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VIRGINIA BEACH EDUCATIONAL BROADCASTING FOUNDATION

LICENSEE OF

W250AE, PORTSMOUTH VA

APPLICATION FOR A CONSTRUCTION PERMIT FOR A MINOR CHANGE IN FACILITIES FOR W250AE, PORTSMOUTH VA

FACILITY ID 18865

FCC FILE BLFT-20031214AAC

EXHIBIT EE-1

March 13, 2012

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VIRGINIA BEACH EDUCATIONAL BROADCASTING FOUNDATION

LICENSEE OF

W250AE, CHANNEL 250

PORTSMOUTH, VIRGINIA

FACILITY ID 18865

BLFT-20031214AAC

ENGINEERING EXHIBIT

1. INTRODUCTION AND BACKGROUND

Virginia Beach Educational Broadcasting Foundation (VBEBF), is the Licensee of W250AE, 97.9 Mhz, Channel 250 licensed to Portsmouth, Virginia. This Engineering Exhibit supports our application for a Construction Permit for a minor change to the licensed facilities of W250AE to fully protect relocated WGTI, Channel 249C2, Winfall, NC. FCC File no. BLED-201200308AWF.

2. FCC 349 EXHIBIT 12 - PROTECTION OF OTHER FACILITIES

This application is for a Construction Permit to change the licensed directional pattern in order to protect a recently relocated FM facility WGTI, Channel 249, Class C2, Winfall, NC, FCC File No. BLED-20120308ABW and to eliminate a requirement regarding protection of WGH-FM, Channel 247B, as a result of there now being zero population within the modified 117.6 dBu contour. No other changes are proposed.

For WGTI, Figure 1 attached hereto shows the original and the relocated WGTI F(50,50) 60 dBu protected contours. As a now Class C2 station, 74.1204(a)(3) requires that the 60 dBu contour is the required protected contour for Class C2 facilities. The instant application rotates the W250AE pattern so that the principal null is oriented towards WGTI. Previously the null was oriented to 90 degrees True. FCC Form 349 Tech Box shows the revised directional pattern proposed. The existing W250AE antenna will be oriented to match the pattern limits herein.

For WGH-FM, when W250AE was constructed the adjacent Norfolk and Western railway yard had an occupied building used for loading locally produced automobiles for shipment cross country. This use has been discontinued for several years as the supporting automotive operation has closed down. Thus, while a building is nearby, it like several others nearby, are no longer occupied and thus the need for a directional antenna to show zero population in the immediate area of the W250AE transmitting antenna affecting WGH-FM is no longer required.

Specifically, and as shown in Figure 2, the revised proposed W250AE, 3rd adjacent position with WGH-FM, requires that WGH-FM receive protection from the nominal W250AE 117.6 dBu direct line of sight contour. The requirement is now met by the lack of population with the changed W250AE facilities.

Thus, in this application, we are proposing 250 watts (DA) utilizing a directional transmitting antenna oriented to 0 degrees True. With this antenna and orientation, and as shown below, the proposed W250AE 117.6 dBu line of sight interference contour does not overlap any ***occupied*** buildings and therefore we believe this proposal does comply with the requirements of 74.1204(d).

Using the free space propagation formula, and with W250AE at 0.250 kW ERP, the W250AE 117.8 dBu line of sight contour extends as follows:

0 degrees, 0.146 km; 45 degrees, 0.146 km; 90 degrees, 0.146 km; 135 degrees, 0.085

km; 180 degrees, 0.075 km; 225 degrees, 0.085 km; 270 degrees, 0.146 km; and 315 degrees, 0.146 km from the W250AE antenna.

W250AE currently operates unattended and will continue such operation.

3. FCC 349 EXHIBIT 17 - ENVIRONMENTAL RFR CONSIDERATIONS

The instant application is excluded under 1.1306. Using the procedures outlined in OST Bulletin 65, Edition 97-01 and specifically Equation 10, Page 23, I have evaluated the RFR energy from the antenna system of W250AE as follows:

W250AE is the only broadcast antenna at the station location required to be considered by 47 CFR 1.1307(b).

W250AE, CH 250 will continue to operate with an ERP of 0.25 kilowatts (DA) vertical only. The proposed single bay PSI transmitting antenna is side mounted with the antenna approximately 12 meters up the tower. Utilizing Equation 10 without considering any elevation pattern attenuation, the required separation for the controlled environment is 2.9 meters. Again, utilizing Equation 10 without considering any elevation pattern attenuation, the required separation for the general public/uncontrolled environment is 6.5 meters. Since the antenna is 12 meters above the ground, the height of the structure limits the possible excessive radiation values to at least 5.5 meters above the ground.

Again using Equation 10, at a location 2 meters above ground, the predicted RFR energy is *83.4 uW/cm*^{2} or 41.7 % of the OET 65 allowable of 200 uW/cm^2 for the general public/uncontrolled environment at 97.9 Mhz.

Therefore the total levels of all RFR energy sources at all points on the ground are below that required for protection of both the employees and the general public as required by ANSI 95.1-1992. The radiofrequency levels do not exceed 83.4 uW/cm^2 anywhere on ground in the area of the tower.

As a precaution to employees, a suitable sign is posted at the base of the tower 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 during periods of maintenance where workers on the

tower could be exposed to excessive levels of RFR energy, any transmitting system that could pose a hazard will be either turned off or reduced in power to insure that workers are not subject to excessive values of RFR energy. With these procedures in place, we believe the proposed W250AE operation is in compliance with the RFR energy protection requirements of 47 CFR 1.1307(b).

4. AM STATION PROTECTION

There are 3 AM stations within 3.2 km of the W250AE transmitter site. They are WJOI at 3.1 km and WCPK and WHKT at 1.5 km. Since this application does not propose any changes to the existing W250AE antenna structure and transmission line, and the antenna supporting structure is only 20 meters tall, there will be no change to the RF environment with regard to AM station radiation patterns.

We therefore request that the Commission place no specific AM station protection requirement on this application as the proposal only involves a change of a side mounted antenna orientation.

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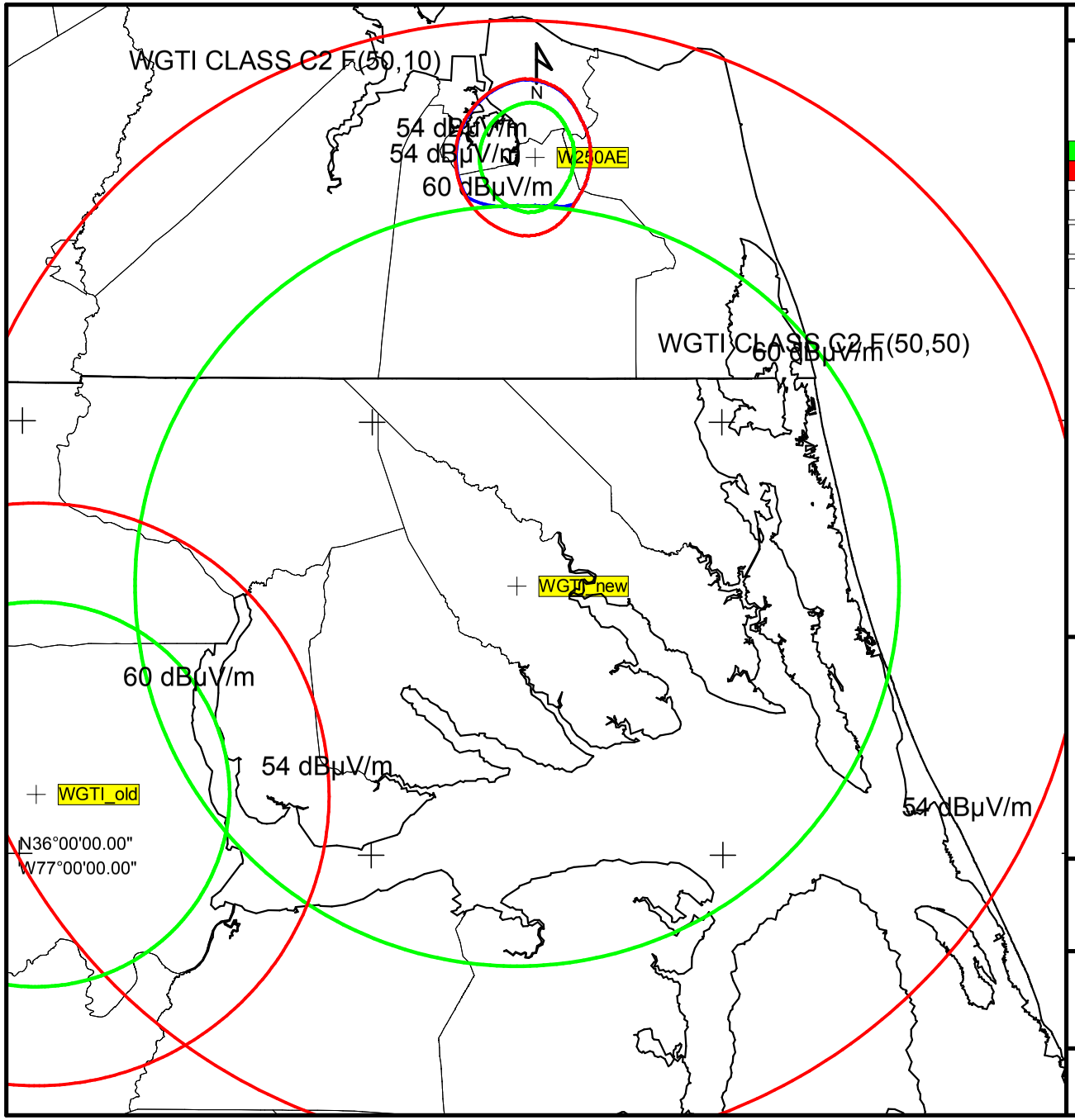

SIGNAL™: W250AE Mod_03102012.map

Interference contour study

Propagation methods:
service contour : FCC-FCC 50.0%
1st adjacent interference : FCC-FCC 10.0%

= 60.0 dBµV/m service contour
= 54.0 dBµV/m 1st adjacent interfere
quick contours
County Boundaries
State Boundaries

Sites

Site: PORTSMOUTH
N36°48'22.00" W76°16'01.00" 5.0 m
W250AE Tx.Ht.AGL: 12.0 m Total ERPd: -6.00dBkW
Grp: 1 directional-vertical/0.0° 97.9000 MHz

Site: WGTI_new
N36°18'40.00" W76°17'34.00" 5.0 m
WGTI_new Tx.Ht.AGL: 152.0 m Total ERPd: 14.91dBkW
Grp: 1 omni-horizontal/0.0° 97.7000 MHz

Site: Windsor old
N36°04'06.00" W76°58'35.00" 12.0 m
WGTI_old Tx.Ht.AGL: 92.0 m Total ERPd: 4.77dBkW
Grp: 1 omni-horizontal/0.0° 97.7000 MHz

Notes

Plot of 60 dBu and 54 dBu contours
showing WGTI Class C2 W250AE present
[60 dBu Green and 54 dBu RED] and
proposed W250AE F(50,10) 54 dBu {Blue}
contours and the WFTI 60 and 54 dBu.
contours.
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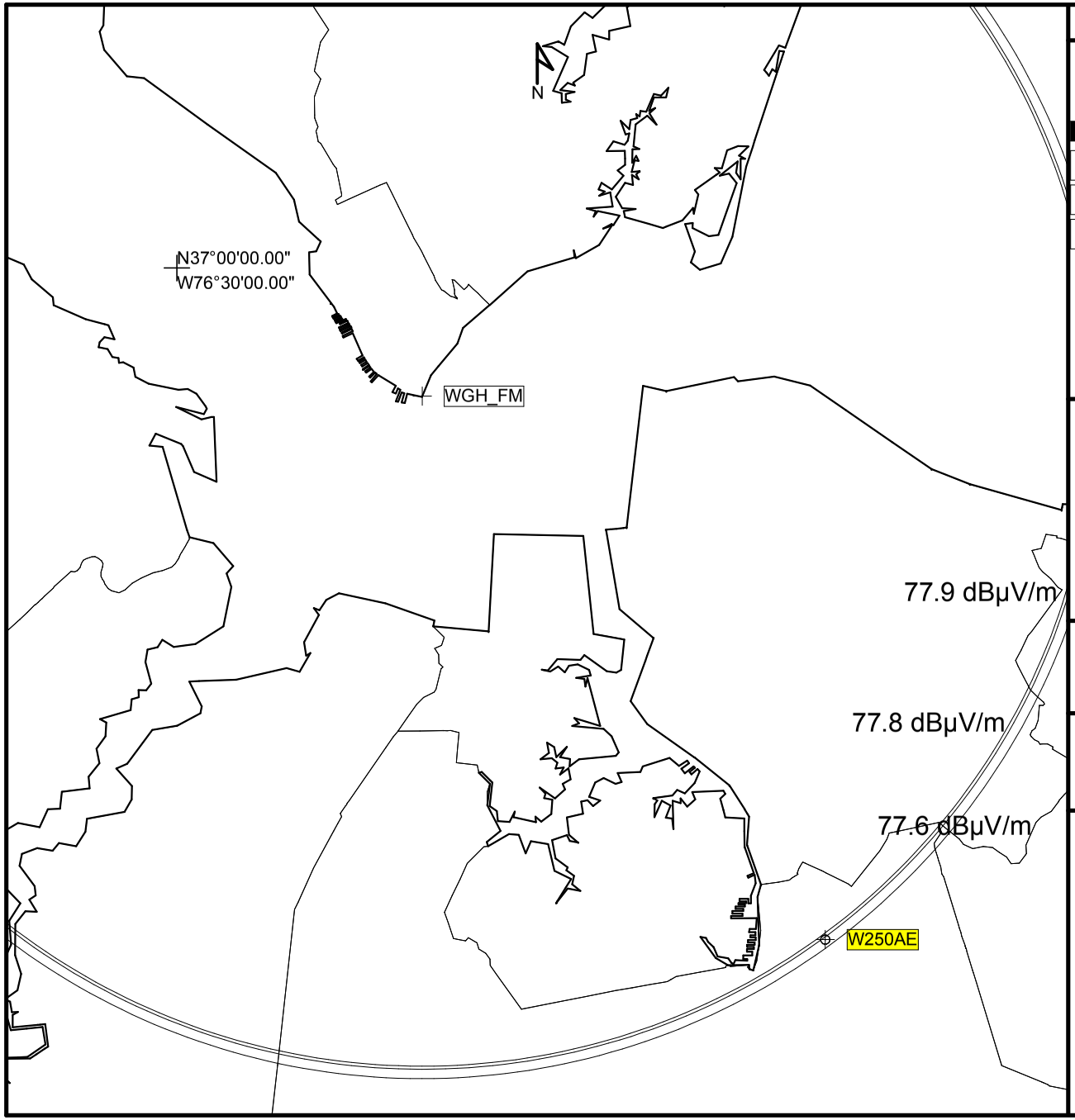
W250AE STUDY

Directional change

Figure 1 03/10/2012



SIGNAL™: W250AE_WGH.map

Interference contour study

Propagation methods:
3rd adjacent interference : FCC-FCC 10.0%

■ = 117.8 dBµV/m 3rd adjacent interfere
quick contours
County Boundaries
State Boundaries

Sites

Site: PORTSMOUTH
N36°48'22.00" W76°16'01.00" 5.0 m
W250AE Tx.Ht.AGL: 12.0 m Total ERPd: -6.00dBkW
Grp: 1 directional-vertical/0.0° 97.9000 MHz

Notes

Plot of 77.6 thru 77.9 dBu F(50,50)
coverage contours and the worst case
W250AE 117.6 dBu L.O.S. contour.
The area inside of the W250AE 117.6
contour has zero population. See
Exhibit 12 discussion.
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KILOMETERS
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W250AE INTERFERENCE

Protection of WGH-FM

Figure 2 03/13/2012