Arthur Doak

From: Donald Lynch <donaldlynch@windstream.net>
Sent: Tuesday, December 20, 2016 7:48 PM
To: Arthur Doak
Cc: Bob Holladay
Subject: WESP Dothan, Al Form 302
Attachments: Intermodulation and Spurious Emmisions Study Dothan 11-18-2016.pdf

The WESP engineer has revised the Intermod and Spurious Emissions Report. A copy is attached. Please review and let me know if this is acceptable. Also, do I need to file an amendment to replace the previous study with this one? Happy Holidays!

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Intermodulation and Spurious Emmisions Study

Pretext:

Mr. Bob Holladay, holder of construction permit BPH-20150612AAJ
as a requirement of these permits, must show proof of
performance of the combined antenna system to meet spurious emission limits. For these tests, all three
transmitters were energized into the combined antenna, at their rated ERP.
In accordance with the FCC Code of Federal Regulations, all FM radio stations employing transmitters
manufactured after January 1, 1960, must perform a *one-time* check of their transmitter's performance to ensure
compliance of their emissions within the FM spectrum. These rules are outlined herein:

§73.317 FM transmission system requirements.

(a) FM broadcast stations employing transmitters authorized after January 1, 1960, must maintain the bandwidth occupied by their emissions in accordance with the specification detailed below. FM broadcast stations employing transmitters installed or type accepted before January 1, 1960, must achieve the highest degree of compliance with these specifications practicable with their existing equipment. In either case, should harmful interference to other authorized stations occur, the licensee shall correct the problem promptly or cease operation.

(b) Any emission appearing on a frequency removed from the carrier by between 120 kHz and 240 kHz inclusive must be attenuated at least 25 dB below the level of the un-modulated carrier. Compliance with this requirement will be deemed to show the occupied bandwidth to be 240 kHz or less.

(c) Any emission appearing on a frequency removed from the carrier by more than 240 kHz and up to and including 600 kHz must be attenuated at least 35 dB below the level of the un-modulated carrier.

(d) Any emission appearing on a frequency removed from the carrier by more than 600 kHz must be attenuated at least 43 + 10 Log10 (Power, in watts) dB below the level of the un-modulated carrier, or 80 dB, whichever is the lesser attenuation.

Measurements were taken on November 16th 2016 from 10:00 AM to 2:00 PM using the following equipment:

DSA 815 Spectrum Analyzer
EMCO 3120 Calibrated antenna

Harmonic Content Study for WESP 102.5 MHZ

Harmonic Measurements were taken one quarter mile from the transmitter location.

The following chart indicates the results of the test.

	Fundamental		2nd		3rd
Ref Measurement	102.5 Mhz -28 Dbm Measured		205.0 Mhz -108 -120		307.5 Mhz -108 -120
	Difference		12		12

This test shows that we are exceeding the required -80 Dbm level and Passes the Harmonic Content Study.

For the intermod study an unmodulated carrier was applied to each transmitter combiner input. Only the pilot signal was present on the signal. Measurements were taken one quarter of a mile away using the same test setup as the above Harmonics test.

Intermodulation Measurements

Fundamental Frequency Measurements

Frequency 1	105.300 Mhz
Reference measurement	-28 Dbm
Frequency 2	102.500 Mhz
Reference measurement	-28 Dbm
Frequency 3	100.500 Mhz
Reference measurement	-28 Dbm

Products

3rd Order	Level	Difference	5th Order	Level	Difference	7th Order	Level	Difference
107.3000	-110	-2	114.9000	-114	-6	119.7000	-120	-12.0000
106.5000	-114	-6	112.1000	-114	-6	*116.9000*	-88	20.0000
104.5000	-110	-2	109.3000	-114	-6	114.1000	-110	-2.0000
108.1000	-110	-2	112.9000	-114	-6	111.3000	-112	-4.0000
99.7000	-54	54	106.5000	-110	-2	117.7000	-110	-2.0000
103.3000	-113	-5	110.9000	-114	-6	108.5000	-113	-5.0000
97.7000	-110	-2	*101.7000*	-83	25	115.7000	-109	-1.0000
98.5000	-83	25	106.1000	-110	-2	103.7000	-113	-5.0000
95.7000	-114	-6	*96.9000*	-61	47	113.7000	-113	-5.0000
			101.3000	-57	51	98.9000	-113	-5.0000
			94.9000	-111	-3	108.9000	-113	-5.0000
			92.9000	-115	-7	*94.1000*	-83	25.0000
			96.5000	-92	16	104.1000	-110	-2.0000
			93.7000	-92	16	*92.1000*	-57	51.0000
			90.9000	-108	0	99.3000	-110	-2.0000
						90.1000	-115	-7.0000
						88.1000	-110	-2.0000
						94.5000	-111	-3.0000
						91.7000	-112	-4.0000
						88.9000	-110	-2.0000
						86.1000	-110	-2.0000

Notes:
Items in **RED** are local stations on Same Carrier or Local Interference.
99.700 WOOF
98.500 WFSY
101.700 WTOT
96.900 WDJR
101.300 WAGF
96.500 WMJJ
93.700 WDBT
94.100 No FM Carrier present on Demod. Local Interference
92.100 WJJN
119.700 Interference from 91.0300 WVOB

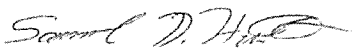
All measurememts exceed reference by at least -80 Dbm.

All measurements pass.

In accordance with the requirements set forth in the construction permit, station Passes.

Certification:

Under penalty of perjury, all of the findings in this document are true and accurate to the best of my knowledge and ability.



Samual D. Hunter
Holladay Broadcasting