

Supplemental Statement
Request for STA for Channel 14 Equipment Testing to Identify and Resolve
Land Mobile Interference in Advance of Transition Phase 6 Testing Period
LMS File Number 0000062772

This statement supplies supplemental information as requested by FCC Staff regarding the pending STA request in LMS File Number 0000062772. The STA request seeks to allow WLKY to conduct equipment testing of the WLKY Channel 14 reassignment facility in advance of the scheduled phase testing period for the specific purpose of identifying Land Mobile facility operations that may be relevant to WLKY's compliance with the construction permit condition requiring WLKY to identify and mitigate interference.

WLKY has been assigned to make the transition to Channel 14 at phase 6 (testing period start date September 7, 2019, and phase completion date October 18, 2019). The phase 6 testing period consists of 42 days. The STA is sought to cover the 6 month period immediately preceding the scheduled phase testing period. Therefore, pursuant to the STA sought herein, WLKY would begin testing on March 7, 2019.

The purpose of the testing is to determine the efficacy of the advance measures undertaken by WLKY to avoid interference to Land-Mobile ("LM") operations that utilize spectrum immediately adjacent to television Channel 14; to identify LM operations that require additional interference remediation and the nature of such additional remediation; and to perform follow-on tests to confirm successful mitigation of any such interference.

As the Commission is aware, there are two principal modes of interference that may occur with respect to the LM operations at hand. The first case is out-of-band ("OOB") emissions that may originate from the WLKY Channel 14 transmitter which fall on the adjacent LM spectrum. The solution for this case is to apply a filter at the output of the Channel 14 transmitter to attenuate the OOB emissions to levels that are sufficiently reduced below the threshold where interference would occur to LM operations. To that end, WLKY plans to install a 12-pole constant impedance filter that is specifically designed to attenuate OOB emissions in the LM spectrum adjacent to Channel 14. The filter's design has been developed in coordination with an engineering analysis of LM license data (frequency, location, etc.) that identified potentially LM facilities in the region and determined the minimum target suppression for protection of each facility.

The second principal mode of interference to LM operations is due to the overload of the LM receiver's front-end amplifier by strong signals on nearby frequencies. In this case, filtering is applied at the LM receiver's input to mitigate densification. The filter would suppress frequencies within the Channel 14 spectrum to reduce strong incoming signal levels to the receiver.

WLKY has engaged Davis Electronics Co., Inc. (“DECI”) of Louisville KY, a local firm with expertise in LM radio operations, to aid in the testing and mitigation process. DECI presently manages numerous transmit/receive sites in the WLKY service area that host LM operations on the spectrum adjacent to TV Channel 14, and DECI is also licensee of some of the LM facilities that may be affected by WLKY’s assigned post-auction operation on Channel 14.

More than 1,500 (ONE THOUSAND FIVE HUNDRED) LM authorizations having over 9,000 (NINE THOUSAND) authorized frequencies/emissions have been identified in the region of WLKY and on spectrum adjacent to WLKY’s post-Auction Channel 14. Many of these operations are separated by distance and/or frequency in a way that WLKY would not reasonably expect them to suffer from any detrimental effect. Nonetheless, there are numerous LM facilities that are potentially affected, some of which are co-located at the WLKY tower site, and will certainly require input filtering to avoid front-end LM receiver overload. LM facilities that are located within 5 miles of the WLKY site are most susceptible to front-end receiver overload, and license data from the FCC’s ULS shows that there are 366 authorizations at frequencies/emissions within this distance.

The success of WLKY’s advance planning and filtering will not be known until the transmitting tests can begin. While it is hoped that the testing will proceed smoothly and without undue complication, the existing phase 6 testing period consisting of 42 days is inadequate to allow for thorough LM performance evaluation and remediation. WLKY seeks the 6 month STA for advance testing in an effort to ensure that there is adequate time to determine which and how many LM operations might warrant further investigation and/or interference mitigation to comply with the WLKY CP condition.

The nature of the testing process will be iterative. That is, should testing indicate an interference issue exists with a particular LM facility, a determination would be made as to which interference mode is underlying the issue and how a mitigating measure can be implemented. While WLKY and DECI will obtain LM receive filters and associated connectors/cables in advance, the filter installation, equipment adjustment, further diagnostics, and operational confirmation may require multiple visits to an affected site.

A “best case” outline of a testing schedule is provided below. Overnight testing is the preferred time period, but some daytime testing will be required to cover periods of heavy usage of LM facilities.

Proposed Dates	Days and Times of Testing
Months 1 and 2 (March 7, 2019 – May 6, 2019)	Overnight Testing Estimated Two Nights per week 12AM – 5 AM
Months 3 and 4 (May 7, 2019 – July 6, 2019)	Add: Daytime Testing Estimated Two Days per week 10 AM – 3 PM As Needed: Continued Overnight Testing Two Nights per week 12AM – 5 AM
Months 5 and 6 (July 7, 2019 – September 6, 2019)	Confirmation of Mitigation: Daytime and Nighttime Testing, as Needed Estimated Two Days per week 10 AM – 3 PM Estimated Two Nights per week 12AM – 5 AM
As Needed, during Months 3 – 6	Brief, on/off testing day or night to check success of remediation measures (<i>i.e.</i> , transmission lasting 10-15 minutes)

As described separately in this STA request, all equipment testing will be coordinated with stations WTIU (Facility ID 66536, Bloomington IN) and WKSO-TV (Facility ID 34222, Somerset KY) which currently operate on Channel 14. WTIU and WKSO-TV would receive interference from the WLKY STA operation, and have consented to the testing program to take place at mutually-agreeable times. WTIU and WKSO-TV are “upstream” of WLKY’s transition and will change to other channels at phase 6.

Depending on results, the testing plan may have to be made more aggressive to include more days and times in order to address interference issues. As with all testing, such changes will be coordinated with WTIU and WKSO-TV. WLKY will provide an informal update to FCC Staff each month to state the dates and times of actual equipment testing on Channel 14 during the STA period, along with an updated forecast of its testing schedule.

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