

ENGINEERING REPORT

**FM Translator
Minor Construction
Permit Application**

for

**W276DA.L - Charlottesville, VA
(Facility ID: 141162)**

**"Minor Change in Frequency,
Power & Directional Antenna"**

for

**CH275D.P - Charlottesville, VA
as an AM Fill-In Translator for
WVAX(AM) - Charlottesville, VA**

July 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 Modification Application for FM Translator W276DA.L - Charlottesville, VA (Facility ID: 141162). This Translator proposal requests operation from the same site location, but on a new adjacent channel operational frequency. Operation on CH275D (102.9 MHz) with 0.084 kW ERP (H&V) at 476 meters AMSL is proposed. The Fill-In Translator will continue to rebroadcast Class C AM Primary Station WVAX(AM) - Charlottesville, VA (1450 kHz); Facility ID No. 161156. The Translator will continue to serve the community of Charlottesville, VA.

The Translator will be mounted on the existing tower bearing Antenna Structure Registration Number 1015412. A copy of the existing ASR has been included in **Exhibit 13.1**. The vertical antenna system has been included in **Exhibit 13.3**. 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 with the exception of WZGN(FM) and WMRY(FM). General allocation details are found in **Exhibit 13.6**. A §74.1204(d) Second and/or Third Adjacent Channel Given Interference Waiver Request toward WZGN(FM).L - Crozet, VA (CH272A) and WMRY(FM).L - Crozet, VA (CH278A) has been made here-in. Full protection will be afforded each facility based on a worst case calculated 105.2 dB μ F(50:10) Interference Area. The Interference Area is void of housing, buildings or major roads as noted in the **Exhibit 13.8** showing. The applicant would like to note the existence of multiple dedicated transmitter buildings or agricultural structures located at the remote mountain top site. However structures of this nature have been exempt as a matter of FCC Policy. There are two facilities, existing or proposed, close enough to merit further study. Therefore supplemental contour protection studies have been included for east as noted in **Exhibit(s) 13.7(a-b)**. It is believed sufficient clearance exists precluding the need for additional contour protection showings. A copy of the antenna manufacturer's directional antenna pattern documentation has been included in **Exhibit 13.9**.

The applicant would like to note use of the NED 03 second terrain database for all allocation, contour and HAAT showings contained here-in.

The proposed 60 dB μ 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 13.5**.

Regarding protection of international concerns, the facility is and 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 present and proposed service contours has been included in **Exhibit 13.4**.

Discussion (continued)

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 §1.1307(b)(3) of the Commission's rules concerning RF contributors of less than 5%. **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.

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.

N. Lat. = 375906.0 W. Lng. = 782848.0 HAAT and Distance to Contour, FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	142.9	333.1	0.0510	-12.93	0.779	15.94
030	138.6	337.4	0.0830	-10.81	0.994	18.22
060	146.7	329.3	0.0603	-12.20	0.847	16.57
090	116.3	359.7	0.0160	-17.97	0.436	12.44
120	120.9	355.1	0.0001	-39.63	0.036	2.14
150	134.2	341.8	0.0001	-41.21	0.030	1.79
180	139.0	337.0	0.0001	-39.39	0.037	2.18
210	171.9	304.1	0.0001	-38.72	0.040	2.29
240	171.4	304.6	0.0001	-38.94	0.039	2.24
270	224.6	251.4	0.0001	-41.21	0.030	1.75
300	185.9	290.1	0.0001	-41.21	0.030	1.76
330	163.2	312.8	0.0091	-20.39	0.330	10.09

Ave El= 154.62 M HAAT= 321.38 M AMSL= 476