	10	0.923	20	0.914	30	0.913	40	0.920	50	0.935
60	0.954	70	0.975	80	0.993	90	1.000	100	0.989	110	0.953
120	0.888	130	0.793	140	0.672	150	0.535	160	0.396	170	0.276
180	0.205	190	0.195	200	0.209	210	0.211	220	0.197	230	0.199
240	0.257	250	0.369	260	0.507	270	0.646	280	0.771	290	0.871
300	0.943	310	0.984	320	1.000	330	0.995	340	0.979	350	0.958
Additional Azimuths		26	0.912	186	0.193	206	0.212	226	0.193	322	1.000

8.	Please explain in detail the "extraordinary circumstances" which warrant temporary operations at variance from the Commission's Rules. In addition, please specify 1) the specific rules and/or policies from which the applicant seeks temporary relief; 2) how the public interest will be furthered by grant; and 3) the expected duration of the STA and the licensee's plan for restoration of licensed operation. If requesting variance with other than authorized technical facilities, please specify the exact facilities sought	[Exhibit 21]
9.	Anti-Drug Abuse Act Certification. Applicant certifies that neither applicant nor any party to the application is subject to denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862.	<input checked="" type="radio"/> Yes <input type="radio"/> No

I certify that I have prepared Engineering Data on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name RICHARD H. MERTZ	Relationship to Applicant (e.g., Consulting Engineer) CONSULTANT	
Signature	Date (mm/dd/yyyy) 07/20/2009	
Mailing Address CAVELL, MERTZ & ASSOCIATES, INC. 7839 ASHTON AVENUE		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20109 -
Telephone Number (No dashes or parentheses, include area code) 7033929090	E-Mail Address (if available) RMERTZ@CAVELLMERTZ.COM	

I hereby certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations.

Typed or Printed Name of Person Signing STEPHEN P. GIBSON	Typed or Printed Title of Person Signing VICE PRESIDENT
Signature	Date (mm/dd/yyyy)

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Exhibits

Exhibit 21**Description:** EXHIBIT 21EXHIBIT 21-EXPLANATION REGARDING REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Attachment 21

Description
KTUL STA Exhibit 21

Engineering Statement
REQUEST FOR SPECIAL TEMPORARY AUTHORIZATION
prepared for
KTUL, LLC.
KTUL(TV) Tulsa, Oklahoma
Facility ID 35685
Ch. 10 9.46 kW (MAX-DA) 542.3 m

KTUL, LLC. (“*KTUL*”) is the licensee of digital KTUL(TV), Channel 10, Tulsa, Oklahoma (see BLCDDT-20030519ADL), and permittee of maximized post-transition digital facility on Channel 10 (see BPCDDT-20080620AGA), granted on December 19, 2008. Given the recent reception problems experienced by digital VHF stations, *KTUL* herein requests an increase in the station effective radiated power (“ERP”) for an interim time until the equipment for the maximized facility is received and installed. Expedited processing of the instant request is hereby respectfully requested on behalf of the applicant.

The logistics of equipment procurement and delivery do not make it possible to upgrade to the full 15 kW ERP immediately for post-transition operation at this time. However, the existing transmitting equipment will permit operation at an interim, intermediate power level of 9.46 kW ERP. Other technical parameters for the proposed operation are provided in the attached **Exhibit 21 – Table I** and in the FCC STA Request Form “tech box”.

Exhibit 21 - Figure 1 provides a coverage contour comparison. As demonstrated therein, the resulting coverage contour is greater than the 6.9 kW licensed facility referenced above, and does not exceed the maximization contour recently authorized. Further, the proposed STA facility complies with the Commission’s 0.5 percent new interference limit in that no new interference in excess of five percent is caused. See **Exhibit 21 – Table II**.

The antenna for the proposed STA facility is the existing, licensed Dielectric THV-5A10-R C170 SM antenna, which is directional in the horizontal plane. **Exhibit 21 - Figure 1** also provides the proposed facility’s principal community coverage contour. As demonstrated therein, the principal community of Tulsa, Oklahoma is predicted to receive the enhanced signal level of 43 dBμ as required in §73.625(a) of the Commission’s Rules.

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The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET-65"). OET-65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310 of the Commission's Rules. Under the present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET-65. Based on that methodology, and as demonstrated in the following, the proposed STA operation will comply with the cited adopted guidelines.

OET-65's formula for television transmitting antennas is based on the NTSC transmission standards, where the average power is normally much less than the peak power. For the DTV facility in the instant proposal, the peak-to-average ratio is different than the NTSC ratio. The DTV ERP figure herein refers to the *average* power level. The formula used for calculating DTV signal density in this analysis is essentially the same as equation (10) in OET-65:

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

S	=	power density in microwatts/cm ²
ERP	=	total (average) ERP in Watts
F	=	relative field factor
D	=	distance in meters

The installed authorized KTUL(TV) antenna will be employed for the proposed STA post-transition operation. It has a center of radiation 530.5 meters above ground level. A "worst-case" relative field value of 1.000 is assumed for purposes of the calculation. The "uncontrolled/general population" limit specified in §1.1310 for Channel 10 (center frequency 195 MHz) is 200 µW/cm².

Using this formula, the above inputs, the proposed facility would contribute a maximum power density of 1.13 µW/cm² at two meters above ground, or 0.57 percent of the general population/uncontrolled limit. At ground level locations away from the base of the tower, the calculated RF power density is lower, due to the increasing distance from the transmitting antenna. If the antenna vertical pattern were utilized in the calculations, the calculated exposure

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would be even lower. Thus, the proposed facility complies with §1.1307(b) of the Commission's Rules regarding exposure to radiofrequency radiation.

§1.1307(b)(3) states that facilities at locations with multiple transmitters (such as the case at hand) are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent. Since the instant situation meets the five percent exclusion test at all ground level areas, the impact of the any other facilities using this site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be a factor at or near ground level as defined under §1.1307(b).

As demonstrated herein, excessive levels of RF energy attributable to the proposal will not be caused at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower site access will continue to be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will continue to be posted.

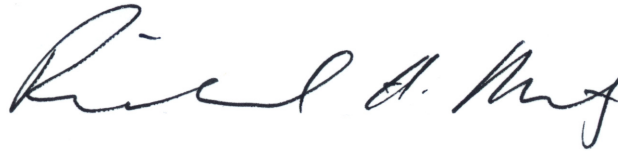
With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will continue to be employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

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Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under §1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.

Certification

The undersigned hereby certifies that the foregoing statement and exhibits were prepared by him or under his direction, and that it is true and correct to the best of his knowledge and belief. Mr. Mertz is a principal in the firm of *Cavell, Mertz & Associates, Inc.*, holds a Bachelor of Science degree from Oglethorpe University, and has submitted numerous engineering exhibits to the Federal Communications Commission. His qualifications are a matter of record with that agency.



Richard H. Mertz
July 20, 2009

Cavell, Mertz & Associates, Inc.
7839 Ashton Avenue
Manassas, Virginia 20109
703-392-9090

Attachments

Exhibit 21 – Table I	Proposed Operating Parameters
Exhibit 21 – Figure 1	Coverage Contour Comparison
Exhibit 21 – Table II	Interference Study Results

Exhibit 21-Table I
PROPOSED OPERATING PARAMETERS
 prepared for
KTUL, LLC.
 KTUL(TV) Tulsa, Oklahoma
 Ch. 10 9.46 kW (MAX-DA) 542.3 m

Site Coordinates	35° 58' 08" N 95° 36' 55" W (NAD-27)
Antenna Structure Registration Number	1010985
Radiation Center	726.5 meters above mean sea level 542.3 meters above average terrain 530.5 meters above ground level
Effective Radiated Power	9.46 kilowatts
Antenna	Dielectric THV-5A10-R C170 SM Antenna Id: 42996

Directional Antenna Relative Field Pattern
 (considering pattern rotation)

Azimuth <u>(°T)</u>	Relative <u>Field</u>	Azimuth <u>(°T)</u>	Relative <u>Field</u>
0	0.938	190	0.195
10	0.923	200	0.209
20	0.914	206	0.212
26	0.912	210	0.211
30	0.913	220	0.197
40	0.920	226	0.193
50	0.935	230	0.199
60	0.954	240	0.257
70	0.975	250	0.369
80	0.993	260	0.507
90	1.000	270	0.646
100	0.989	280	0.771
110	0.953	290	0.871
120	0.888	300	0.943
130	0.793	310	0.984
140	0.672	320	1.000
150	0.535	322	1.000
160	0.396	330	0.995
170	0.276	340	0.979
180	0.205	350	0.958
186	0.193		

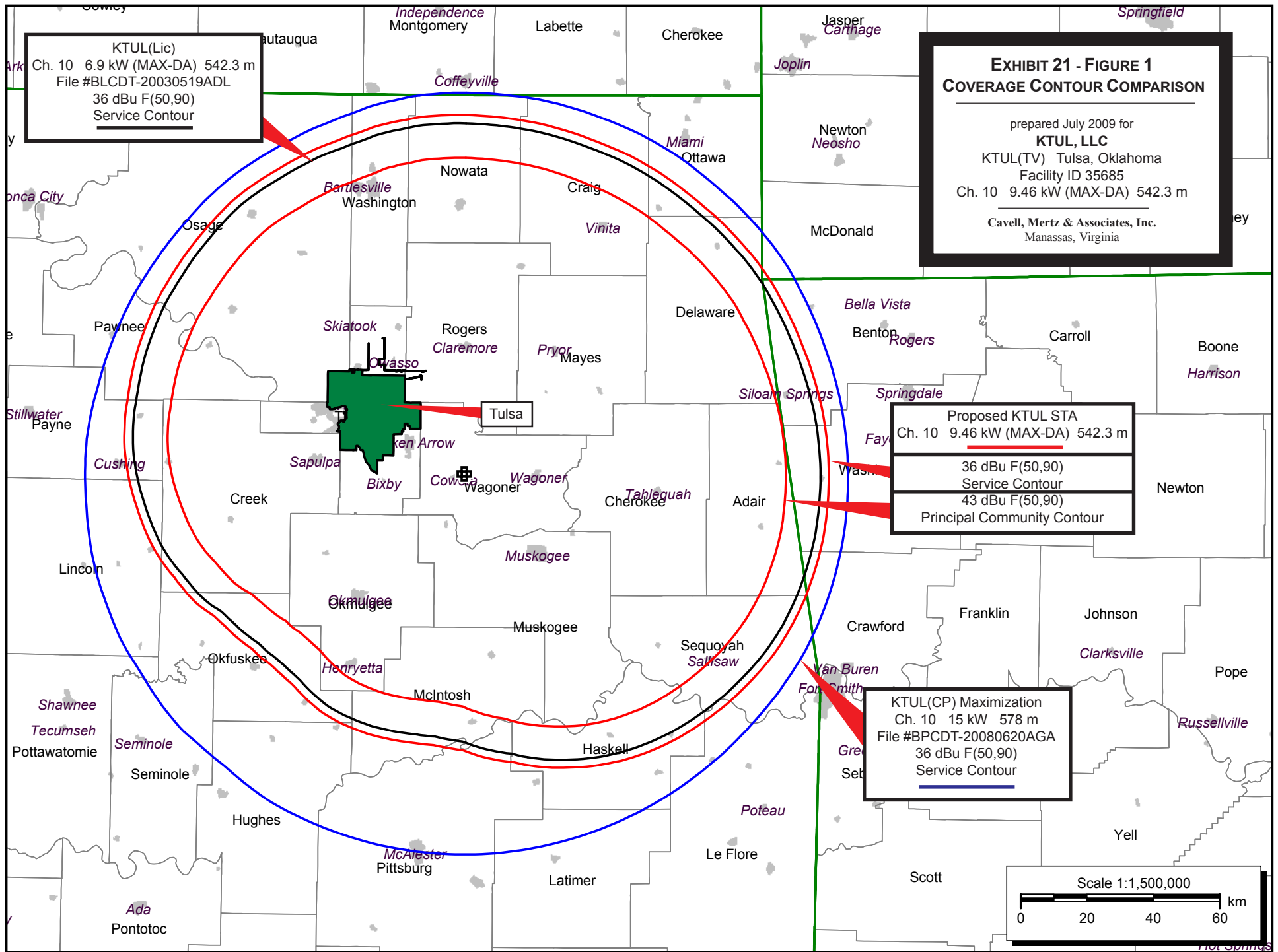


Exhibit 21 - Table II
INTERFERENCE STUDY RESULTS
 prepared for
KTUL, LLC
 KTUL(TV) Tulsa, OK
 Facility Id: 35685
 Ch. 10 9.46 kW (MAX-DA) 542.3 m

<u>Channel</u>	<u>Affected Station</u>	<u>City, State</u>	<u>File Number</u>	<u>7th R&O Table Baseline (2000 Census)</u>	<u>Calculated Baseline (2000 Census)</u>	<u>Interference Population without Proposal (2000 Census)</u>	<u>Interference Population with Proposal (2000 Census)</u>	<u>New Interference</u>	
								<u>Population</u>	<u>Percentage</u>
9	KAFT(TV)	Fayetteville, AR	BPEDT-20080620AFK	889,000	947,533	24,179	25,244	1,065	0.112 %
9	KAFT(TV)	Fayetteville, AR	Reference	889,000	888,798	14,317	15,160	843	0.095 %
9	KAFT(TV)	Fayetteville, AR	BLEDT-20041213ABJ	889,000	888,798	14,317	15,160	843	0.095 %
9	KWNL-CA	Winslow, AR	BLTVL-20000703AEF				---	No Interference	---
9	KWTV(TV)	Oklahoma City, OK	BMPCDT-20080619ADT	1,436,000	1,515,879	17,363	17,363	0	0.000 %
9	KWTV(TV)	Oklahoma City, OK	Reference	1,436,000			---	No Interference	---
10	KFDF-CA	Fort Smith, AR	BLTVA-20011031ABC				---	No Interference	---
10	KAKE-TV	Wichita, KS	BMPCDT-20080609ACD	743,000	751,298	3,780	3,881	101	0.013 %
10	KAKE-TV	Wichita, KS	Reference	743,000	743,432	885	984	99	0.013 %
10	KOLR(TV)	Springfield, MO	BMPCDT-20090528ALB	838,000	914,303	4,385	5,538	1,153	0.126 %
10	KOLR(TV)	Springfield, MO	Reference	838,000	838,104	2,867	3,419	552	0.066 %
11	KOED-TV	Tulsa, OK	BMPCDT-20080620ABR	1,281,000			---	No Interference	---
11	KOED-TV	Tulsa, OK	Reference	1,281,000	1,281,104	5,653	5,680	27	0.002 %