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MARANATHA BROADCASTING COMPANY, INCORPORATED

LICENSEE OF

WFMZ-DT CHANNEL 46

ALLENTOWN, PENNSYLVANIA

FCC FACILITY ID # 39884

**BLCDT-20100126ABW – REF DATA & SITE 1
BPCDT-20101214AAB NEW DTS – SITE 2**

**APPLICATION FOR AN STA TO CONSTRUCT AN INTERIM DIGITAL
TRANSMISSION SYSTEM (DTS)**

FOR WFMZ-DT

SITE NUMBER 2 RFR EXHIBIT

AMENDED EXHIBIT 59

April 13, 2013

MARANATHA BROADCASTING COMPANY, INCORPORATED

LICENSEE OF

WFMZ-DT CHANNEL 46

ALLENTOWN, PENNSYLVANIA

FCC FACILITY ID # 39884

BLCDT-20100126ABW – REF DATA & SITE 1

BPCDT-20101214AAB -- NEW DTS – SITE 2

**MINOR AMANEDMENT APPLICATION FOR AUTHORITY TO CONSTRUCT DIGITAL
TRANSMISSION SYSTEM (DTS)**

FOR WFMZ-DT

AMENDED ENGINEERING EXHIBIT 59 –SITE 2

**AMENDED RFR STUDY AND REQUEST FOR “NO CONDITION” WITH RESPECT
TO WNWR**

**THE FACILITIES PROPOSED HEREIN HAVE PREVIOUSLY BEEN
APPROVED FOR RFR AND AM PROTECTION IN BLSTA-20101214AAN AND NO
CHANGES TO EXISTING ANTENNA AND TRANSMISSION LINE ARE PROPOSED
HEREIN. Updated 05/31/2013.**

We propose to operate from an existing tower located within the Philadelphia Roxborough “antenna farm” at the foot of Culp Street. The proposed PSI Model PSILPAD-6-46-Special directional DTS transmitting antenna will be located at 272 meters AG oriented to 90 degrees True and will utilize 3.5 degrees of electrical beam tilt. The maximum STA ERP will be 1.8 kW circular polarization (3.6 kW Total) at –3.5 degrees from the horizontal.

The instant application is excluded under 1.1306. Using the procedures outlined in OET

Bulletin 65, Edition 97-01 and specifically Equation 10, Page 21, and Appendix 1, Table 1, I have evaluated the RFR energy radiation from the antenna system of the proposed WFMZ-DT DTS STA Site 2 transmitter as follows:

The proposed WFMZ-DT DTS STA is one of several television and FM broadcast antennas at the station location required to be considered by 47 CFR 1.1307(b). As shown below, the proposed DTS operation qualifies under the “less than 5%” Rule regarding contribution to existing RFR levels.

WFMZ-DT DTS STA, Channel 46, is currently operating with a maximum ERP of 1.8 kilowatts (average power) (DA) with circular polarization (3.6 kW total). The proposed WFMZ-DT DTS transmitting antennas a PSI Model PSILPAD-6-46-Special 6 bay medium gain unit with a maximum elevation power gain of 6X side mounted with a base approximately 270 meters up the tower. The antenna elevation gain results in the ERP, at angle's greater than +/- 10 degrees from the horizon (including the electrical beam tilt), to be at least 6 dB below the main lobe ERP.

Utilizing Table 1 of OET 65, the maximum occupational/controlled exposure level for this frequency is 2217 uW/cm^2 Using Equation 10, Page 21, the distance to the 2217 uW/cm^2 contour is 1.4 meters. For general population/uncontrolled environment the maximum exposure level is 443.4 uW/cm^2 . Again using Equation 10, the nearest vertical distance to the 443.4 uW/cm^2 contour is 8.4 meters. Since the base of the antenna is approximately 270 meters above the ground the height of the structure limits the possible excessive RFR values to at least 264.2 meters above the ground. Using Equation 10 of OET Bulletin 65, and utilizing the average RF power corrected for steep angles, the actual calculated maximum RF level at 2 meters above the ground from the proposed WFMZ-DT DTS Site 2 antenna will not exceed 0.3 uW/cm^2 or 0.06 % of the allowable for the uncontrolled/general public continuous exposure value at 665 MHz. This value is less than 5% of the OET-65 allowable exposure for the uncontrolled/general public.

Therefore the total levels of all RFR energy sources at all points on the ground will continue to be below that required for protection of both the employees and the general public as

required by ANSI 95.1-1992 or FCC OET 65, Edition 97-01. The combination of the additional calculated RFR energy level do not exceed 0.06 % of allowable for uncontrolled/general population at VHF and UHF TV frequencies anywhere of the ground in the area of the tower. Neither workers nor the public will be exposed to electromagnetic fields exceeding the maximum permissible exposure (MPE) levels set forth in Section 1.1310 of the Rules. The antenna supporting structure is completely enclosed by a chain-link fence to prevent unauthorized entry.

As a precaution to employees, suitable signs have been posted at the base of the tower supporting the proposed WFMZ-DT DTS Site 2 antenna alerting maintenance personnel to the presence of RFR energy so that appropriate action can be taken when access on the tower is required.

The applicant further states that he has prepared electromagnetic radiation abatement plan to educate employees and workers as to the potential hazards when working on the tower. Where radio frequency fields in excess of FCC guidelines are predicted to be encountered (very near the station's transmission antenna), signs and protective devices shall secure the area affected from the general public. With respect to direct employees of this licensee, OSHA RFR guidelines will be observed. Contractors and other outside workers potentially exposed to such areas shall be advised of the hazard by posted notices or other means. The station will reduce power or cease operation, if necessary in order to protect workers on the tower.

With these procedures in place, we believe the proposed WFMZ-DT DTS Site 2 operation is in compliance with the RFR energy protection requirements of 47 CFR 1.1307(b).

FAA AND AM STATIONS AND REQUEST FOR “NO CONDITION” WITH RESPECT TO WNWR

The FAA has not been notified since the tower exists. The registration number is 1035474. WNWR(AM) is located within 3.2 km of this site. The antenna and transmitter utilized herein is already installed on the tower and utilizing a side mounted antenna qualifies under current staff policy as “maintenance” since there will be no electrical disturbance or tower

height changes that could affect WNWR(AM). For the reasons just stated, Maranatha hereby requests that the commission does not apply a “Condition” on the Construction Permit with respect to WNWR.