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August 26, 2010

Marlene H. Dortch, Secretary
Federal Communications Commission
Washington, DC 20554

Re: WMLM, St. Louis, MI, Facility ID #60293, BMML-20100106AGL

ATTN: Ann Gallagher, Audio Services Division

Dear Ms. Dortch:

Transmitted herewith in triplicate, on behalf of Krol Communications Inc., license of AM Station WMLM, is an amendment to the above-referenced application for modification broadcast license. The information provided responds to a request from the Commission's staff in its letter dated June 30, 2010.

Please contact the undersigned if there are any questions.

Sincerely,

Jerrold Miller

enc.

AMENDMENT

WMLM(AM) St. Louis, MI

BMML-20100106AGL

The application for modification of license of AM station WMLM, St. Louis, Michigan, Fac. ID 60293, is amended to supply the attached engineering material which was requested by the Commission in its letter of June 30, 2010.

KROL COMMUNICATIONS INC.

By _____
President

August 26, 2010

ANTENNA MONITOR AND SAMPLE LINES

The antenna monitor is a six (6) tower Potomac Instruments AM-19 (204) Serial #1950. This unit was returned to Potomac Instruments for calibration on May 30, 2008. The sample lines are 3/8" Cablewave foam heliax type FCC38-50J with a velocity factor of .81 that were factory cut to equal lengths and assembled. The sample line characteristics were measured at the connector to the antenna monitor.

SAMPLING SYSTEM MEASUREMENTS

Sampling system impedance measurements were made using Hewlett Packard Model #8753A Network Analyzer, companion Agilent Model 85046A S-Parameter test set, and 50 Ohm calibration set. The sample lines were disconnected from the antenna monitor and measurements were made looking into the connector at that end of each sample line. Measurements were made without the sample line connected to the toroidal sample unit at the base of the tower and in an open-circuit (un-terminated) condition. Impedance measurements were then made with the sample line connected to the sampling unit at the base of the tower.

In an un-terminated transmission line, reactance zeros will occur at odd multiples of 90 degrees electrical length (90 degrees, 270 degrees, 450 degrees, etc.) as the electrical length is varied by changing frequency. Reactance zero occurs where the reactance passes through zero on the analyzer. At that frequency, for lines with loss, resistance is very low. This measurement is used to determine the multiple of 90 degrees, which in this case was found to be 270 degrees, where zero reactance occurs closest to the station's carrier frequency. The following table shows the frequencies above and below the carrier frequency, the electrical length of each sample line at carrier frequency derived by the ratio of the frequencies, and the impedance at carrier with the base sample device connected.

Tower	Sampling Line Open-Circuit Resonance Below 1520 kHz (kHz)	Sampling Line Open-Circuit Resonance Above 1520 kHz (kHz)	Sampling Line Calculated Electrical Length at 1520 kHz (Degrees)	Measured Sampling Line with Toroid Connected at 1520 kHz (Ohms)
1	646.5	1956.6	209.8	51.9
2	641.5	1950.2	210.4	51.0
3	644.2	1950.8	210.4	52.1
4	645.5	1954.5	210.0	51.9
5	647.3	1956.7	209.7	52.2
6	645.7	1954.9	209.9	51.8

The sampling lines meet the requirement that they be equal in electrical length to within one (1) electrical degree.

The network analyzer setup was used to measure the impedance of the sample lines at 1/8th wavelength (45 degrees) immediately above and below the station's carrier frequency. The following equation was used to calculate the characteristic impedance of each sample line.

$$Z_0 = ((R_1^2 + X_1^2)^{1/2} \bullet (R_2^2 + X_2^2)^{1/2})^{1/2}$$

Tower	+45 Degree Offset Frequency (kHz)	+45 Degree Offset Impedance (Ohms)	-45 Degree Offset Frequency (kHz)	-45 Degree Offset Impedance (Ohms)	Calculated Z_0 Characteristic Impedance (Ohms)
1	2282.7	6.2+49.6j	1630.5	4.4+50.3j	50.2
2	2274.8	6.9+49.3j	1624.9	5.2+49.9j	50.0
3	2275.9	6.4+49.7j	1625.7	4.4+50.3j	50.3
4	2280.3	6.3+50.1j	1628.8	4.4+49.7j	50.2
5	2284.0	6.3+49.7j	1631.4	4.4+50.3j	50.3
6	2280.7	6.3+49.7j	1629.1	4.4+49.9j	50.1

The sampling line measurements meet the characteristic impedance requirement that they be equal within +/- 2 Ohms.