

ENGINEERING REPORT RE
MINOR MODIFICATION OF CONSTRUCTION PERMIT (BP-19990521AC)
APPLICATION TO CHANGE NIGHTTIME POWER AND SITE OF AM STATION
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz – 21 N / 50 D kW – DA-2
SEPTEMBER 2004

*Exhibit 10 - FCC Form 301, Section III-AM Engineering
Technical Specifications*

INTRODUCTION

This engineering report has been prepared on behalf of Greater Philadelphia Radio, Inc., ("GPRI") licensee of AM radio station WPEN, Philadelphia, Pennsylvania and is in support of a minor modification of its outstanding construction permit (BP-19990521AC).

WPEN(AM) is currently licensed for operation on 950 kHz with 5 kW power unlimited time as a class B station, utilizing a non-directional antenna system daytime and a three tower directional antenna at night. WPEN(AM) is also authorized for 50 kW day and nighttime power from a different site using different directional antennas.

GPRI is proposing to change antenna site for the nighttime operation to the existing antenna site of WWDB, Philadelphia, PA. The proposed nighttime operation would be with 21 kW power and utilize the existing four tower directional array of WWDB. The authorized daytime 50 kW operation of WPEN will remain unchanged.

WWDB currently operates on 860 kHz daytime only with 10 kW power utilizing a 4 tower directional antenna system. GPRI is proposing to utilize the existing four tower in-line array of station WWDB for the nighttime operation of WPEN. The WWDB antenna array would be compatible for the nighttime operation of WPEN without pass/reject filters since, only one station would be operational at any given time. No changes to the WWDB operation are proposed.

ANTENNA SITE

The proposed WPEN nighttime (existing WWDB antenna) site is located on Foundry road near Trooper, PA, approximately 25 kilometers northwest of Philadelphia, Montgomery County, Pennsylvania. The geographic coordinates (NAD-27) corresponding to the center of the proposed WPEN (existing WWDB) nighttime antenna array are as follows:

North Latitude: 40° 09' 15"

West Longitude: 75° 22' 10"

A USGS 7.5 minute series topographic map showing the WWDB site is on file; therefore, a map is not being re-submitted with this application.

DAYTIME ALLOCATION SITUATION

There are no changes proposed in the present licensed 5 kW or authorized 50 kW daytime operations.

NIGHTTIME ALLOCATION SITUATION

The proposed 21 kW nighttime directional operation of WPEN(AM) will not cause any predicted increase in the RSS nighttime limit of other co or adjacent channel AM stations in accordance with engineering allocation standards prescribed in Section 73.182 of the Commission's Rules. The present authorized 50 kW nighttime operation of WPEN causes an interference limitation of 1.20 mV/m to co-channel station WWJ, Detroit, MI. That limitation is based according to the 25% exclusion method. GPRI believes the proposed nighttime operation is permitted to cause a similar (1.2 mV/m or less) limit to station WWJ. Similarly, with respect to a co-channel application filed during the major change window associated with AM Auction No. 84. GPRI also believes the proposed WPEN nighttime operation does not need to reduce radiation by 10% of its licensed value toward the WCTN, Aspen Hill, MD proposal. A 10% reduction is only applicable with respect to an existing station and not towards a new proposed nighttime operation.

The nighttime allocation data showing the proposed nighttime limitations are attached in Exhibit 15. The values of conductivity, azimuths and inverse distance field strengths which are used as a basis for coverage contours, are shown on the attached tables in Exhibit 14-A.

CONTOUR DATA

The distances to various field intensity contours were obtained by referencing the groundwave field strength versus distance graphs 11 and 11A of Section 73.184 of the Commission's Rules. Where changes in estimated ground conductivity occur, the equivalent distance method of computation was used. The pertinent contours shown were computed based on the station's standard radiation pattern and the Commission's estimated (FCC Figure M-3) or measured conductivities, consistent with 73.24 and 73.183 of the FCC rules. Exhibit 11-A shows the nighttime interference-free contour (3.6 mV/m) and the 5 mV/m contour of the proposed 21 kW operation. The proposed WPEN 21 kW nighttime operation will provide 5 mV/m and nighttime interference-free service to the entire city of Philadelphia. Therefore, the WPEN proposal is in compliance with the community coverage requirement.

1 V/m CONTOUR

Exhibit 11-B is a map showing the WPEN proposed antenna site and the computed 1 V/m nighttime contour. The estimated population (2000 US Census data) within the proposed nighttime 1 V/m contour is 2,861 people. This figure represents approximately 0.2% of the 1,559,161 people within the proposed 25 mV/m nighttime contour. Consequently, the proposed nighttime operation of WPEN complies with Section 73.24(g) of the Rules.

MAIN STUDIO LOCATION

The main studio is located within the predicted 5 mV/m daytime contour of WPEN(AM).

FAA DATA

Notification to the FAA has not been submitted nor required since all of the WWDB towers are registered and there are no changes proposed to these structures.

ENVIRONMENTAL STATEMENT

An environmental assessment (EA) is categorically excluded under Section 1.1307 of the FCC Rules and Regulations since there will be no additional tower modification or construction on the property of the existing multi-tower antenna site. GPRI is proposing to construct a building to house the WPEN transmitter and associated equipment at the site. After the construction, the area surrounding the site will be restored, as close as possible, to its original condition. Therefore, the construction of the proposed AM facility does not involve significant changes in the surface features of the site.

An evaluation has been made to determine compliance with the FCC specified standards for human exposure to RF fields as set forth in the OST Bulletin No. 65 dated August 1997. According to Table 2 in Supplement A to OST Bulletin 65 (Edition 97-01), the Maximum Permissible Exposure (MPE) for specified electric and magnetic fields ("worst case") would not exceed more than 4 meters from the base of the tower for a transmitter power of 50 kW, assuming there is 50 kW power into each tower. The WWDB four tower directional antenna system for its licensed 10 kW daytime operation has an approximate power distribution from 1 kW to 13 kW (one negative tower). The power distribution of the proposed 21 kW WPEN directional operation is 1.6 kW to approximately 15.5 kW, consequently the proposed operation of WPEN would not impact the 4 meter distance. Therefore, the distance of 4 meters overstates the minimum distance at which the aforementioned field levels may be exceeded for any of the four individual towers. WWDB is licensed as a daytime only station and WPEN is requesting authorization for its nighttime operation. Consequently, the WPEN/WWDB operations will not be operational at the same time.

The towers are completely fenced with a minimum of three meters from the tower base. The security fencing and locked gate at the base of each tower prevents access to areas by the general public. WPEN will also install appropriate warning signs describing the nature of the potential hazard. Additionally, WWDB (the licensee), currently has a program of assuring compliance with the Commission's guidelines concerning exposure to RF Fields. Upon grant of the WPEN nighttime proposal, further compliance will be accomplished, which could include conducting RF field measurements at the site. Access to any area found to exceed the Commission's guidelines for MPE near the towers will be restricted by installing additional fencing. Such a fence around the towers would effectively block and restrict access and unintentional use of the space near the towers.

With respect to work performed on the tower structures or inside the fenced area, WPEN will establish written procedures in coordination with WWDB, including reducing or terminating the transmitter power to ensure that workers are not exposed to levels of RF Fields in excess of the Commission's guidelines.

The Commission guidelines for the AM band are the same (614 V/m Electric Field and 1.63 A/m Magnetic Field) for the occupational/controlled environment and for the general population/uncontrolled environment. For the reasons stated above, this proposal does not involve any action specified in Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from environmental processing.