KYZK 107.5 FM
Spurious Emissions Report

On the evening of Sunday October 13, 2013, equipment performance measurements were made for and on behalf of radio station KYZK 107.5 FM Sun Valley, ID The measurements were made as a condition of Construction Permit File Number: BPH-20130626ABN

KYZK is one of three stations sharing a master antenna system at the Sun Valley ski resort transmitter site southwest of Ketchum, Idaho. The outputs of the three stations are combined using a branch combiner filter system Model RCCS 313-0.8H designed and fabricated by Jampro Antenna located in Sacramento CA.

Measurements were made while the three stations were broadcasting programming material typical to its daily operation. KYZK operates stereophonically and has no subsidiary communications services. All three stations were operating into the combined antenna system at the full permitted power during the measurements.

Section 73.317 (b) and (c) require 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, 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 80 dB below the level of the carrier.

Three sets of measurements were made to assure compliance with these requirements. The first measurement looked at the spectrum between –600 kHz and +600 kHz, relative to the carrier frequency, in order to assess the station's occupied bandwidth under modulation. The second measurement looked at the spectrum from –1 MHz to –600 kHz and +600 kHz to +1 MHz, relative to the carrier frequency, to look for near-in intermodulation products. The third measurement scanned the spectrum from 9 kHz to 1 GHz in order to detect any out-of-band intermodulation products or harmonics.

All measurements were taken with an IFR AN940 Spectrum Analyzer, serial number 1009, within current calibration. I have included numerical data demonstrating compliance with the Commission's rules.

To measure the occupied bandwidth, the spectrum analyzer was set to 107.5 MHz center frequency, 200 kHz/div span, 3 kHz resolution bandwidth, 30 dB of attenuation, and 10 kHz video filtering. This results in a measurement noise floor of approximately –98 dBC. An unmodulated carrier was used to establish the reference point at the top of the screen. The analyzer was, then, placed in peak hold mode and modulation was once again applied. After 10 minutes of data collection, the following data was collected:

KYZK Carrier Frequency = 107.5 MHz

FREQUENCY SIGNAL DIFFERENCE REQUIRED COMPLIANCE

Carrier +0 kHz -21 dBC 0 dB down n/a yes
Carrier –120 kHz -52 dBC 30 dB down 25 dB down yes
Carrier +120 kHz -53 dBC 31 dB down 25 dB down yes
Carrier –240 kHz -82 dBC 60 dB down 35 dB down yes
Carrier +240 kHz -81 dBC 62 dB down 35 dB down yes
Carrier –600 kHz -98 dBC 81 dB down 80 dB down yes
Carrier +600 kHz -101 dBC 82 dB down 80 dB down yes
Noise Floor: -98 dBC 82 dB down 80 dB down yes

It can be clearly seen from this data that the occupied bandwidth of KYZK lies well within the prescribed limits between –600 kHz and +600 kHz, relative to the carrier frequency.
To make the second set of measurements, the analyzer was once again placed in peak hold mode, data collected for ten minutes, and data from the resulting spectrum was examined.

To measure spurious signals and harmonics, the spectrum analyzer was set to 2 MHz/div span, 10 kHz resolution bandwidth, 30 dB of attenuation, and 30 kHz video filtering. The analyzer was initially set at 10 MHz center frequency and the incremented successively by 20 MHz to scan the spectrum from 9 kHz to 1 GHz. Any signals that were greater than –80 dBC were noted. Upon completion of the scan, each noted signal was compared to a list of known transmitters in the area and the analyzer was used to demodulate the signal. All of the signals noted were identified as being either the other station in the combined system or ingress from other known transmitters. No intermodulation products, spurious signals, or harmonics were found that could be attributed to the operation of KYZK.
In light of the above measurements, I believe that KYZK 107.5 FM is in full compliance with the requirements of Section 73.317 (a-d).

This report was prepared by myself, and 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. My qualifications are a matter of record with the commission.

Respectfully submitted:

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