

MULLANEY ENGINEERING, INC.

9049 SHADY GROVE COURT
GAITHERSBURG, MD 20877

ENGINEERING EXHIBIT EE:

**RADIO STATION WINK-FM
FORT MYERS BROADCASTING COMPANY
FORT MYERS, FLORIDA**

Ch. 245C 100 KW 457 M HAAT

JUNE 24, 2003

**ENGINEERING STATEMENT IN SUPPORT OF
AN APPLICATION FOR AN
INCREASE IN HAAT - CLASS C
RESPONSE TO "SHOW CAUSE" ORDER**

File No. BLH-19880819KE - Facility ID: 22094

ATTACHED TO EXHIBIT 24 OF FCC FORM 301

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Declaration

I, John J. Mullaney, declare and state that I am a graduate electrical engineer with a B.E.E. and my qualifications are known to the Federal Communications Commission, and that I am an principal engineer in the firm of Mullaney Engineering, Inc., and that I have provided engineering services in the area of telecommunications since 1977. My qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission.

The firm of Mullaney Engineering, Inc., has been requested by Fort Myers Broadcasting Company, to prepare the instant engineering exhibit in support of an application for Construction Permit for an increase in HAAT of WINK-FM licensed to Fort Myers, Florida (FCC Facility ID Number: 22094).

All facts contained herein are true of my own knowledge except where stated to be on information or belief, and as to those facts, I believe them to be true. I declare under penalty of perjury that the foregoing is true and correct.

/s/ John J. Mullaney

John J. Mullaney, Consulting Engineer

Executed on the 24th day of June 2003.

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Ch. 245C 100 KW 457 M HAAT

NARRATIVE STATEMENT:

I. General:

This engineering statement has been prepared on behalf of Fort Myers Broadcasting Company, licensee of WINK-FM on Ch. 245C at Fort Myers, Florida. The purpose of this statement is to request a Construction Permit authorizing an increase in HAAT so as to qualify for Full Class C facilities. WINK-FM will operate with an ERP of 100 KW and an HAAT of **457 Meters**. This application is in response to an order to show cause (by WSUN-FM, BPH-20020919AAU) which propose to downgrade WINK-FM to Class C0 facilities based upon its HAAT of 403 meters. Given that Class C facilities must operate with an HAAT which is greater than 450 meters, this application makes WINK-FM fully compliant.

The application is not a major environmental action, as defined by Section 1.1307 of the Commission's Rules. The proposed facility is in full compliance with both the "controlled" & "un-controlled" FCC Radiation Guidelines. Since the proposed facility contributes less than 5% of the "controlled" standard it is **categorically excluded** from further consideration.

Answers to questions contained in F.C.C. Form 301, are incorporated in the following paragraphs and figures.

II. Engineering Discussion:

A. Proposed Location:

The applicant proposes to remain on its existing tower which also supports the operation of WINK-TV. The Antenna structure Registration number is 1019724. The NAD-27 geographic coordinates are:

Latitude: 26° 48' 01"

Longitude: 81° 45' 48"

B. Antenna System and Tower:

A dual polarized 5-bay Dielectric FM antenna (TDM-5FM) will be pole mounted at the top of the TV antenna. **No change in overall height for the tower is proposed.** The existing top mounted TV antenna will be replaced with a combined TV/FM antenna with the FM being the top portion of the pole. Figure 3 is a sketch of the tower. The antenna has a non-directional power gain of 2.2 H/V.

The antenna will be fed by 463.3 Meters (1,520 Feet) of 6-1/8" rigid line and by 15.6 meters (51 Feet) of 4-1/16" line, with a combined rated efficiency of 84.8 percent for this length..

C. Transmitter:

The applicant plans to install a type accepted 60 KW FM transmitter. The transmitter will be operated at 53.6 KW which is within its rated power.

D. Effective Radiated Power:

Giving consideration for the maximum antenna gain, transmitter power and line loss, the maximum Effective Radiated Power is 100 KW for the Horizontal and 100 KW for the Vertical Component. The proposed **HAAT of 457 meters** qualifies for **full Class C facilities**.

E. Channel Allocation:

Figure 4 is a channel allocation study from the existing site. The site is short spaced under the rules to three stations (all of those stations WOSN/246C3, WSUN-FM/246C2 & WKEZ-FM/245C3 were granted under Section 73.215 of the rules). WINK-FM is **entitled to full unrestricted protection**. In all other respects this application is in compliance with Section 73.207(a). Since no change of site by WINK-FM is proposed it is not necessary for WINK-FM to demonstrate compliance with 73.215 of the rules.

F. Terrain Profile Data & Coverage:

Terrain profile data was extracted from the NGDC 30 Second Digitized Terrain Data Base provided out of Boulder, Colorado. At least twenty-four bearings (every 15 degrees) were used to obtain the proposed coverage data. The standard eight bearings (every 45 degrees) were used to obtain the proposed HAAT.

The predicted service contours, as shown in the attached report, were computed using a mathematical model adapted for computer use of data shown in Figure 1 of Section 73.333. This is the Commission's computer program TV FM FS REPORT RS-76-01, dated January 1976.

G. Terrain Profile to City of License:

The N-210-E radial is the direct path to the City of License. From the existing licensed site the 3.16 mV/M or 70 dBu City Grade Contour will completely encompass the City of License without major terrain obstruction.

H. Coverage Area and Population:

The area contained within the 60 dBu (1.0 mV/M) contour has been computed mathematically. The population within this contour was obtained through a computerized analysis of the census designated places population data contained in the 2000 census.

I. FM Blanketing Contour:

The applicant recognizes its obligation to resolve related interference complaints for a one year period within its 115 dBu "FM Blanketing Contour" as required by Section 73.318 of the FCC Rules.

The radius around the base of the tower in which Blanketing interference is possible is fairly small (3.2 km) and is in a sparsely populated area. Given that this is an existing site and that the height of the FM antenna will actually be higher, no problems are anticipated.

J. Other Services in Area:

There are no known AM Broadcast Stations within 3.2 kilometers of the proposed site.

Except what already exists on the tower, there are no known transmission facilities within 60 meters (197 feet) of the proposed antenna.

There are other known FM or TV transmitters within 10 kilometers (6.2 miles) of the proposed site, however, based upon the type of transmitter proposed, and the frequency & power involved no intermodulation interference problems with existing transmitting facilities is expected. In the unlikely event some problems would occur, the applicant will investigate and correct such cases in accordance with the Commission's Rules.

K. Environmental Assessment Statement:

The applicant believes its proposal will not significantly affect the environment since it does not meet any of the criteria specified in Section 1.1307 of the rules. Since an existing tower will be used with no change in overall height the only remaining environmental issue is R.F. Exposure. Specifically the proposed facility:

- 1) Will NOT involve the exposure of workers or the general public to levels of Radio Frequency radiation in excess of the guidelines recommended by the FCC - OET Bulletin 65 (August 25, 1997).

The following is a more detailed discussion of this protection standard:

A. National Environmental Policy Act of 1969:

In 1969, Congress enacted the National Environmental Policy Act (NEPA), which requires the FCC to evaluate the potential environmental significance of the facilities it regulates and authorizes. Human exposure to Radio Frequency (RF) radiation had been identified as an issue that the FCC must consider.

Beginning with the filing of applications after January 1, 1986, broadcast stations were required to “certify compliance” with FCC prescribed guidelines on human exposure to RF radiation. The FCC standard was based upon the American National Standards Institute’s (ANSI) RF radiation protection guides (ANSI C95.1-1982). These exposure limits are expressed in terms of milli-watts per square centimeter.

In October 1997, the FCC implemented a two tier evaluation criteria utilizing recommendations of the National Council on Radiation Protection and Measurement (NCRP). The “controlled” tier involves areas which have restricted access while the “un-controlled” tier involves areas which have unrestricted access. The Maximum Permissible Exposure (MPE) limits for “controlled” areas are the same as adopted in 1985, while the “un-controlled” limits for FM and TV frequencies are one-fifth or 20% of the limits for “controlled” areas.

These exposure limits are time-averaged over any six minute period and vary depending upon the frequency involved. The following are the Maximum Permissible Exposure (MPE) limits for “controlled” areas:

Frequency Range (MHz)	Power Density (mW/sq.cm)
*****	*****
0.3 to 3	100 AM
3 to 30	900/(Freq ²)
30 to 300	1.0 VHF TV & FM
300 to 1,500	Freq/300 UHF TV
1500 to 100,000	5.0

The applicant recognizes that compliance with the above criteria at sites involving multiple AM, FM and/or TV facilities is based upon the contributions of all such facilities. At the site discussed in this application, **the only significant RF facility** that will exist are the WINK FM & TV facilities. However, as will be shown the FM is **categorically excluded** from having to conduct a full evaluation due to its low contribution at ground level.

FM Broadcast Stations

For FM Broadcast Stations the following formula is used:

$$D = \frac{\text{SQRT}(F^2 * [HERP + VERP])}{1.667 * \text{SQRT}(PD) * 3.2808}$$

Where:

- D = the closest distance in meters that a human should come to an operating antenna (To obtain feet multiply by 3.2808)
- F = typical relative field factor in downward direction (F=1 is worst case main lobe)
- HERP = Horizontal ERP in watts (above a dipole)
- VERP = Vertical ERP in watts (above a dipole)
- PD = highest Power Density in milli-watts/cm²
- SQRT = Square Root
- Freq = Frequency in mega-cycles/sec. (MHz)

The vertical radiation pattern of the FM antenna specified in this application is narrow and, therefore, the power density as seen by an observer on the ground near the base of the tower will be less than 20 percent of the total ERP.

The application of the above equation (assuming maximum ERP), in our case, for a frequency of 96.9 MHz and an “un-controlled” Power Density of 0.2 milli-watts results in a minimum distance of 182.9 meters (600 feet) from the antenna.

Inasmuch as the lowest element on the proposed antenna will be approximately 435.9 meters (1430 feet) above the ground level, it is self-evident that no hazard from radiation will exist to persons at ground level. At approximately 2 meters above the ground and assuming maximum downward radiation, the proposed FM facility contributes 3.2% of the FCC “controlled” standard. For FM, the “un-controlled” standard is 20% and, therefore, this proposal is in full compliance and is **categorically excluded** from further consideration since it is less than 5%.

The tower will be surrounded by a locked fence to limit access.

Workers employed to climb the tower or work in a potential overexposure location will not be permitted to enter the work area until cleared by the station manager or other responsible person. Appropriate warning signs will be posted to ensure safety. In addition, the applicant will establish and enforce work rules and safety procedures applicable in a potential over-exposure area. The rules will establish how close a worker can get to the antenna when it is operating at normal power and specify the power reduction required in order to make other locations safe. It is recognized that maintenance or installation work on or near the antenna may require the station to completely shutdown or switch temporarily to an auxiliary antenna or an auxiliary transmitter site. All employees, contract and other persons having access to areas of potential exposure will be required to sign a site management guide indicating they are aware of and will comply with all safety rules. In the instance of a multiple use site, a single site access policy incorporating the above philosophy will be established. All procedures will be reviewed & updated as necessary.

L. Multiple Ownership Rules:

Fort Myers Broadcasting Company also has ownership of several other stations (2 AM, 2 FM & 1 TV) in the local area. However, the proposed increase in HAAT only extends the distance to the FM 70 dBu contour by 3.1 km (1.9 miles) and that extension **does not result** in a new overlap with a commonly owned facility. The presently licensed WINK-FM facility already has an overlap with all of the commonly owned facilities in the area. The following is a list of the common facilities:

Call	Fac ID	Channel/Frequency
WINK-TV	22093	11-NTSC / 9-DTV
WINK-FM	22094	245C
WINK(AM)	2882	1240 kHz
WTLQ-FM	28901	249C3
WPTK(AM)	48329	1200 kHz

III. SUMMARY:

Fort Myers Broadcasting Company, licensee of WINK-FM on Ch. 245C at Fort Myers, Florida, requests a construction permit authorizing an HAAT of 457 meters from its existing licensed site (no FAA approval is necessary). At this proposed HAAT, WINK-FM qualifies as a full Class C facility. It should be understood that the three existing short spacings were requested respectively by those stations individually under Section 73.215 and that WINK-FM is entitled to full unrestricted Class C protection. This engineering proposal is in full compliance with the Commission's Rules.

/s/ John J. Mullaney

John J. Mullaney, Consulting Engineer

June 24, 2003.