

ENGINEERING REPORT

FM Translator Minor Construction Permit Application

for

**K252FG.L - Page, AZ
(Facility ID: 141431)**

as an AM Fill-In Translator for

KPGE(AM) - Page, AZ

August 2016

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(Exhibit numbering is in response to FCC Online Form 349, Section III-A)

Discussion

This firm has been retained to prepare the required engineering report in support of a Minor Construction Permit Application for FM Translator K252FG.L - Page, AZ (Facility ID: 141431). Continued operation on CH252D (98.3 MHz) with 0.250 kW ERP (H&V) at a corrected antenna COR of 1737 meters AMSL is proposed. The Fill-In Translator will continue to rebroadcast Class C AM Primary Station KPGE(AM) - Page, AZ (1340 kHz); Facility ID No. 36349. The Translator will continue to serve the community of Page, AZ.

The Translator will remain mounted on an existing 37 meter AGL tower which does not require Antenna Structure Registration. A copy of USGS Topographic Mapping and Aerial Photography of the existing site has been included in **Exhibit(s) 13.1(a-b)**. The vertical antenna system has been included in **Exhibit 13.2**. As this proposal will not increase the overall tower height, notification to the FAA is not believed required.

It has been determined the Translator may be used in the area without interference to any existing FM broadcast station or facility. General allocation details are found in **Exhibit 13.5**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The applicant would like to note use of the Globe 1 km terrain database for the HAAT showings contained here-in.

The proposed 60 dBμ contour of the Fill-In Translator lies wholly inside of the AM primary daytime 2.0 mV/m contour and a 25 mile radius around the AM site. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 13.4**.

Regarding protection of international concerns, the proposed facility will remain more than 320 km from the common border between the United States and Canada or Mexico. As a result, no further international showings are believed required.

The proposed operating parameters have been changed from the present values. A map of the proposed service contour has been included in **Exhibit 13.3**.


RADIATION PROTECTION: The Commission requires an engineering study regarding compliance with the guidelines for human protection from radiofrequency radiation. This report section is in response to that provision of the Rules. The current Federal Communications Commission guidelines for RF radiation protection are set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01).

The FM Broadcast facility proposed in this application will not produce human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. **Exhibit 17.1** provides the details of the study that was made to demonstrate compliance. The facility is properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.

Discussion (continued)

DISTANCES TO CONTOURS: The following tabulation of the distances to the proposed service contours results from calculations performed in accordance with §73.313(d) and §73.333 Figure 1.

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Antenna Height Above Average Terrain (HAAT) Calculator

Values for antenna height above average terrain (commonly abbreviated "HAAT") can be calculated using this form. Two terrain databases are available here: the FCC's legacy 30-second terrain database, and the [GLOBE 1 km Base Elevation](http://www.ngdc.noaa.gov/mgg/topo/globe.html) (<http://www.ngdc.noaa.gov/mgg/topo/globe.html>) database from the [National Geophysical Data Center](http://www.ngdc.noaa.gov/) (<http://www.ngdc.noaa.gov/>). Using GLOBE, HAAT values can be calculated for any location on Earth, given coordinates and an antenna radiation center height above mean sea level (usually correlating to the physical center of the antenna). [More about HAAT](#) below the form.

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude 37° 0' 37" North
Longitude 111° 40' 48" West (NAD 27)

These coordinates convert to NAD 83 coordinates of
37° 00' 36.95", North, 111° 40' 50.60" West (NAD 83).

Height of antenna radiation center above mean sea level: 1737 meters AMSL

Number of Evenly Spaced Radials = 12 0° is referenced to True North

Results

Calculated HAAT = 268 meters

Antenna Height Above Average Terrain calculated
using 1 km GLOBE terrain data

Individual "Radial HAAT" Values, in meters

0°	389.9 m
30°	350.3 m
60°	506.8 m
90°	525.3 m
120°	391.2 m
150°	209.8 m
180°	0.7 m
210°	-20.5 m
240°	130.1 m
270°	206.1 m
300°	207.9 m
330°	315.5 m