



Comprehensive Engineering Statement – September 16, 2023

KXUL, University of Louisiana, Monroe

This proposal is to increase the KXUL antenna height, change the brand and model and to reduce the ERP to compensate for the increased height. There are no changes proposed for KXUL coordinates.

Geographic Licensed Coordinates: N. Lat. 32-39-38.4 W. Long. 91-59-28.4 (NAD 83), ARN 1022704, FAA number -91-ASW-1556-OE., 276 m AG

Channel: 216 91.1 Mhz., Class C2, ERP 6.4 kW, circularly pol., (combined with KEDM, KLIP, KZRZ, KJMG KXUL, KRVV and KLIP.)

Proposed Antenna C.O.R: 285 m AMSL, 256 m AG, HAAT: 258.9 m (8 cardinal radials – FCC 30-meter terrain data). Base elev. 29 m. The proposed antenna model is the Shively, 6842, 10-bay circularly polarized antenna. Exhibit A, (uploaded separately), is a **contour-to-contour tabular channel study** using our FMCommander computer program. This study uses the FCC 30-meter terrain data to show that, per section 73.509 of the Commission's rules, the proposed facility will neither cause nor receive contour overlap with any station in the Commission's FM database. The values in the "In" and "Out" columns are the distances in kilometers between the protected service contours and the respective interference contours at the point of the closest distance. FCC style FMOVER tables for each relationship with KXUL appear in the order of the stations found in the tabular channel study. The channel study and these FMOVER tables show that the proposed facility will protect all stations that have a frequency and distance relationship, and that no contour overlap interference will be received.

Page #2 of this engineering statement is a **coverage map** of the 60 dBu city-service contour. As shown on the map, the proposed city of license, Monroe, Louisiana is covered 100 percent by the principal city contour.

Page #3 is **distance to contour** and HAAT table for the eight cardinal radials.

Page #4 is an **RFR table** showing that the proposed antenna, in combination with the other stations, produces power density well below the Commission's 200 $\mu\text{W}/\text{cm}^2$ maximum for the uncontrolled area. The study uses the provisions of Bulletin OET 65, with the EPA type #1 antenna and the combined power of 262.4 kW for all the active antennas. The table of calculations is from head height (2 meters).

The applicant proposes to use the same existing registered tower that currently holds the KXUL antenna. This tower has not been the target of environmental objections. The applicant has an agreement with the owner of the tower to mutually reduce power or terminate all transmissions as necessary to protect workers on the tower.

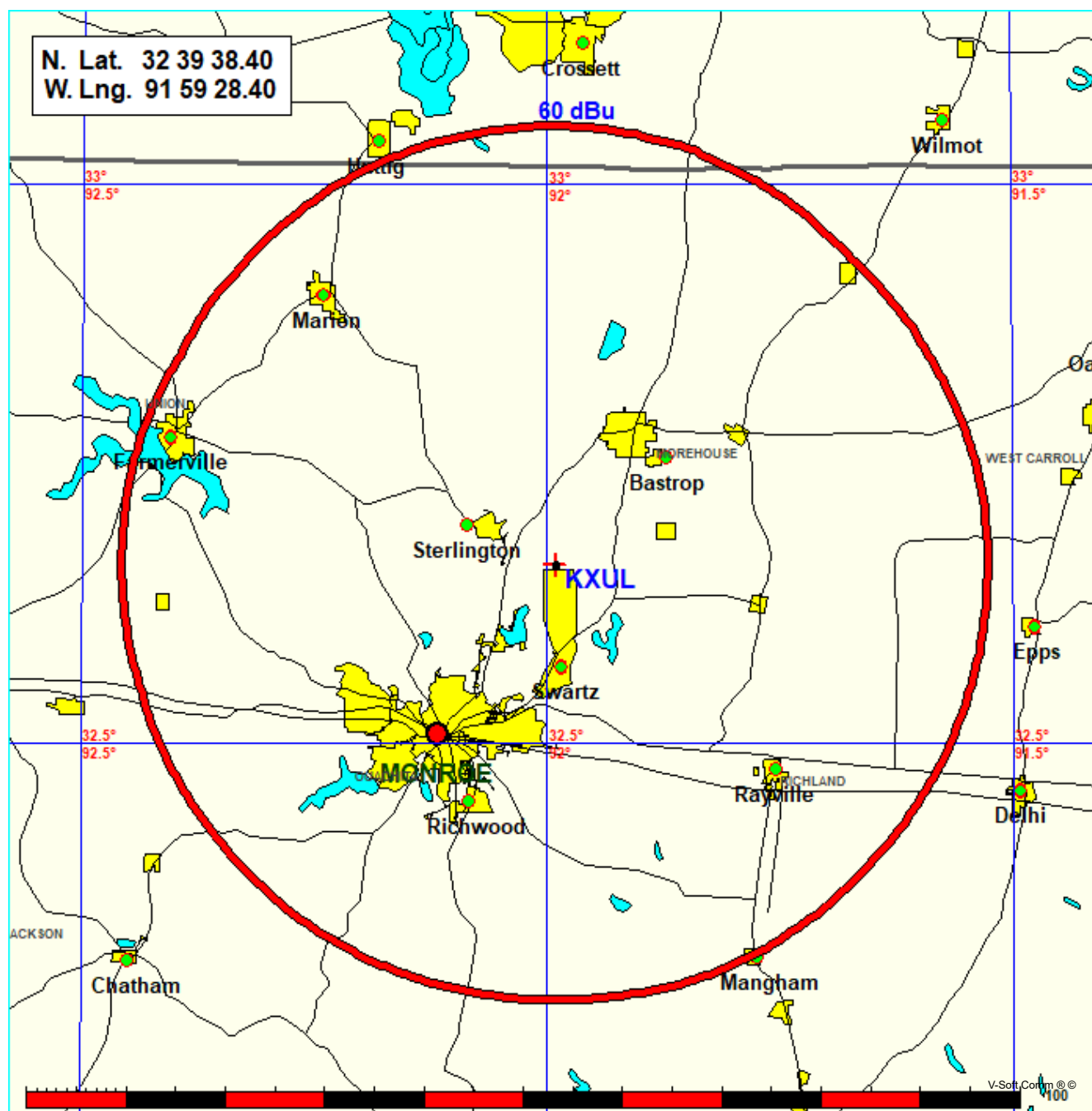
Page #5 is an exhibit stating the **qualifications** of the preparer.

Doug Vernier

69 dBu Coverage Map, Showing 100% Coverage to Monroe

Coverage Study - FCC 30 meter
10-15-2023

KXUL CH216 C2, 6.4 kW, 258.9m HAAT, 285.0m COR AMSL
Service Contour = 60 dBu.



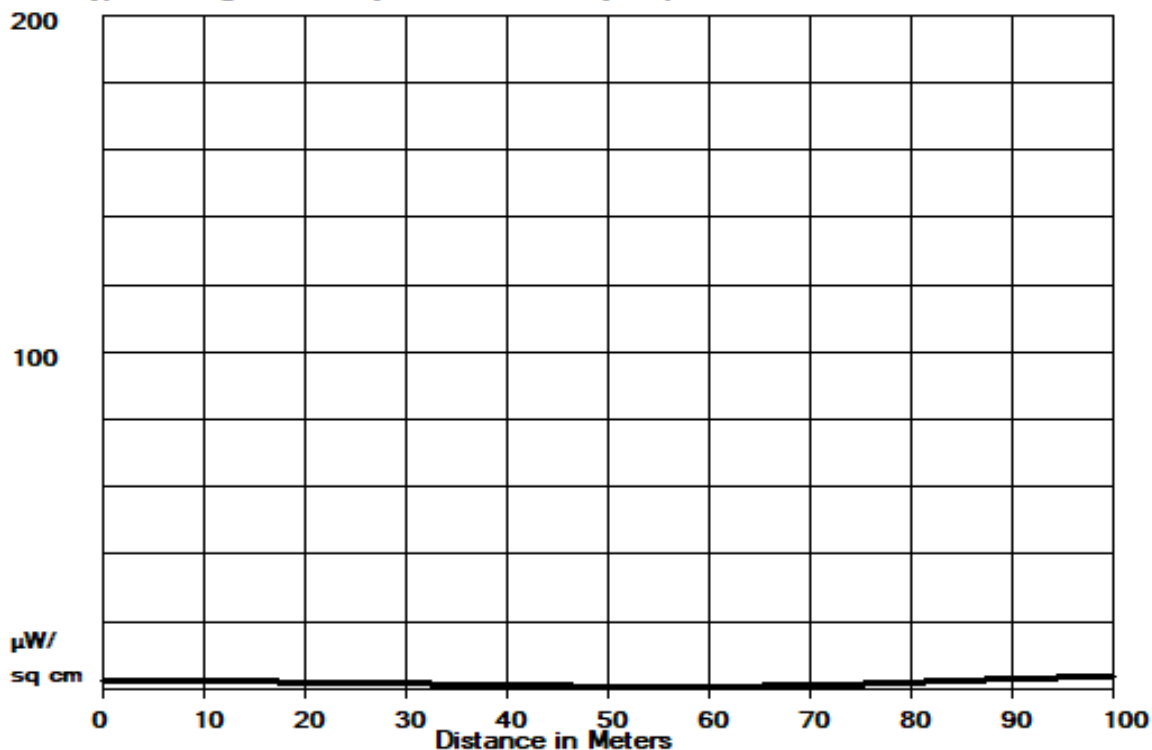
N. Lat. = 32 39 38.4 W. Lng. = 91 59 28.4
 HAAT and Distance to Contour,
 FCC, FM 2-10 Mi, 51 pts Method - FCC 30 Meter

Table of Distant to 60 dBu Cardinal Radials

| Azi. | AV EL | HAAT | ERP kW | dBk | 60-F5 |
|------|-------|-------|--------|------|-------|
| 000 | 24.5 | 260.5 | 6.4000 | 8.06 | 43.52 |
| 045 | 38.5 | 246.5 | 6.4000 | 8.06 | 42.63 |
| 090 | 23.1 | 261.9 | 6.4000 | 8.06 | 43.61 |
| 135 | 23.4 | 261.6 | 6.4000 | 8.06 | 43.59 |
| 180 | 26.3 | 258.7 | 6.4000 | 8.06 | 43.40 |
| 225 | 23.3 | 261.7 | 6.4000 | 8.06 | 43.60 |
| 270 | 22.6 | 262.4 | 6.4000 | 8.06 | 43.64 |
| 315 | 27.3 | 257.7 | 6.4000 | 8.06 | 43.34 |

Ave El= 26.10 M HAAT= 258.90 M AMSL= 285.0

EPA Type 1: Ring-stub or any unknown, 10 Bays, Spac= .82, H=262.4 kW, V=262.4 kW, 254 M AG



HORZ. DISTANCE FROM FM RADIATOR VS POWER DENSITY (Microwatt/Square cm)
 Dist(Meters) PD (H) PD (V) Total (uW/cm2) Percent Max. (200)

| | | | | |
|----|------|------|------|-----|
| 0 | 0.32 | 1.36 | 1.67 | 0.8 |
| 1 | 0.32 | 1.36 | 1.68 | 0.8 |
| 2 | 0.32 | 1.36 | 1.68 | 0.8 |
| 3 | 0.32 | 1.36 | 1.68 | 0.8 |
| 4 | 0.32 | 1.35 | 1.68 | 0.8 |
| 5 | 0.32 | 1.35 | 1.67 | 0.8 |
| 6 | 0.32 | 1.34 | 1.66 | 0.8 |
| 7 | 0.32 | 1.34 | 1.65 | 0.8 |
| 8 | 0.32 | 1.33 | 1.64 | 0.8 |
| 9 | 0.31 | 1.31 | 1.63 | 0.8 |
| 10 | 0.31 | 1.30 | 1.61 | 0.8 |
| 11 | 0.31 | 1.28 | 1.59 | 0.8 |
| 12 | 0.31 | 1.27 | 1.57 | 0.8 |
| 13 | 0.30 | 1.25 | 1.55 | 0.8 |
| 14 | 0.30 | 1.23 | 1.53 | 0.8 |
| 15 | 0.29 | 1.21 | 1.50 | 0.8 |
| 16 | 0.29 | 1.18 | 1.47 | 0.7 |
| 17 | 0.28 | 1.16 | 1.44 | 0.7 |
| 18 | 0.28 | 1.13 | 1.41 | 0.7 |
| 19 | 0.27 | 1.11 | 1.38 | 0.7 |
| 20 | 0.27 | 1.08 | 1.34 | 0.7 |
| 21 | 0.26 | 1.05 | 1.31 | 0.7 |
| 22 | 0.25 | 1.02 | 1.27 | 0.6 |
| 23 | 0.24 | 0.99 | 1.23 | 0.6 |
| 24 | 0.24 | 0.96 | 1.20 | 0.6 |
| 25 | 0.23 | 0.93 | 1.16 | 0.6 |

| Dist (Meters) | PD (H) | PD (V) | Total (uW/cm2) | Percent Max. |
|---------------|--------|--------|----------------|--------------|
| 26 | 0.22 | 0.90 | 1.12 | 0.6 |
| 27 | 0.21 | 0.86 | 1.08 | 0.5 |
| 28 | 0.20 | 0.83 | 1.04 | 0.5 |
| 29 | 0.20 | 0.80 | 0.99 | 0.5 |
| 30 | 0.19 | 0.76 | 0.95 | 0.5 |
| 31 | 0.18 | 0.72 | 0.90 | 0.5 |
| 32 | 0.17 | 0.69 | 0.86 | 0.4 |
| 33 | 0.16 | 0.65 | 0.81 | 0.4 |
| 34 | 0.15 | 0.61 | 0.76 | 0.4 |
| 35 | 0.14 | 0.57 | 0.71 | 0.4 |
| 36 | 0.13 | 0.53 | 0.67 | 0.3 |
| 37 | 0.12 | 0.50 | 0.62 | 0.3 |
| 38 | 0.11 | 0.46 | 0.57 | 0.3 |
| 39 | 0.10 | 0.42 | 0.52 | 0.3 |
| 40 | 0.09 | 0.38 | 0.48 | 0.2 |
| 41 | 0.09 | 0.35 | 0.43 | 0.2 |
| 42 | 0.08 | 0.31 | 0.39 | 0.2 |
| 43 | 0.07 | 0.28 | 0.34 | 0.2 |
| 44 | 0.06 | 0.24 | 0.30 | 0.2 |
| 45 | 0.05 | 0.21 | 0.26 | 0.1 |
| 46 | 0.04 | 0.18 | 0.22 | 0.1 |
| 47 | 0.04 | 0.15 | 0.19 | 0.1 |
| 48 | 0.03 | 0.12 | 0.16 | 0.1 |
| 49 | 0.02 | 0.10 | 0.12 | 0.1 |
| 50 | 0.02 | 0.08 | 0.10 | 0.0 |
| 51 | 0.01 | 0.06 | 0.07 | 0.0 |
| 52 | 0.01 | 0.04 | 0.05 | 0.0 |
| 53 | 0.01 | 0.03 | 0.04 | 0.0 |
| 54 | 0.00 | 0.02 | 0.02 | 0.0 |
| 55 | 0.00 | 0.01 | 0.01 | 0.0 |
| 56 | 0.00 | 0.01 | 0.01 | 0.0 |
| 57 | 0.00 | 0.01 | 0.01 | 0.0 |
| 58 | 0.00 | 0.01 | 0.01 | 0.0 |
| 59 | 0.00 | 0.02 | 0.02 | 0.0 |
| 60 | 0.01 | 0.03 | 0.03 | 0.0 |
| 61 | 0.01 | 0.04 | 0.05 | 0.0 |
| 62 | 0.01 | 0.06 | 0.07 | 0.0 |
| 63 | 0.02 | 0.08 | 0.10 | 0.0 |
| 64 | 0.03 | 0.10 | 0.13 | 0.1 |
| 65 | 0.04 | 0.13 | 0.17 | 0.1 |
| 66 | 0.04 | 0.17 | 0.21 | 0.1 |
| 67 | 0.05 | 0.20 | 0.26 | 0.1 |
| 68 | 0.06 | 0.24 | 0.31 | 0.2 |
| 69 | 0.08 | 0.29 | 0.37 | 0.2 |
| 70 | 0.09 | 0.34 | 0.43 | 0.2 |
| 71 | 0.10 | 0.39 | 0.49 | 0.2 |
| 72 | 0.12 | 0.44 | 0.56 | 0.3 |
| 73 | 0.13 | 0.50 | 0.64 | 0.3 |
| 74 | 0.15 | 0.56 | 0.71 | 0.4 |
| 75 | 0.17 | 0.63 | 0.79 | 0.4 |
| 76 | 0.19 | 0.69 | 0.88 | 0.4 |
| 77 | 0.21 | 0.76 | 0.97 | 0.5 |

| Dist (Meters) | PD (H) | PD (V) | Total (uW/cm2) | Percent Max. |
|---------------|--------|--------|----------------|--------------|
| 78 | 0.23 | 0.83 | 1.06 | 0.5 |
| 79 | 0.25 | 0.91 | 1.15 | 0.6 |
| 80 | 0.27 | 0.98 | 1.25 | 0.6 |
| 81 | 0.29 | 1.06 | 1.35 | 0.7 |
| 82 | 0.31 | 1.13 | 1.45 | 0.7 |
| 83 | 0.34 | 1.21 | 1.55 | 0.8 |
| 84 | 0.36 | 1.29 | 1.65 | 0.8 |
| 85 | 0.38 | 1.37 | 1.75 | 0.9 |
| 86 | 0.41 | 1.45 | 1.86 | 0.9 |
| 87 | 0.43 | 1.53 | 1.96 | 1.0 |
| 88 | 0.45 | 1.61 | 2.06 | 1.0 |
| 89 | 0.48 | 1.68 | 2.16 | 1.1 |
| 90 | 0.50 | 1.76 | 2.26 | 1.1 |
| 91 | 0.52 | 1.83 | 2.36 | 1.2 |
| 92 | 0.54 | 1.91 | 2.45 | 1.2 |
| 93 | 0.57 | 1.98 | 2.54 | 1.3 |
| 94 | 0.59 | 2.05 | 2.63 | 1.3 |
| 95 | 0.61 | 2.11 | 2.72 | 1.4 |
| 96 | 0.63 | 2.18 | 2.80 | 1.4 |
| 97 | 0.64 | 2.24 | 2.88 | 1.4 |
| 98 | 0.66 | 2.29 | 2.95 | 1.5 |
| 99 | 0.68 | 2.35 | 3.02 | 1.5 |
| 100 | 0.69 | 2.39 | 3.08 | 1.5 |

**Declaration and
Statement of Qualifications**

I, Douglas L. Vernier, declare that I have received training as an engineer from the University of Michigan School of Engineering. That, I have received degrees from the University in the field of Broadcast Telecommunications. That, I have been active in broadcast consulting for over 40 years.

That, I have held a Federal Communications Commission First Class Radiotelephone License continually since 1964. In 1985, this license was reissued by the Commission as a lifetime General Radiotelephone license no. PG-16-16464.

That, I am certified as a Professional Broadcast Engineer (#50258) by the Society of Broadcast Engineers, Indianapolis, Indiana. (Life-time Certification received in 2010).

That, my qualifications are a matter of record with the Federal Communications Commission.

That, I have been retained by University of Louisiana at Monroe to prepare the engineering showing appended hereto.

That, I have prepared this broadcast engineering showing, the technical information contained in same and the facts stated within are true of my knowledge.

That, under penalty of perjury, I declare that the foregoing is correct.

Douglas L. Vernier

A handwritten signature in blue ink, appearing to read "Doug Vernier", with a large, stylized initial "D" and a horizontal line extending to the right.

Executed on October 15, 2023