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**Engineering Statement  
Minor Modification of KVCT  
Channel 11 at Victoria, TX  
March 2018**

**Expansion Application**

This Engineering Statement has been prepared on behalf of Sagamorehill of Victoria Licenses, LLC, licensee of digital television station KVCT at Victoria, Texas. This application specifies an amendment to an application for a minor modification of the licensed KVCT facility, to implement a power increase. The amended noise-limited contour is completely contained within the noise-limited contour proposed in pending BPCDT-20120105ABP.

**Interference Study**

An interference study has been conducted using the Commission's TVStudy software. The results of the study demonstrate that this proposal will have no additional interference impact on other stations (licenses, permits, and applications) beyond the nominal 0.5% value as permitted by the FCC Rules.

While the study results indicate an MX (mutually-exclusive) situation with a minor modification application filed by KSAT-TV Ch12 San Antonio (File No. 35781), the indicated interference is received by the proposed KVCT facility. No interference in excess of 0.5% is caused to the pending KSAT-TV application facility, and therefore this MX "hit" would not be considered an impediment to grant of the instant application.

Study created: 2018.03.09 13:10:53

Study build station data: LMS TV 2018-03-08 (100)

Proposal: KVCT D11 DT APP VICTORIA, TX  
 File number: KVCT11TLS43\_3KW  
 Facility ID: 35846  
 Station data: User record  
 Record ID: 456  
 Country: U.S.  
 Zone: III

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	KZTV	D10	DT	LIC	CORPUS CHRISTI, TX	BLCDT20100111ADU	135.8 km
Yes	KHOU	D11	DT	LIC	HOUSTON, TX	BLCDT20120620ACK	176.6
Yes	KLST	D11	DT	LIC	SAN ANGELO, TX	BLCDT20090316ABJ	396.8
No	KAMU-TV	D12	DT	LIC	COLLEGE STATION, TX	BLEDT20030319AFB	212.3
Yes	KSAT-TV	D12	DT	APP	SAN ANTONIO, TX	BLANK0000035781	119.8
Yes	KSAT-TV	D12	DT	LIC	SAN ANTONIO, TX	BLCDT20121102ABH	119.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D11  
 Latitude: 28 50 43.40 N (NAD83)  
 Longitude: 97 7 34.00 W  
 Height AMSL: 329.3 m  
 HAAT: 290.0 m  
 Peak ERP: 43.3 kW  
 Antenna: DIE-TLSV4VP 0.0 deg  
 Elev Pattn: Generic  
 Elec Tilt: 1.00

36.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	13.5 kW	284.2 m	94.0 km
45.0	23.1	291.9	98.4
90.0	39.2	300.7	103.3
135.0	42.1	303.3	104.1
180.0	28.8	295.3	100.4
225.0	14.9	290.4	95.0
270.0	15.4	282.0	94.9
315.0	16.7	271.7	95.1

Distance to Canadian border: 1922.8 km

Distance to Mexican border: 273.5 km

Conditions at FCC monitoring station: Kingsville TX  
 Bearing: 205.6 degrees Distance: 172.8 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
 Bearing: 331.6 degrees Distance: 1454.6 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%

---- Below is IX received by proposal KVCT11TLS43\_3KW ----

\*\*MX with BLANK0000035781 APP scenario 1, 13.37% interference received  
Proposal receives 13.35% interference from scenario 2

## Facilities Proposed

The proposed operation will be on Channel 11 with an effective radiated power of 43.3 kilowatts (H pol) and 10.8 kW (V pol). Operation is proposed with a Dielectric model TLS-V4/VP antenna, which will be mounted on an existing tower with FCC Antenna Structure Registration Number 1238711.

## RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

*D* is the distance in meters from the center of radiation to the calculation point.

Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground (284 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.150 at these angles. This relative field value yields a worst-case adjusted average effective radiated power of 1217.25 watts at depression angles between 45 and 90 degrees below the horizontal. Assuming this power and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is calculated to be  $0.5 \mu\text{W}/\text{cm}^2$ , which is 0.25% of  $200 \mu\text{W}/\text{cm}^2$  (the FCC maximum for uncontrolled environments at the Channel 11 frequency).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.