

## **TECHNICAL REPORT**

This technical report has been developed in support of a minor modification to the approved CP for WTNE-FM (BPH-20020109AAQ) at Trenton, TN. A change in tower site is proposed.

### **I. Allocation Analysis:**

The data for all terrain utilized in this report were obtained from the V-Soft PROBE II computer program, utilizing the NGDC thirty-second terrain database. The proposed 70 dBu (50,50) contour and the HAAT based on 8 equally-spaced radials were calculated utilizing the same program which is based on the Commission's own F5050 program and data points, and produces contours congruent with Section 73.333 propagation curves. A tabulation of the average terrain on the eight (8) equally-spaced radials is included as Exhibit E-2.

An allocation study is included as Exhibit E-1 demonstrating that WTNE-FM will be fully-spaced at the new site as a 73.207 facility.

Allocation exhibits provided are:

E-1 Allocation spacing study

E-2 Tabulation of HAAT based on eight equally-spaced radials

E-3 70 dBu contour plot

## **II. Site:**

A new 172 meter (563 ft) guyed steel tower will be constructed to support the ten bay antenna at coordinates **(NAD 27) N 35-44-40 W 88-53-50.**

## **III. Blanketing:**

The 115 dBu blanketing contour is calculated to be 2.79 km. The calculation was made in accordance with the Commission's formula:

$$115 \text{ dBu (km)} = 1.609 [ .245 (P \text{ kw})^{1/2} ].$$

The applicant accepts the responsibility for correction of any objectionable interference or blanketing problems in accordance with Commission rules.

## **IV. Antenna System and Environmental Considerations:**

The ten bay full-wavelength antenna will be mounted on a new 560 foot guyed-steel tower. To the applicant's knowledge, no adverse impact will result to any applicable 1.1307 category. Consequently, no environmental statement is provided. The RF contribution for WTNE-FM was calculated utilizing the Commission's FMMODEL program at a height 2 meters above ground level and assuming 50 kw ERP. The maximum radiation was found to be 7.44 microwatts/cm<sup>2</sup> at 37 meters, substantially below the 200 microwatts/cm<sup>2</sup> permissible for general public exposure.

**V. Conclusion:**

It is concluded that the proposed modification of the WTNE-FM CP is in full compliance with Commission rules and policies.

A handwritten signature in cursive script, reading "Charles M. Anderson", is written over a horizontal line.

Charles M. Anderson

December 16, 2003

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## C ANDERSON AND ASSOCIATES

## E-1 WTNE-FM Proposed Spacings

REFERENCE

35 44 40 N

CLASS = C2

DISPLAY DATES

DATA 12-06-03

88 53 50 W

Current Spacings

SEARCH 12-13-03

----- Channel 249 - 97.7 MHz -----

| Call   | Channel     | Location         | Dist      | Azi   | FCC   | Margin  |
|--------|-------------|------------------|-----------|-------|-------|---------|
| WTNEFM | CP -N 249C2 | Trenton          | TN 37.93  | 358.2 | 189.5 | -151.57 |
| WTNEFM | LIC 249C3   | Trenton          | TN 37.93  | 358.2 | 176.5 | -138.57 |
| ALLO   | RSV 249C3   | Trenton          | TN 37.93  | 358.2 | 176.5 | -138.57 |
| WSIXFM | LIC 250C    | Nashville        | TN 189.61 | 79.2  | 187.5 | 2.11    |
| KJSMFM | CP 249C1    | Augusta          | AR 235.50 | 255.1 | 223.5 | 12.00   |
| ALLO   | RSV 249C1   | Augusta          | AR 235.50 | 255.1 | 223.5 | 12.00   |
| WKJQFM | LIC-N 247A  | Parsons          | TN 71.12  | 97.3  | 54.5  | 16.62   |
| WWMS   | LIC 248C1   | Oxford           | MS 176.47 | 187.7 | 157.5 | 18.97   |
| KBXB   | LIC-N 250C2 | Sikeston         | MO 154.53 | 334.5 | 129.5 | 25.03   |
| WSRRFM | LIC 251C1   | Millington       | TN 106.48 | 232.2 | 78.5  | 27.98   |
| ALLO   | VAC 247A    | Tiptonville      | TN 87.50  | 323.8 | 54.5  | 33.00   |
| WLLX.C | CP -N 248C3 | Lawrenceburg     | TN 152.64 | 110.5 | 116.5 | 36.14   |
| ALLO   | VAC 250A    | Marietta         | MS 143.23 | 163.6 | 105.5 | 37.73   |
| WRIKFM | CP 252C1    | Metropolis       | IL 117.43 | 17.5  | 78.5  | 38.93   |
| WHRK   | LIC 246C1   | Memphis          | TN 118.95 | 241.1 | 78.5  | 40.45   |
| WLLX.A | APP-N 248C2 | Lawrenceburg     | TN 170.48 | 106.9 | 129.5 | 40.98   |
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| WLLX   | LIC 248A    | Lawrenceburg     | TN 154.60 | 112.5 | 105.5 | 49.10   |
| WKXMF  | APP-Z 249A  | Winfield         | AL 214.81 | 152.0 | 165.5 | 49.31   |
| KJSMFM | LIC 249C2   | Augusta          | AR 241.62 | 261.1 | 189.5 | 52.12   |
| WHRZ   | LIC 249A    | Providence       | KY 219.97 | 32.1  | 165.5 | 54.47   |
| RADD   | ADD 249A    | Winfield         | AL 221.41 | 150.9 | 165.5 | 55.91   |
| WQUL   | LIC 249A    | West Frankfort   | IL 223.04 | 359.2 | 165.5 | 57.54   |
| WZZP   | LIC 248A    | Hopkinsville     | KY 172.34 | 48.5  | 105.5 | 66.84   |
| KOEA   | LIC 248C2   | Doniphan         | MO 196.70 | 299.1 | 129.5 | 67.20   |
| RADD   | ADD 252C3   | Killen           | AL 145.28 | 125.6 | 55.5  | 89.78   |
| WRIKFM | LIC 252A    | Metropolis       | IL 156.68 | 8.0   | 54.5  | 102.18  |
| RADD   | ADD 249C2   | Potosi           | MO 300.53 | 326.1 | 189.5 | 111.03  |
| RADD   | ADD 249C2   | Potasi           | MO 300.53 | 326.1 | 189.5 | 111.03  |
| RDEL   | DEL 249C3   | Potosi           | MO 296.76 | 326.6 | 176.5 | 120.26  |
| KHZR   | LIC 249C3   | Potosi           | MO 296.76 | 326.6 | 176.5 | 120.26  |
| WKSFRM | LIC 252A    | Pulaski          | TN 176.90 | 111.6 | 54.5  | 122.40  |
| RDEL   | DEL 252A    | Pulaski          | TN 176.90 | 111.6 | 54.5  | 122.40  |
| RDEL   | DEL 252A    | Pulaski          | TN 176.90 | 111.6 | 54.5  | 122.40  |
| RDEL   | DEL 249C3   | Potasi           | MO 300.53 | 326.1 | 176.5 | 124.03  |
| RADD   | ADD 252C1   | Ardmore          | AL 210.13 | 114.6 | 78.5  | 131.63  |
| WKLD   | LIC-N 249A  | Oneonta          | AL 297.41 | 131.5 | 165.5 | 131.91  |
| WRQQ.A | APP 246C2   | Goodlettsville   | TN 202.78 | 71.7  | 57.5  | 145.28  |
| WRQQ   | LIC 246C2   | Goodlettsville   | TN 202.78 | 71.7  | 57.5  | 145.28  |
| RADD   | ADD 252C2   | Black Rock       | AR 206.80 | 281.4 | 57.5  | 149.30  |
| KYRX   | LIC 247A    | Marble Hill      | MO 210.16 | 330.2 | 54.5  | 155.66  |
| KFCM   | LIC 252C3   | Cherokee Village | AR 242.41 | 287.4 | 55.5  | 186.91  |
| RDEL   | DEL 252C3   | Cherokee Village | AR 242.41 | 287.4 | 55.5  | 186.91  |



# E-2 WTNE-FM Proposed HAAT Calculation

N. Lat. = 35 44 40 W. Lng. = 88 53 50

HAAT and Distance to Contour - FCC Method - 30 Arc Sec.

| Azi. | AV EL | HAAT  | ERP kW  | dBk   | Field | 60-F5 |
|------|-------|-------|---------|-------|-------|-------|
| 000  | 116.0 | 153.0 | 50.0000 | 16.99 | 1.000 | 52.59 |
| 045  | 132.2 | 136.8 | 50.0000 | 16.99 | 1.000 | 50.38 |
| 090  | 110.7 | 158.3 | 50.0000 | 16.99 | 1.000 | 53.25 |
| 135  | 137.8 | 131.2 | 50.0000 | 16.99 | 1.000 | 49.59 |
| 180  | 116.8 | 152.2 | 50.0000 | 16.99 | 1.000 | 52.48 |
| 225  | 115.7 | 153.3 | 50.0000 | 16.99 | 1.000 | 52.62 |
| 270  | 120.7 | 148.3 | 50.0000 | 16.99 | 1.000 | 51.97 |
| 315  | 102.0 | 167.0 | 50.0000 | 16.99 | 1.000 | 54.28 |

Ave El= 118.99 M HAAT= 150.01 M AMSL= 269 M

### E-3 WTNE-FM 70 dBu Plot

Latitude: 35-44-40 N  
Longitude: 088-53-50 W  
ERP: 50.00 kW  
Channel: 249  
Frequency: 97.7 MHz  
AMSL Height: 269.0 m  
Elevation: 113.0 m

