



STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN  
APPLICATION TO MODIFY A CONSTRUCTION PERMIT  
BPCDT-19991101AKK  
WUXP-DT - NASHVILLE, TENNESSEE  
DTV - CH. 21 - 1000 kW - 413 M HAAT

Prepared for: Mission Broadcasting I, Inc.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a registered Professional Engineer in the Commonwealth of Virginia, Registration No. 7418, and in the State of New York, Registration No. 63418.

**GENERAL**

This office has been authorized by Mission Broadcasting I, Inc., licensee of WUXP-TV, channel 30, Nashville, Tennessee, and permittee of paired DTV station WUXP-DT, channel 21, Nashville, Tennessee, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of an Application to Amend the Construction Permit BPCDT-19991101AKK for digital transmission facilities on Channel 21, the DTV allotment for WUXP-TV. The facility proposed herein differs from the existing Construction Permit in that it is proposed to locate WUXP-DT on a new support structure at 36E 15' 50" N latitude, 86E 47' 39" W longitude; FAA Antenna Structure Registration Number 1224078. This new structure is owned by American Tower Corporation, and has been registered at a site located approximately 7 meters from the existing tower support

structure specified in WUXP-DT's Construction Permit. The new structure is intended for use by multiple NTSC and DTV stations in the Nashville market. Additionally, it is proposed herein to reduce the antenna radiation center Height Above Average Terrain (HAAT) specified in the permit, 430 meters, to 413 meters; a reduction of 17 meters. It is also proposed to alter the antenna elevation pattern, however, the azimuth pattern and orientation of the antenna is the same as that currently approved by the Commission in the existing Construction Permit, and therefore there will be no change in ERP radiated in any azimuthal direction. The instant proposed facility of WUXP-DT is identical to that reflected in the existing Construction Permit in all other respects. This Application for Modification of Construction Permit complies with all applicable FCC Rules pertaining to DTV.

### **PROPOSED DIRECTIONAL ANTENNA**

It is proposed to install a directional antenna, Dielectric model TFU-24DSC-R C170, which has the same "cardioid" azimuth pattern as the antenna, Dielectric model TFU-18GTH-R C170, specified in WUXP-DT's current Construction Permit. This antenna, when installed as proposed, will support the existing WUXP-TV NTSC antenna. In a separate application the licensee proposes to relocate the WUXP-TV NTSC antenna to this site.

Attached as Exhibit 1 is a polar plot of the proposed antenna's horizontal plane radiation pattern in relative field. Exhibit 2 is a tabulation of the proposed directional antenna's horizontal plane radiation pattern at ten-degree intervals in relative field, kW and dBk.

In addition, the proposed directional transmitting antenna shall employ an electrical beam tilt of 0.75 degrees below the horizontal plane. The antenna manufacturer's vertical plane radiation pattern, illustrating the proposed antenna's radiation characteristics above and below the horizontal plane, is attached hereto as Exhibit 3, and tabulated in Exhibit 4. A Vertical Plan Antenna Sketch is provided in Exhibit 5.

### **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours, shown in Exhibit 6, were calculated in accordance with the method described in Section 73.625 of the Rules, utilizing the appropriate F(50,90) propagation curves, power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. The predicted WUXP-DT 48 dBF signal contour encompasses the entire principal community of license, as required in Section 73.625(a) of the Commission's Rules. The predicted 41 dBF contour is also shown in Exhibit 6 and shows the same coverage area compared to that authorized by the existing Construction Permit, BMPCT-19991101AKK.

## **ENVIRONMENTAL CONSIDERATIONS**

### **GENERAL**

The proposal described herein meets the criteria specified in Section 1.1306 of the FCC Rules and Regulations as an action that is categorically excluded from environmental processing. The proposed DTV facility involves neither a site location specified under Section 1.1307(a)(1)-(7) of the Rules nor high intensity lighting as specified in Section 1.1307(a)(8).

### **RADIO FREQUENCY IMPACT**

Effective October 15, 1997, the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The new guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986), and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, Inc. (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The newly adopted guidelines provide a maximum permissible exposure (MPE) level for occupational or "controlled" situations as well as "uncontrolled" situations that apply in cases that affect the general public. The FCC's Office of Engineering and Technology (OET) Commission has issued a revised technical bulletin (OET Bulletin No. 65) entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), to aid in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radio frequency

electromagnetic fields as adopted by the Commission in 1996. The revised Bulletin contains updated and additional technical information for evaluating compliance with the new FCC policies and guidelines.

The newly adopted FCC MPE level for “uncontrolled” environments is derived from the formula,  $(\text{frequency}/1500)$ , for UHF TV stations. The MPE level for UHF stations in a “controlled” environment is derived from the formula,  $(\text{frequency}/300)$ . We must consider the contributions of our own station, WUXP-DT channel 21, and the other proposed and existing stations at the proposed site. For WUXP-DT, which operates on television Channel 21 (569 MHz), the MPE is 0.379 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) in an “uncontrolled” environment and 1.895  $\text{mW}/\text{cm}^2$  in a “controlled” environment.

The proposed WUXP-DT facility will operate with a maximum ERP of 1000 kW from a horizontally polarized directional transmitting antenna with a centerline height of 352 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the WUXP-DT facility produces a predicted power density at two meters above ground level of .02454  $\text{mW}/\text{cm}^2$ , which is 7.15% of the new FCC guideline value for “uncontrolled” environments, and 1.43% of the new FCC guideline value for “controlled” environments (see Appendix A).

The total percentage of the ANSI value at the proposed site, considering the cumulative radiation of all stations at the site, is only 76.69% of the limit for “uncontrolled” environments, and 15.34% of the limit for “controlled” environments.

**OCCUPATIONAL SAFETY**

Based on the calculations discussed above, the cumulative predicted power density for the twelve co-located facilities would be only 15.34% of the FCC guideline value for “controlled” environments. The licensee of WUXP(TV) is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WUXP-DT antenna. The applicant is committed to reducing power and/or ceasing operation during times of service or maintenance of the transmission systems, when necessary, to ensure protection of personnel. As an additional safety measure, the base of the tower is fenced to preclude casual access.

In light of the above, the proposed WUXP-DT facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

**SUMMARY**

It is submitted that the proposal described herein complies with the Rules and Regulations of the Federal Communications Commission. This statement, FCC Form 301, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: May 16, 2001

---

John E. Hidle, P.E.