

TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
TV STATION WOLE-DT
AGUADILLA, PUERTO RICO
CHANNEL 12 44 KW (DA) 628 M

1. This instant application, as hereby amended, * proposes to modify the WOLE-DT licensed operation (CDBS File No. BLCDT-20091013ADZ, Facility ID 71725) on channel 12 at Aguadilla, Puerto Rico. Specifically, the purpose is to change transmitter site and operate with a directional antenna maximum ERP of 44 kW and an HAAT of 628 meters using an ERI[†] model ATW6V8-ESWC-12H elliptically polarized antenna system incorporating 2 degrees of electrical beam tilt. There will be no change in the overall structure height of the existing tower that will be utilized for the proposed operation (ASRN 1011580).

2. Freeze Compliance: Figure 1 shows the predicted 36 dBu contours for the licensed and proposed WOLE-DT operations. As indicated, the proposed 36 dBu contour is entirely within the licensed 36 dBu contour. Therefore, the proposal is believed to be in compliance with the FCC's 4/05/2013 Freeze Order Public Notice (DA 13-618).

3. Section 73.622(f)(5) Compliance: It is proposed operate on channel 12 with a directional antenna maximum ERP of 44 kW and an HAAT of 628 meters. These facilities exceed the nominal maximum facilities specified in Section 73.622(f)(7)(ii). However, the licensed facilities, which exceed the proposed facilities, were authorized based on the largest station provision of Section 73.622(f)(5). Therefore, it is believed that the proposed facilities also comply with the largest station provision of Section 73.622(f)(5). Clarification of the largest station provision is provided in the *Report and Order and Further Notice of Proposed Rule Making* in MM Docket No. 00-39 at paragraphs 73-74.

4. As demonstrated in the *TVStudy* analysis exhibit, the proposal complies with the FCC's interference protection requirements based on a cell size of 2 km and profile resolution of 1 point/km.

* See FCC File No. 0000067092.

[†] Electronics Research, Inc.

5. Notification of Arecibo Observatory: Studies were conducted of the licensed and proposed WOLE-TV facilities to evaluate the potential effect of the change on the Arecibo Observatory. The results indicate that the WOLE-TV proposed facility does not increase the potential for interference to the Arecibo Observatory. Specifically, the proposed facility will be located at 33.1 km from the observatory, which is an increase in distance separation of 0.4 km compared to the licensed WOLE-TV facility. In addition, the proposed facility will be lower in height above mean sea level, lower in effective radiated power, with no meaningful change in the intervening terrain obstructions into the observatory location. Therefore, pursuant to the FCC's Rules and Regulations, notification to the observatory of the proposed modification is deemed to be unnecessary.[‡]

5. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna will be located 61.3 meters above ground level. The total DTV ERP is 57.2 kW (44 kW horizontal polarization, 13.2 kW vertical polarization). A conservative vertical plane relative field value of 0.15 is presumed for the antenna's downward radiation in both the horizontal and vertical planes of polarization (for angles below 60 degrees downward, see antenna elevation pattern data included with application). The calculated power density at a point 2 meters above ground level is 12.2 uW/cm² which is 6% of the FCC's recommended limit of 200 uW/cm² for channel 12 for an uncontrolled environment.

However, as this is a multiple-user site all existing and authorized broadcast facilities in the vicinity must be considered in the RFR evaluation. The calculations are summarized below:

[‡] See Section 73.1030 of the FCC Rules and the *Report and Order* in ET Docket No. 96-2, FCC 97-347, Released: October 15, 1997.

| Station | Total ERP (kW) [§] | Radial Distance to Test Point (m) | Relative Field Factor** | Calculated Power Density/ANSI Limit (uW/cm ²) | Fraction of ANSI Limit |
|-------------|-----------------------------|-----------------------------------|-------------------------|---|------------------------|
| Proposed | 57.2 | 59 | 0.15 | 12.2/200 | 0.06 |
| WORA-TV | 1000 | 81 | 0.086 | 38.0/375.3 | 0.10 |
| WIVA (Aux.) | 23 | 65 | 0.15 | 4.1/200 | 0.02 |
| W05CY-D | 3 | 48 | 0.1 | 0.44/200 | 0.002 |

The summation of the above fractions of the ANSI limit for each of the above stations is 0.182. Since this is less than unity, the combined power density at 2 meters above ground level will be less than the ANSI recommended limit applicable to general population / uncontrolled exposure areas. Thus, it is believed that the proposed WOLE-DT facility is in full compliance with the FCC's requirements with regard to radio frequency radiation exposure.

Access to the transmitting site is restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

[§] For FM stations this includes ERP in both horizontal and vertical planes. For DTV stations this includes the horizontally and vertically (if applicable) polarized ERP.

** This factor was conservatively estimated based on typical vertical plane radiation patterns.