BROADCAST COMMUNICATIONS ENGINEERING
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AM PHASOR REPAIR
FOR KULY AM
ULYSSES, KS

8/12/2022 – 8/17/2022
by Bob Moore
Broadcast Communications Engineering

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August 20, 2022

To Whom It May Concern:

From August 12, 2022, through August 17, 2022, Broadcast Communications Engineering of Lebanon, MO was contracted to make all necessary repairs to return both directional patterns of KULY AM, Ulysses, KS to a fully operable condition. KULY AM has a two-tower 1kw day pattern and a separate two-tower night pattern operating at 500 watts.

These repairs and adjustments became apparent after installing an FM translator antenna, coax cable, and associated iso-coupler on tower #1 of the directional array. Earlier attempts to bring the two directional patterns into compliance were not possible due to the age and lack of parts for the Bauer phasor manufactured in the early 1960's. In the process of repairing the phasor multiple parts were machined and repaired to make it possible to tune the phasor once more. Some interchangeable parts were purchased to make the repairs as well.

The antenna monitor is a Potomac Instruments model AM-19. The AM-19's calibration was verified by feeding a common signal into both sampling ports #1 and #2, then verifying both phases and ratios were identical. This method assumes the monitor is reading correctly.

Field strength readings were made with a Potomac Instruments FIM-21, serial # 801 with a factory calibration date of June 28, 2022.

All impedance measurements were made with a Delta OIB-3 AM impedance bridge.

At the completion of all work on August 17, 2022, the Potomac phase monitor was adjusted to the licensed operating specifications then a full set of field strength readings were taken with the following findings:

The phasor was adjusted to:

Tower #1	Reference tower for both nighttime and daytime operation
Tower #2	Daytime phase of 98° with a ratio of .615 Nighttime phase of 149.6° with a ratio of .635

The 132° daytime monitor point reads **24 mV** with a maximum allowable value of **54.1 mV**
The 132° nighttime monitor point reads **28 mV** with a maximum allowable value of **85.1 mV**
The 62° nighttime monitor point reads **33.5 mV** with a maximum allowable value **44.1 mV**

Upon completion of all directional measurements an NRSC 1 measurement was made on both day and night patterns with both passing and compliant. The NRSC 1 measurements are filed at the studios and are available upon request to be reviewed.

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Based on all findings, KULY AM may return to full daytime and nighttime directional operation and no longer needs to be operating under a Special Temporary Authorization

Bobby J. Moore of Lebanon, MO has owned and operated Broadcast Communications Engineering since 1994. Bobby J Moore holds FCC license #PG-17-27327 and is a member of St. Louis SBE Chapter 55. He has conducted these types of tests on dozens of FM and AM facilities throughout the mid-west. Many tests are a matter of record with the FCC in similar applications. He is very qualified to carry out these measurements.

Bob Moore
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