

From: Stephen Lockwood [mailto:lockwood@hatdaw.com]
Sent: Friday, December 13, 2013 12:36 PM
To: Jerome Manarchuck
Cc: Carrie Ward; John Price; Mike Schwartz
Subject: Re: WMFS(AM) PTA

Jerry,

In response to the deficiency mentioned in the PTA letter, attached is the amended Item 8 which includes the measurements for the sampling devices.

Thanks for your help.

Regards,

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ITEM 8 - Antenna Monitor and Sampling System

The sample system installed consists of Delta Electronics TCT-3 toroidal current transformers (TCT) installed inside the tuning houses at the base of each tower. All three TCTs have been compared with each other on the bench using the antenna monitor and found to be in good working order and within manufacturer's specifications. The TCTs are connected to a Potomac Instruments 1901 antenna monitor by equal lengths of 3/8 inch Andrew heliax coaxial cable. This cable has a foam dielectric, and solid copper inner and outer conductors. These lines were verified to have equal lengths within 1°. All excess cable is in the transmitter building antic. The antenna monitor was tested with a signal generator, a Tee connector and equal lengths of cable. The two signals were fed into the reference and sample inputs and the monitor was found to be in good working order and within manufacturer's specifications. There is no change to the ground system. The description contained in the current station license remains accurate.

The following measurements on the Delta TCT were made using an HP 8751A network analyzer in a calibrated measurement system.

Tower	Ratio	Phase	S/N
1	Reference	Reference	17241
2	0.999	0.20°/-179.8°	17243
3	0.998	0.15°/-179.8°	17240
4	0.996	0.40°/-179.6°	17230