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SPURIOUS EMISSIONS MEASUREMENTS
K263BE, ABERDEEN, WASHINGTON

Prepared for
JODESHA BROADCASTING
27 February 2020

ENGINEERING REPORT

On the night of 29 September and the morning of 30 September 2019, I made the equipment performance measurements contemplated in 47 CFR §74.1236(a)(2) and described in 47 CFR §73.317 (b-d), for FM translator station K63BE, Aberdeen, Washington. These measurements were made in anticipation the modifications requested in LMS#0000084583 using an antenna system shared with K280GE and K234AU, Aberdeen, Washington, and in fulfillment of Special Operating Condition 2.

Measurements were made while the station was broadcasting programming material typical of its daily operation. K263BE operates stereophonically with no SCA's. K263BE was operating at its full permitted power of 0.25 KW ERP, as were K280GE and K234AU.

A sample of the combined K234AU/K280GE/K263BE signal was taken at the output of the combiner using a non-directional sampling element inserted into a Bird Electronics line section.

This sample was fed to a Rhode and Schwartz Model FSP-3 spectrum analyzer, Serial Number 835151/011, within current calibration. The analyzer was set to a center frequency of 94.7 MHz, span of 1.5 MHz, resolution bandwidth of 1 kHz, video filtering of 3 kHz and using a peak detector. Because it was not possible to remove modulation from the signal, the reference level was established by setting the analyzer resolution bandwidth to 300 kHz and measuring the power in this bandwidth. Because the power in an FM signal remains constant irrespective of modulation, if the measurement bandwidth exceeds the signal bandwidth, the measured power will be equal to the power in the unmodulated carrier alone. This technique for establishing the FM reference level has been independently verified and found to be accurate. The analyzer was set to peak hold mode and allowed to collect data for 10 minutes.

The resulting plot was saved in the analyzer's memory. Unfortunately, the saved copy of this plot was lost subsequent to its analysis but prior to preparing this report.

47 CFR §73.317 (b) & (c) requires that all signals between 120 and 240 kHz removed from the carrier be attenuated below the level of the carrier by at least 25 dB; that all signals between 240 kHz and 600 kHz removed from the carrier be attenuated by at least 35 dB below the level of the carrier; and that all signals greater than 600 kHz removed from the carrier be attenuated by at least 67 dB below the level of the carrier at 0.25 KW ERP. These limits are superimposed on the plot.

The measurements indicated that the occupied bandwidth of the K263BE signal lies well within the limits established in 47 CFR § 73.317 (b) & (c) at frequencies removed from the carrier as much as 600 kHz.

To measure spurious signals and harmonics beyond 600 kHz from the carrier, the spectrum analyzer was set to 20 MHz span, 1 kHz resolution bandwidth, and 3 kHz video filtering. At this resolution bandwidth, the internal noise of the analyzer is sufficiently reduced to resolve signals below -67.0 dBC. The analyzer was initially set at 10 MHz center frequency and then incremented successively by 20 MHz to scan the spectrum from 9 kHz to 1 GHz. Any signals greater than -67.0 dBC were noted. All such signals found were determined to be ingressing signals from nearby stations. No intermodulation products, spurious signals or harmonics were found that could be attributed to the operation of K263BE.

In light of the above measurements I believe that K263BE is in full compliance with the requirements of 47 CFR § 73.317 (a) through (d) and 47 CFR §74.1236(a)(2).

ENGINEER'S STATEMENT

I hereby affirm that:

I have been retained by Jodesha Broadcasting, licensee of K234AU, to ascertain its compliance with 47 CFR §74.1236(a)(2) and 47 CFR § 73.317 (b-d) and to prepare this report;

This report and associated exhibits were prepared by me, and are based on measurements made by me;

To the best of my knowledge all statements made herein are true and reflect the actual facts of the matter;

I am a Broadcast Engineer of 53 years' experience and;

My qualifications are a matter of record with the Commission.

Respectfully submitted this 27th day of February, 2020,


ELECTRONIC SIGNATURE

Gray Frierson Haertig