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**CONSULTING ENGINEERS**  
**OXON HILL, MARYLAND**

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**FCC FORM 301, EXHIBIT 25**  
**SECTION 73.213(a) STUDY**  
**APPLICATION FOR MODIFICATION OF**  
**CONSTRUCTION PERMIT**  
**FCC FILE NUMBER BMPH-19990820IF**  
**PREPARED FOR**  
**SECRET COMMUNICATIONS II, LLC**  
**STATION WKKJ(FM)**  
**CHILLICOTHE, OHIO**  
**CH 227B      33 KW (MAX-DA, H&V)      182 METERS**

**INTRODUCTION**

This engineering exhibit was prepared on behalf of Secret Communications II, LLC (Secret), licensee of station WKKJ(FM), Chillicothe, Ohio, in support of an FCC Form 301 minor change application for modification of construction permit (FCC File Number BMPH-19990820IF). The exhibit demonstrates that WKKJ is a grandfathered shortspaced station with respect to station WAKW(FM), Cincinnati, Ohio, and that the instant application complies with Section 73.213(a) of the FCC Rules.

**ALLOCATION STUDY**

A review of the assignments and allotments on channel 227, on the three immediately upper adjacent channels (228 through 230), the three

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immediately lower adjacent channels (224 through 226), and 53 and 54 channels removed from channel 227 (280 and 281) reveals that the proposed WKKJ channel 227B facility meets or exceeds the minimum distance separation requirements of Section 73.207 of the FCC Rules with respect to all known existing and proposed FM assignments and allotments with the exception of the one toward licensed co-channel commercial FM station WAKW, Cincinnati, Ohio. WAKW is licensed (FCC File Number BLH-19891011KD) to operate on channel 227B with maximum effective radiated power (ERP) of 50 kW, horizontally polarized; 49 kW, vertically polarized; and antenna radiation center height above average terrain (HAAT) of 150 meters, at a site identified by geographic coordinates 39° 12' 22" North Latitude, 84° 33' 23" West Longitude, referenced to the 1927 North American Datum (NAD 27). WKKJ and WAKW began operation in 1961, well before the implementation of the minimum distance separation requirements for FM stations currently found in Section 73.207 of the FCC Rules. The distance between the licensed WKKJ site and the licensed WAKW site is 135.3 kilometers. The minimum distance separation between co-channel Class B stations required by Section 73.207 of the FCC Rules is 241 kilometers. Hence, WKKJ and WAKW are short spaced by 105.7 kilometers by today's rules. Since WAKW and WKKJ were authorized

prior to November 16, 1964, and have remained continuously short-spaced since that time, WKKJ and WAKW are considered grandfathered short-spaced stations, and any modification or relocation of WKKJ or WAKW is governed by Section 73.213(a) of the FCC Rules.

#### SECTION 73.213(a) STUDIES

Section 73.213(a) of the FCC Rules requires a showing demonstrating that the total area and population subject to interference caused and received by WKKJ and WAKW will be maintained or decreased by the instant amendment. Figure 2 of this exhibit is a portion of the Kentucky and Ohio USGS 1:1,000,000-scale state maps on which the areas of interference received within the licensed and proposed WKKJ predicted 54 dB $\mu$  F(50,50) contours are plotted. Similarly, Figure 3 of this exhibit is a portion of the Indiana, Kentucky, and Ohio USGS 1:1,000,000-scale state maps on which the areas of interference caused by the licensed and proposed WKKJ facilities within the WAKW predicted 54 dB $\mu$  F(50,50) contour are plotted. Using a computer program that enumerates the population of those census divisions with centroids located within the specified contour or boundary and another computer algorithm that estimates the area within an irregular polygon, the data contained in the

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following tabulations of the populations and areas within the areas of interference caused or received demonstrate compliance with the requirements of Section 73.213(a) of the FCC Rules. These tabulations are presented in greater detail in Figure 1 of this exhibit.

Licensed WKKJ Interference Analysis:

	<u>Area</u>	<u>Population</u>
	(sq. km)	(persons)
Interference Received by WKKJ	2,381	105,310
<u>Interference Caused to WAKW</u>	<u>3,186</u>	<u>255,217</u>
Total	5,567	360,527

Proposed WKKJ Interference Analysis:

	<u>Area</u>	<u>Population</u>
	(sq. km)	(persons)
Interference Received by WKKJ	2,916	65,564
<u>Interference Caused to WAKW</u>	<u>2,309</u>	<u>215,532</u>
Total	5,225	281,096

From this data it may be concluded that the proposed WKKJ facility meets the first requirement of Section 73.213(a) of the FCC Rules in that the

total area and population subject to interference, both caused and received, is decreased.

Turning now to the second showing required by Section 73.213(a) of the FCC Rules that this proposal will not result in increased interference caused to WAKW, Figure 3 of this exhibit demonstrates that the predicted area of interference caused to WAKW by the proposed WKKJ facility lies entirely within the predicted area of interference caused to WAKW by the licensed WKKJ facility. Accordingly, the area of interference caused to WAKW is decreased, and no new area of interference caused to WAKW is created by this proposal.

Finally, with respect to the third showing required by Section 73.213(a) of the FCC Rules concerning adequate remaining aural service in loss areas, Figure 2 of this exhibit shows that portions of Pike, Jackson, Ross, Highland, and Fayette Counties, Ohio, are predicted to lose service from WKKJ due to interference received from WAKW under the instant proposal. Figure 4 of this exhibit is a study showing the number of aural services remaining in the WKKJ loss area created under this proposal. Figure 4 shows that the area

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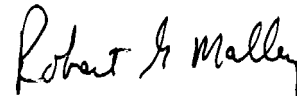
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predicted to lose service from WKKJ under the proposal has more than an adequate number of other aural services remaining.

**CERTIFICATION**

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed on October 30, 2001.

A handwritten signature in black ink, appearing to read "Robert G. Mallery". The signature is written in a cursive, flowing style.

Robert G. Mallery

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WKKJ(FM) and WAKW(FM) Section 73.213(a) Interference Analysis

<u>Facilities Studied</u>	<u>Interference Received from WAKW<sup>1</sup></u>		<u>Interference Caused To WAKW</u>		<u>Total WKKJ Interference (Received Plus Caused)</u>	
	<u>Area</u> (Sq. Km.)	<u>1990 US Census Population</u> (Persons)	<u>Area</u> (Sq. Km.)	<u>1990 US Census Population</u> (Persons)	<u>Area</u> (Sq. Km.)	<u>1990 US Census Population</u> (Persons)
Licensed WKKJ <sup>2</sup>	2,381	105,310	3,186	255,217	5,567	360,527
Proposed WKKJ <sup>3</sup>	2,916	65,564	2,311	215,532	5,225	281,096

<sup>1</sup> Licensed WAKW facilities: 50 kW ERP (H), 49 kW ERP (V) (Max-DA), 150 meters HAAT, 39° 12' 22" North Latitude, 84° 33' 23" West Longitude (referenced to 1927 North American Datum (NAD 27)).

<sup>2</sup> Licensed WKKJ facilities: 50 kW ERP (H&V), 106 meters HAAT, 39° 19' 52" North Latitude, 82° 59' 49" West Longitude (referenced to NAD 27).

<sup>3</sup> Proposed WKKJ facilities: 33 kW ERP (Max-DA, H&V), 182 meters HAAT, 39° 35' 30" North Latitude, 83° 06' 38" West Longitude (referenced to NAD 27).



Figure 2

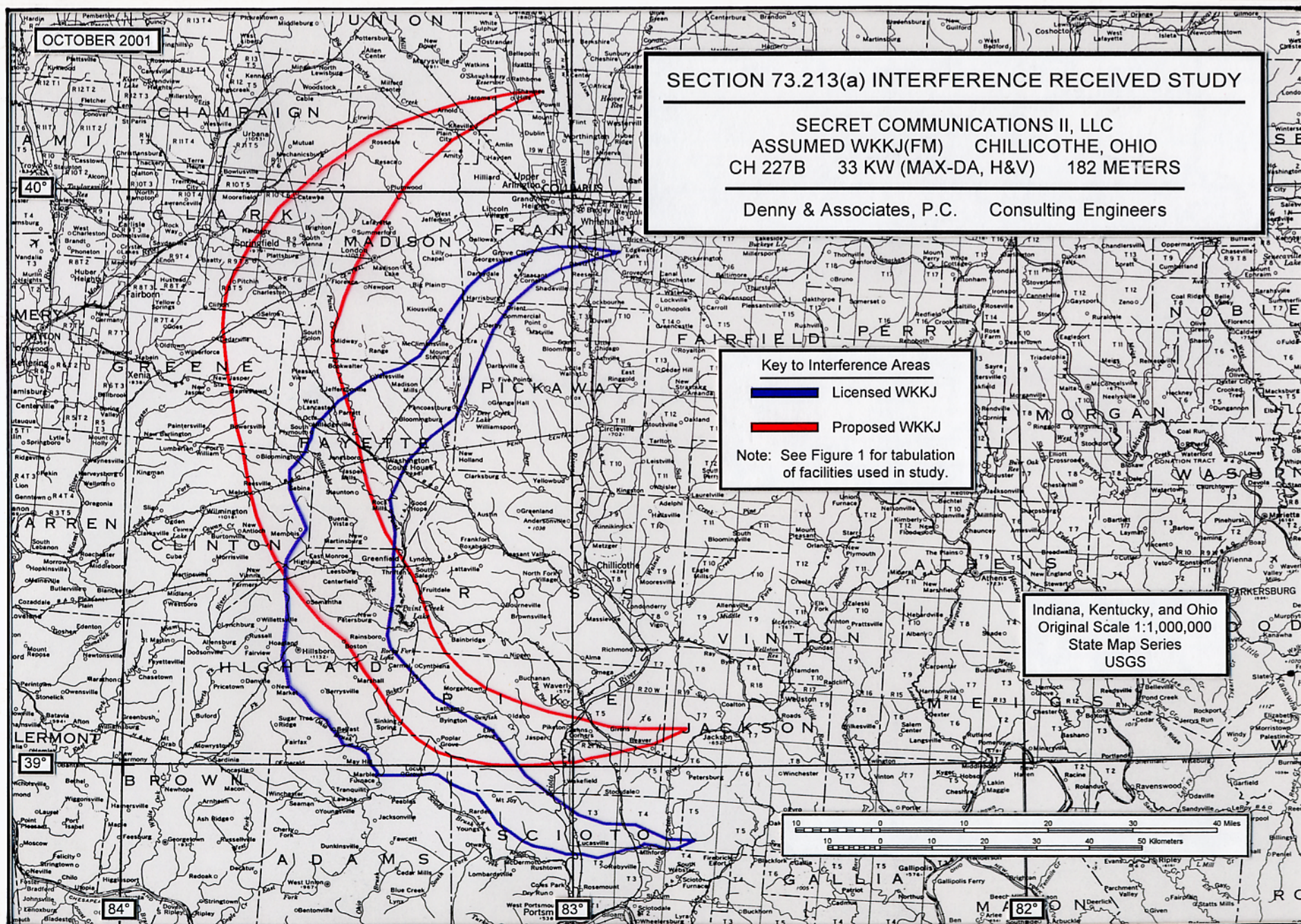




Figure 3

