

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF  
CONSTRUCTION PERMIT  
FM TRANSLATOR STATION K293AT  
GREENVILLE, TEXAS

January 19, 2006

CH 295 0.14 KW 295 M AMSL

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
FM TRANSLATOR STATION K293AT  
GREENVILLE, TEXAS  
CH 295 0.14 KW 295 M AMSL

Table of Contents

Technical Statement

Figure 1	Tabulation of Average Elevations and Distances to Predicted Coverage Contour
Figure 2	Predicted Coverage Contours
Figure 3	Summary of Allocation Analysis

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
FM TRANSLATOR STATION K293AT  
GREENVILLE, TEXAS  
CH 295 0.14 KW 295 M AMSL

Technical Statement

This Technical Exhibit was prepared on behalf of FM Translator Station K293AT, Greenville, Texas, in support of application for modification of construction permit (FCC File No. BMPFT-20050711ACD). The instant application proposes a change in channel from Channel 293 to Channel 295. The proposed facility would operation with a nominal non-directional effective radiated power (ERP) of 0.14 kW with an antenna height of 295 m AMSL.

Tower Registration

The overall height above ground of the existing tower is 124 m. The tower has been registered with the FCC and it bears Antenna Structure Registration Number (ASRN) 1234224. There will be no change in the overall height of the existing structure.

Environmental Considerations

The proposal is categorically excluded from environmental processing, as an existing tower site is to be employed, and the proposal complies with the FCC Rules concerning human exposure to radio frequency (RF) energy. The proposal would not exceed 1.8% of the RF exposure limit for general population/uncontrolled environments for the frequency proposed. The calculation of RF energy at 2-m above ground was

made under the procedures of OET Bulletin No. 65.\* The formula employed is as follows:

$$S = \frac{(33.4)F^2P}{R^2}$$

where,  $S$  = power density in  $\mu\text{W}/\text{cm}^2$ ,  $F$  = relative field factor at the angle to the calculation point,  $P$  = the total effective radiated power relative to a dipole in watts, and  $R$  = distance from the antenna radiation center to the calculation point in meters. Based on the conservative assumption of a relative field factor of 1.0 with a total effective radiated power of 280 watts, and an antenna radiation center height above ground of 120 m, the calculated power density will not exceed  $0.7 \mu\text{W}/\text{cm}^2$ . Therefore, the calculated RF exposure at 2 m above ground will not exceed 0.3% of the limit of  $200 \mu\text{W}/\text{cm}^2$  for general population / uncontrolled environments.

The transmitter site shall be restricted from access. In the event that personnel are required to climb the structure, the proposed FM translator transmissions shall be reduced or terminated as necessary to prevent RF exposure above the FCC recommended limits.

#### Predicted Coverage Contour

The predicted 60 dBu coverage contours for K293AT were calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km from the proposed site were computed using the U.S.G.S. 3-second terrain database. The distances to the predicted 60 dBu coverage contours were determined using the average elevations of radials spaced every 30-degrees of azimuth. The antenna radiation center height above average terrain and the ERP in each radial direction were used in conjunction with the propagation prediction curves of Section 73.333 to

---

\* Federal Communications Commission OET Bulletin No. 65, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01, August 1997).

determine the distances to the contours. Figure 1 is a summary of the average elevations and the distances to the predicted 60 dBu coverage contour for the proposed facility. Figure 2 is a map showing the predicted 60 dBu coverage contours of the authorized and proposed translator facility.

Allocation Considerations

Figure 3 summarizes the allocation study for the proposed facility. There are no IF related facilities in close proximity to the proposed facility. The tabulation at Figure 3 lists the results of a numerical analysis of the potential for contour overlap for all nearby co-channel and first-, second-, and third-adjacent-channel facilities. For the purposes of the numerical study, the maximum HAAT and maximum ERP values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. As indicated in Figures 3, the proposed facility does not involve prohibited contour overlap with the protected contours of any of the pertinent facilities considered.



Louis Robert du Treil, Jr.  
Consulting Engineer

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Ave.  
Sarasota, FL 34237-6019

January 19, 2006

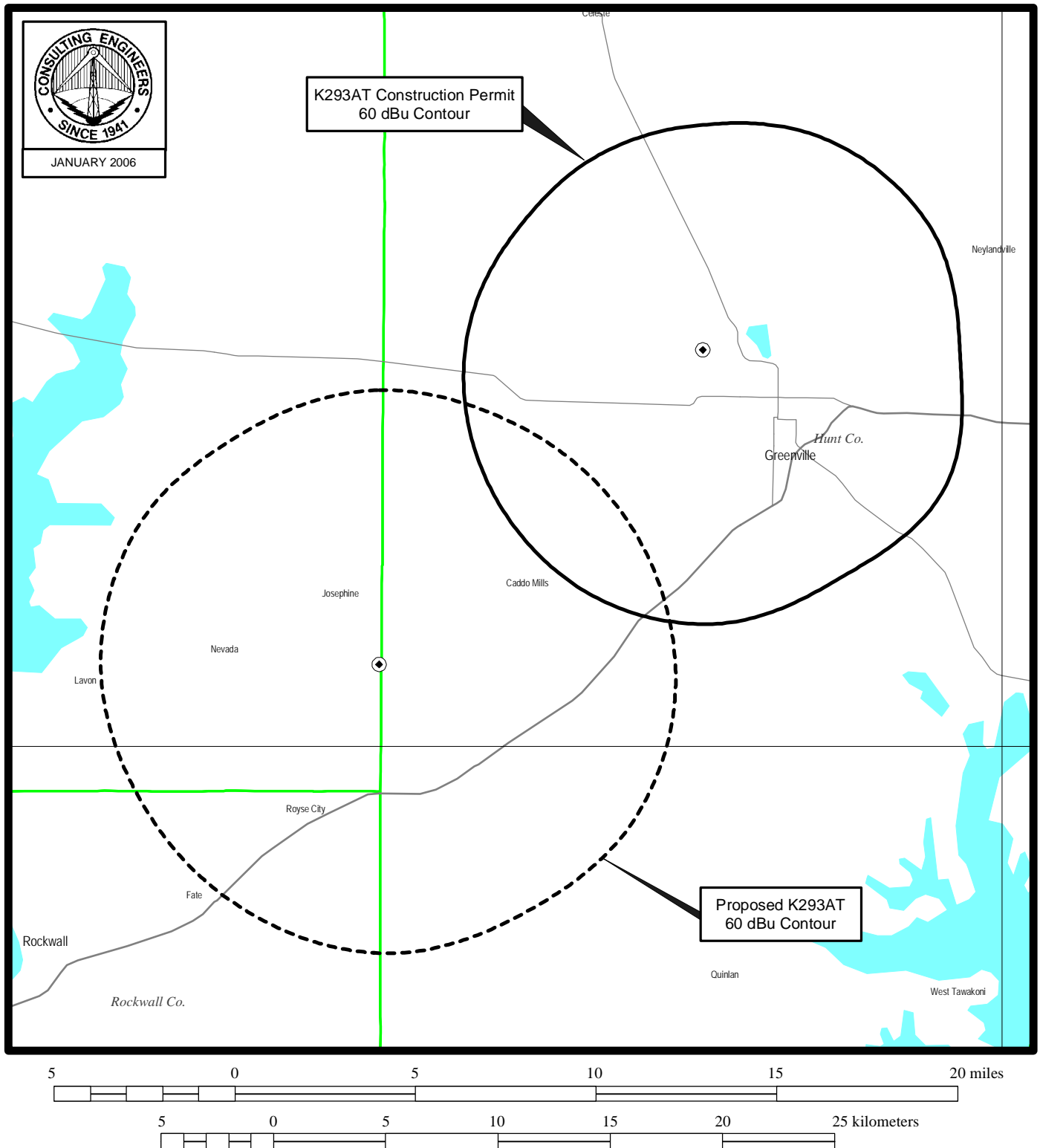
TECHNICAL EXHIBIT  
 APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
 FM TRANSLATOR STATION K293AT  
 GREENVILLE, TEXAS  
 CH 295 0.14 KW 295 M AMSL

Tabulation of Average Elevations  
 and Distances to Coverage Contours

<u>Azimuth</u> (deg.T)	<u>3-16 km</u> <u>Average</u> <u>Terrain</u> (m)	<u>Antenna</u> <u>HAAT</u> (m)	<u>ERP</u> (kW)	<u>Distance to</u> <u>60 dBu</u> <u>Contour</u> (km)
0	175	120	0.14	12.2
30	172	123	0.14	12.3
60	163	132	0.14	12.8
90	154	141	0.14	13.2
120	152	143	0.14	13.3
150	162	133	0.14	12.8
180	161	134	0.14	12.9
210	169	126	0.14	12.5
240	174	121	0.14	12.2
270	170	125	0.14	12.4
300	171	124	0.14	12.4
330	180	115	0.14	12.0

Note: All terrain elevations are based on the USGS 3-second linearly-interpolated database. The maximum antenna HAAT for any of the 12 radials is 143 m.

Figure 2



## PREDICTED COVERAGE CONTOURS

GREENVILLE, TEXAS  
CHANNEL 295 0.14 KW 295 M AMSL

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 3

TECHNICAL EXHIBIT  
 APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
 FM TRANSLATOR STATION K293AT  
 GREENVILLE, TEXAS  
 CH 295 0.14 KW 295 M AMSL

Summary of Allocation Analysis

Job Title: Separation Buffer: 50 km  
 Channel: 295 Coordinates: 330158 961751  
 ERP = 0.14 kW Max HAAT = 143

Call Id	City St	File Status	Num	Channel Freq	ERP MaxHAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km)
K293AT	GREENVILLE	BMPFT	293 D	0.250	N	33-09-32	N	45.7	20.11		
156869	TX CP	C	20050711AC	106.5	96	70054	096-08-34				
<i>(Applicant's authorized facility.)</i>											
KZZA	MUENSTER	BLH	294 C	75.000	N	33-26-13	Y	292.5	119.39	110.9	
23017	TX LIC	C	20020819AA	106.7	654		097-29-05		8.52	Close	
KZZA	60.0 dBu	Desired = 90.9 km ; Proposed					54.0 dbu; Undesired = 20.0				
KRVF	KERENS	BLH	295 C3	21.500	N	32-06-12	N	184.1	103.33	86.9	
41323	TX LIC	C	20030113AC	106.9	132		096-22-33		16.47	Clear	
KRVF	60.0 dBu	Desired = 42.3 km ; Proposed					40.0 dbu; Undesired = 44.5				
KRVA-FMCAMPBELL	BMLH	296 A	3.600	N	33-07-30	N	78.6	52.85	50.1		
54731	TX LIC	C	20031121AI	107.1	150		095-44-32		2.76	Close	
KRVA-FM	60.0 dBu	Desired = 30.1 km ; Proposed					54.0 dbu; Undesired = 20.0				
KOAI	FORT WORTH	BPH	298 C1	17.000	N	32-35-05	N	231.5	79.69	74.5	
23440	TX CP	C	20030603AB	107.5	608		096-57-46		5.15	Close	
KOAI	60.0 dBu	Desired = 73.7 km ; Proposed					100. dbu; Undesired = .8				
KOAI	FORT WORTH	BLH	298 C1	28.000	N	32-35-05	N	231.5	79.69	75.4	
23440	TX LIC	C	19970918KE	107.5	519		096-57-46		4.29	Close	
KOAI	60.0 dBu	Desired = 74.6 km ; Proposed					100. dbu; Undesired = .8				