

CONTOUR OVERLAP AND  
LONGLEY-RICE INTERFERENCE STUDIES  
PROPOSED LOW POWER STATION K43EZ  
CHANNEL 43 – FORT SMITH, ARKANSAS

We conducted a computer analysis of the interference situation for the proposed facility, the results of which are shown in Exhibit D-2. The study is based on contour protection requirements of Sections 74.705, 74.706, and 74.707 of the FCC's Rules with respect to analog full-power, digital full-power, and low power television stations, respectively. It concludes that the facility proposed herein meets these requirements except in three instances: KODE-DT(CP), Channel 43 in Joplin, Missouri; KLRA-DT (application), Channel 43 in Little Rock, Arkansas; and, KHOG-TV, Channel 29 in Fayetteville, Arkansas.

We then conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to the above-mentioned facilities. The software utilizes a 2-square kilometer cell size, calculates signal strength at 1.0 kilometer increments along each radial studied, and employs the 2000 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within the proposed LPTV station's protected contour of the stations under study where interference from another source (other than proposed K43EZ) already is predicted to exist (also known as "masking"). The results of these studies are provided in Exhibit D-3 and summarized in a tabulation as Exhibit D-4. They conclude that the facility proposed herein causes no significant new interference to any of the stations of concern.

As a result, waiver of Section 74.705 and 74.706 of the Commission's Rules with respect to interference to KHOG-TV and the two DTV facilities, respectively, are requested and believed to be justified based on the aforementioned Longley-Rice studies.

SMITH AND FISHER

EXHIBIT D-2

PROPOSED K43EZ  
CH. 43 - FORT SMITH AR

REFERENCE  
35 26 50 N LPTV Pwr = 5.8 kW, HAMS L COR= 317 M  
94 21 54 W  
..... Channel 43-, 644 MHz .....

Call	Channel	Location	Dist	Azi	FCC	Margin
KODE-D*CP	43	Joplin	MO 181.50	355.2	> 219.40	-37.90
KLRA-D*AP	43	Little Rock	AR 223.80	105.9	> 251.23	-27.43
KHOGTV LI	29+	Fayetteville	AR 68.05	21.8	> 077.39	-9.34
KTFO-D*CPM	42	Tulsa	OK 135.13	298.9	> 109.03	26.10
KEJB* CP	43-	El Dorado	AR 328.33	142.7	> 295.12	33.21
AP967* AP	28+	Russellville	AR 98.82	94.2	> 079.85	37.28
KTFO ALD	42	TULSA	OK 132.99	299.0	> 092.35	40.64
K42BS LI	42-	Fayetteville	AR 87.33	15.7	> 029.15	58.18
K43HE CP	43Z	Mcalester	OK 133.67	247.3	> 073.98	59.69
K54GC CPM	43-	Independence	KS 218.97	331.0	> 159.21	59.76
KELF-L LI	43Z	Grove	OK 140.32	345.4	> 077.40	62.92
KTPX LI	44-	Okmulgee	OK 165.03	285.6	> 093.20	71.83

\* Actual radials antenna height and directional patterns used (if any)

EXHIBIT D-3

## Smith and Fisher Population Report

KODE-D.C (43) Joplin, MO  
TV Incoming Interference Study  
Signal Resolution: 2 km  
Consider NTSC Taboo: Yes  
KWX error points are considered to  
be interference free coverage.  
# of radials computed for contours: 72  
Contours calculated using 8 radial HAAT.  
LR Profile Spacing Increment: 1.0 km  
Interference considered within the  
reference station's noise limited contour.  
Threshold for reception: 41.441

Study Date: 10/25/2002  
TV Database Date: 10-22-02

Population Database: 2000 US Census (PL)

Percentages calculated using a baseline population of 572,281.

Stations considered which do not cause interference:

PROPOSED K43EZ (43-)

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Totals for KODE-D.C (43)

Calculation Area Population:	576,498	(	27404.0 sq. km )
Not Affected by Terrain Loss:	572,281	(	26993.5 sq. km )
Total NTSC Interference:	0	(	0.0 sq. km )
DTV Only Interference:	0	(	0.0 sq. km )
Total DTV Interference:	0	(	0.0 sq. km )
Interfered Population:	0	(	0.0 sq. km )
Interference Free:	572,281	(	26993.5 sq. km )

Percent Interference From Proposed K43EZ: 0.00

EXHIBIT D-3 cont'd.

## Smith and Fisher Population Report

KLRA-D.A (43) Little Rock, AR  
TV Incoming Interference Study  
Signal Resolution: 2 km  
Consider NTSC Taboo: No  
KWX error points are considered to  
be interference free coverage.  
# of radials computed for contours: 72  
Contours calculated using 8 radial HAAT.  
LR Profile Spacing Increment: 1.0 km  
Interference considered within the  
reference station's noise limited contour.  
Threshold for reception: 41.441

Study Date: 10/25/2002  
TV Database Date: 10-22-02

Population Database: 2000 US Census (PL)

Percentages calculated using a baseline population of 806,240.

Stations considered which do not cause interference:

PROPOSED K43EZ (43-)

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Totals for KLRA-D.A (43)

Calculation Area Population:	813,348	(	19435.5 sq. km )
Not Affected by Terrain Loss:	806,240	(	19048.4 sq. km )
Total NTSC Interference:	236	(	4.0 sq. km )
DTV Only Interference:	0	(	-0.0 sq. km )
Total DTV Interference:	0	(	0.0 sq. km )
Interfered Population:	236	(	4.0 sq. km )
Interference Free:	806,004	(	19044.4 sq. km )

Percent Interference From Proposed K43EZ: 0.03

EXHIBIT D-3 cont'd.

## Smith and Fisher Population Report

KHOGTV (29+) Fayetteville, AR  
TV Incoming Interference Study  
Signal Resolution: 2 km  
Consider NTSC Taboo: Yes  
KWX error points are considered to  
be interference free coverage.  
# of radials computed for contours: 72  
Contours calculated using 8 radial HAAT.  
LR Profile Spacing Increment: 1.0 km  
Interference considered within the  
reference station's noise limited contour.  
Threshold for reception: 63.24

Study Date: 10/25/2002  
TV Database Date: 10-22-02

Population Database: 2000 US Census (PL)

Percentages calculated using a baseline population of 403,971.

Stations considered which do not cause interference:

Proposed K43EZ (43-)

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Totals for KHOGTV (29+)

Calculation Area Population:	459,636	(	16033.9 sq. km )
Not Affected by Terrain Loss:	403,971	(	13465.4 sq. km )
Total NTSC Interference:	0	(	4.0 sq. km )
DTV Only Interference:	0	(	-0.0 sq. km )
Total DTV Interference:	0	(	0.0 sq. km )
Interfered Population:	0	(	4.0 sq. km )
Interference Free:	403,971	(	13461.4 sq. km )

Percent Interference From Proposed K43EZ: 0.00

EXHIBIT D-4

## INTERFERENCE SUMMARY

PROPOSED LPTV STATION K43EZ  
CHANNEL 43 - FORT SMITH, ARKANSAS

<u>Call Sign</u>	<u>Status</u>	<u>City, State</u>	<u>Ch.</u>	<u>Grade B Population</u>	<u>Unmasked Interference From Proposed Facility</u>	<u>%</u>
KODE-DT	CP	Joplin, MO	43	572,281	0	0
KLRA-DT	Appl.	Little Rock, AR	43	806,240	0	0
KHOG-DT	Lic.	Fayetteville, AR	29	403,971	0	0