



## **Engineering Statement**

### **Minor Change Application for WHUT Channel 33 at Washington, DC November 24, 2017**

This Engineering Statement has been prepared on behalf of Howard University (WHUT), licensee of Full Power Digital TV Station WHUT at Washington, DC. The statement was prepared in support of a Minor Change Construction Permit Application seeking to increase Effective Radiated Power (ERP) from the currently authorized 100KW to the new proposed 265KW.

This Minor Change Application is being filed pursuant to the lifting of the Freeze of Minor Change Applications on November 28, 2017 as part of the FCC's post-auction repacking process. WHUT is a Non-Repack station and will not be changing channels in the FCC's repacking process. However, WHUT would like to modify its existing facilities to increase ERP to 265KW as proposed herein.

Following the FCC prescribed procedures, WHUT respectfully files the accompanying Minor Change Application in accordance with the procedures released by the FCC in a Public Notice DA-17-1086 dated November 6, 2017 regarding filing procedures for such situations.



The parameters of the proposed facility are as follows:

**Proposed Parameters:**

Transmitter Location:	38-57-01.0 N 77-04-46.0 W (NAD 83)
ASRN:	1051670
Channel:	33
ERP:	265 KW
Emission Mask:	Full Service
Antenna Pattern:	Non-Directional (Omni)
Antenna Manufacturer:	Dielectric
Antenna Model:	TUP-04-12-2
Antenna RCAGL:	202.3 Meters
Overall Structure AGL:	210.9 Meters
RCAMSL	327.2 Meters

**Interference Study:**

An interference study was undertaken utilizing the FCC's TVStudy program to analyze the co-channel and adjacent channel interference scenarios for the new ERP.

The results of the study indicated that no impermissible interference would result from the proposed operations.

Based upon the forgoing interference study, it is believed that the proposed facility can operate without any impermissible interference to other stations.

**RF Exposure Study:**

Furthermore, a study was conducted to determine compliance with the RF Radiation Maximum Permissible Exposure (MPE) limits of the proposed operation. The study was conducted using the methodology outlined in the FCC's OET Bulletin 65 regarding RF Radiation Compliance.

The study utilized the existing antenna height of 202.3 meters AGL and a reference height of 2 meters AGL for the reference location. This yields a distance from the antenna of 200.3 meters.

The proposed antenna elevation pattern indicates that the downward radiation from the antenna from 25° to 90° below horizontal has a maximum relative field value of 0.1. This value was used in conjunction with the distance from the antenna and the prescribed



formula from OET Bulletin 65 to determine a maximum predicted power density of  $22.1\mu\text{W}/\text{cm}^2$  at 2 meters above ground level near the base of the tower. The Maximum Permissible Exposure Level (MPE) for the Uncontrolled/General Population environment for Channel 33 is approximately  $391.3\mu\text{W}/\text{cm}^2$ . Thus, the proposal is approximately 5.6% of the General Population MPE level and well within the allowable limit.

Based upon the forgoing it is believed that the proposed facility is in compliance with the required RF Exposure limits.

The licensee and all station personnel and contractors are required to follow appropriate safety procedures before the commencement of any work on the tower or in close proximity to the antenna. These procedures including reducing power or turning off the transmitter before any work is undertaken at the site. The licensee in coordination with any other users of the site must reduce power or cease operations as necessary to ensure workers having access to the site, tower, and antenna locations are not exposed to RF Radiation levels in excess of those prescribed by FCC Guidelines.

November 24, 2017

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