
Consultants in Electronic Media Technology/Management

**Technical Statement for
WTVE License Company LLC
Special Temporary Authorization (STA):**

**WTVE-DT
Channel 25
Reading, PA**

Construction Permit in File No. BMPCDT-20081027ACR

Introduction

This Technical Statement provides the supplemental technical data and information required for an informal Engineering Special Temporary Authorization (STA) application filed through the FCC Electronic Filing System by WTVE License Company LLC (“WTVE”) for its digital television facilities at Reading, PA. WTVE seeks an STA to operate its digital television station, Station WTVE-DT, on Channel 25, with a temporary antenna for a limited period during July and August, 2009. The temporary antenna is needed to permit the replacement by Station WUVP of its antenna, which surmounts the authorized WTVE antenna, while both keeping WTVE on the air and providing the necessary RF radiation protection to workers who will be doing the antenna replacement for WUVP. The currently authorized WTVE construction permit is in File Number BMPCDT-20081027ACR. The current application seeks both to operate with a change in the antenna pattern and an increase in the effective radiated power of the WTVE facility due to the antenna radiation center height being reduced significantly. The transmitter location will be unchanged.

STA Facility

Three changes from the construction permit facility are proposed in the current application: a change in antenna pattern, a decrease in antenna height from 354.5 m to 245.7 m above ground level, and an increase in effective radiated power from 126 kW to 200 kW. The complete technical specifications of the proposed STA facility are given in Figure 1 below.

The power requested is the highest power level that will allow the predicted noise-limited contour (PNLC) of the proposed STA facility to be contained within the equivalent contour of the authorized construction permit facility. The contour analyses were performed using the EDX SignalPro software, applying the methods of §73.625(b),¹ with radial spacing set at 1-degree intervals around the compass. A comparison of the PNLC authorized by the current WTVE construction permit and the PNLC of the proposed temporary antenna is provided below in Figure 2.

The antenna proposed for use by WTVE-DT is an array of 24 panels, in two columns of 12 panels each, having 1.1 degrees of electrical beam tilt. The antenna will be oriented to place the reference direction of the azimuth pattern at 230 degrees true. Due to the short-term nature of the requested STA, plots and tabulations of the antenna pattern are not included herein but can be supplied upon request.

Environmental Impact / Radio Frequency Radiation

None of the conditions specified in §1.1307 that would require the preparation of an Environmental Assessment pertain with respect to the proposed facility at the Roxborough site. In particular, because the antenna will be mounted on an existing tower at an existing site, the temporary operation does not implicate many of the causes for further investigation and preparation of further reports.

With respect to Radio Frequency Radiation (RFR), the Maximum Permissible Exposure (MPE) limits in §1.1310 for both General Population/Uncontrolled Exposure and Occupational/Controlled Exposure are computed not to be exceeded in the area on the

¹ The EDX SignalPro software has been carefully evaluated at the Fortran code level to confirm that it conforms exactly to the contour distance determination methods specified in §73.625(b).

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ground surrounding the tower, as determined using methods of OET Bulletin Number 65 and Supplement A thereto (Edition 97-01). Indeed, they are calculated to be well below one percent of the General Population MPE.

Far more significant than the radiation level relative to MPE, in this case, however, is the fact that the temporary antenna will be installed to permit the installation crew replacing the WUVP antenna to work on the antenna stack without the RF field from the regular WTVE-DT antenna causing them harm. Nevertheless, in order to access the WUVP antenna, the workers will have to transit the region on the tower in which the temporary WTVE-DT antenna will be mounted. To the extent possible, this will be arranged to occur in the area behind the antenna, where its azimuth pattern produces lower level field strengths. In spite of this, such an arrangement may not be sufficient to keep the level below the Occupational/Controlled Exposure MPE. Measurements will be made during the initial phases of the installation operation to determine what is required to assure worker safety, and this may include turning off the WTVE-DT transmitter during periods when the crew is traveling to or from the top of the antenna stack, where the WUVP antenna is mounted.

WTVE takes seriously its responsibility for worker safety in areas proximate to its equipment. It is and will be continuing to work cooperatively with the other broadcasters who occupy the shared tower facility on which its antenna is located. This is particularly true with respect to the licensee of WUVP, whose antenna is supported by the normal WTVE antenna and with whom WTVE is working closely to help assure a smooth and safe antenna replacement operation for that station.

Summary

WTVE-DT requests the STA facilities described in the informal application and herein to help it meet its obligations to provide a safe work environment for the contractors of another broadcaster that must replace its antenna to complete its DTV transition. The antenna replacement operation is expected to begin near the end of July, 2009, and to last less than two weeks. This STA is needed to be effective prior to that time so that the antenna replacement operation can proceed on schedule.

**Figure 1 — Technical Specifications — Temporary WTVE-DT Facility
Channel 25 — Reading, PA**

Frequency

Channel	25
Frequency Band	536 - 542 MHz
Center Frequency	539 MHz

Location

Site	Roxborough Antenna Farm, Philadelphia, PA
Geographic Coordinates (NAD27)	40° 02' 29.56" N 75° 14' 12.89" W
Tower Registration (FAA Study Number)	1231524 (2008-AEA-3763-OE)

Elevation

Elevation of site above mean sea level	89.0 m
Overall height of tower above site elevation	383.1 m
Overall height of tower above mean sea level	472.1 m
Height of antenna radiation center above site elevation	245.7 m
Elevation of average terrain (45-degree spaced radials, 3.2-16.1 km)	65.1 m
Height of antenna radiation center above mean sea level	334.7 m
Height of antenna radiation center above average terrain (HAAT)	269.6 m

Antenna

Manufacturer	RFS
Model	PHP24B
Description	Side-Mounted UHF Panel Array
Orientation (direction of primary axis of azimuth pattern)	230 degrees true
Electrical beam tilt	1.1°
Mechanical beam tilt	0.5° toward 90 degrees true
Polarization	Horizontal
Gain (peak of beam – 1.1° depression)	75.16 (18.76 dB)
Gain (in horizontal plane – 0° depression)	40.36 (16.06 dB)

Power (Without Effects of Mechanical Beam Tilt)

Effective radiated power (ERP) (main beam – 1.1° depression)	221.0 kW
Effective radiated power (ERP) (horizontal plane)	118.7 kW

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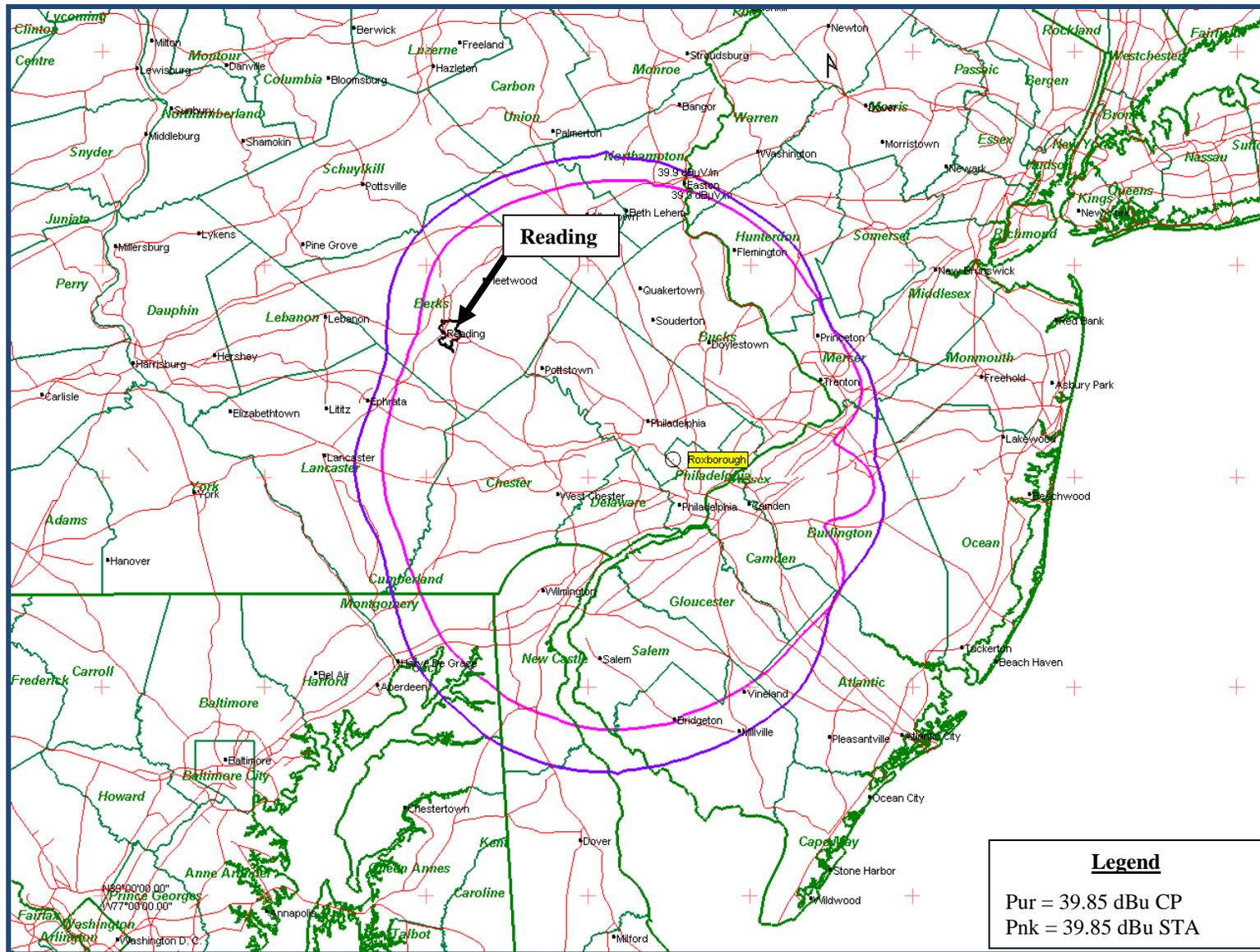


Figure 2 —WTVE-DT Proposed STA Facility & CP Contours