

ENGINEERING STATEMENT

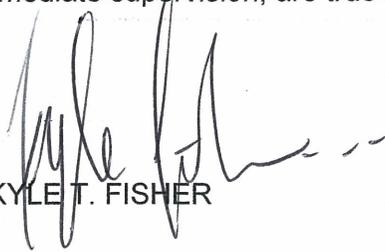
The engineering data contained herein have been prepared on behalf of KTVK, Inc., licensee of television translator K54GI, Channel 54 in Flagstaff, Arizona, in support of this Application for Construction Permit to specify digital operation on Channel 25 from the licensed K54GI site. This proposal is being submitted in response to the Commission's reclamation of Channel 54 spectrum for auction, thereby placing this translator in a displacement situation.

It is proposed to mount a standard Andrew (ERI) AL8W directional antenna at the 10-meter level of an existing 12-meter communications tower on which the present K54GI antenna is located. Exhibit B is a map upon which the predicted service contours are plotted. It is important to note that the newly proposed 51 dBu contour encompasses a significant portion of the Grade A contour that obtains from the licensed K54GI facility. Operating parameters for the proposed facility are tabulated in Exhibit C. An interference study is provided in Exhibit D, and a power density calculation follows as Exhibit E.

Because no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. Due to diminutive height of the tower and its proximity to the nearest airport runway, FCC antenna structure registration is not required. This conclusion is supported by the Commission's TOWAIR program.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

February 8, 2011

  
KYLE T. FISHER

**CONTOUR POPULATIONS**

**51 DBU : 85,484**

**41 DBU : 105,827**



Tuba City

Hotevilla

Cameron

**41 DBU**

Coconino

Seco

**51 DBU**

Leupp

Williams

Flagstaff K54GI

Winslow

Sedona

Chino Valley

Cottonwood

Yavapai

Prescott Valley

Lake Montezuma

Prescott

Camp Verde

**EXHIBIT B**

Scale 1:1,000,000



## PROPOSED OPERATING PARAMETERS

PROPOSED K54GI-D  
CHANNEL 25 – FLAGSTAFF, ARIZONA

Transmitter Power Output:	0.1 kw
Transmission Line Efficiency:	93.6%
Antenna Power Gain – Toward Horizon:	13.26
Antenna Power Gain – Main Lobe:	13.26
Effective Radiated Power – Toward Horizon:	1.2 kw
Effective Radiated Power – Main Lobe:	1.2 kw
Transmitter Make and Model:	Type-accepted
Transmission Line Make and Model:	Andrew LDF7-50A
Size and Type:	1-5/8" foam heliax
Length:	50 feet
Antenna Make and Model:	Andrew (ERI) AL8W
Orientation	180 degrees true
Beam Tilt	1.75 degrees
Radiation Center Above Ground:	10 meters
Radiation Center Above Mean Sea Level:	2856 meters

LONGLEY-RICE INTERFERENCE STUDIES  
PROPOSED K54GI-D  
CHANNEL 25 – FLAGSTAFF, ARIZONA

We conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to all facilities of concern. The software utilizes a 1-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 protected contour of the station under study where interference from another source (other than proposed K54GI-D) already is predicted to exist (also known as "masking").

It is important to note that the applicant has specified use of a "stringent" out-of-channel emission mask in order to take advantage of the d/u ratios that pertain to adjacent-channel interference relationships. A revised LPTV DTV elevation pattern, based on the new FCC Rules, has been applied to proposed facility for the referenced studies. The results of these studies are provided in Exhibit D-2. They conclude that the facility proposed herein causes no significant new interference to any of the potentially affected stations.

As a result, it is believed that the proposed Channel 31 facility complies with the interference requirements of Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030 of the Commission's Rules.

## INTERFERENCE SUMMARY

PROPOSED K54GI-D  
CHANNEL 25 – FLAGSTAFF, ARIZONA

<u>Call Sign</u>	<u>Status</u>	<u>City, State</u>	<u>Ch.</u>	<u>Longley-Rice Service Population</u>	<u>Unmasked Interference From Proposed Facility</u>	<u>%</u>
K52CM-D BDISDTT-20090824AGQ	CP	Flagstaff, AZ	24	73, 638	11	<0.1
K25DM-D BDFCDTL-20100830ABQ	App.	Phoenix, AZ	25	2,807,265	71	<0.1

POWER DENSITY CALCULATION  
PROPOSED K54GI-D  
CHANNEL 25 – FLAGSTAFF, ARIZONA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Flagstaff facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1.2 kw, an antenna radiation center 10 meters above ground, and the vertical pattern of the Andrew (ERI) antenna, maximum power density two meters above ground of  $0.00058 \text{ mw/cm}^2$  is calculated to occur 7 meters south of the base of the tower. Since this is only 1.6 percent of the  $0.36 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 25 (536-542 MHz), this proposal may be excluded from consideration with respect to public exposure to nonionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive nonionizing radiation.