

ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Digital Television Station Auxiliary Antenna Construction Permit

prepared for

University Of North Carolina

WUNK-TV Greenville, NC

Facility ID 69149

Ch. 25 784 kW 198 m

University Of North Carolina ("UNC") is the licensee of digital television station WUNK-TV, Facility ID 69149, Greenville NC. Reassignment of WUNK-TV from Channel 23 to Channel 25 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (DA 17-317, released April 13, 2017). A Construction Permit ("CP", file# 0000025767) authorizes construction of the WUNK-TV post-auction facility on Channel 25. *UNC* herein seeks authorization for an auxiliary antenna for WUNK-TV on its post-auction Channel 25.

The reassignment CP authorizes WUNK-TV to operate with a nondirectional antenna at 1000 kW effective radiated power (ERP) and 348 meters height above average terrain (HAAT). The proposed auxiliary antenna will be side-mounted on the same tower structure as the authorized main antenna, and will operate on Channel 25 at 784 kW ERP (nondirectional) and an antenna HAAT of 198 meters.

The WUNK-TV tower structure is associated with FCC Antenna Structure Registration number 1234252. No change to the overall structure height will result from this proposal.

The proposed antenna is an elliptically polarized nondirectional RFS model SAA18-O3-G200-ES7R-25 (20 percent vertical polarization). The maximum horizontally polarized ERP is 784 kW and the maximum vertically polarized ERP is 157 kW.

Figure 1 shows that the 41 dBμ noise limited service contour of the proposed auxiliary facility does not extend beyond that of the authorized main facility. Thus the proposal complies with §73.1675(a).

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 15 percent antenna relative field in downward elevations (pattern data shows less than 15 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $18.8 \mu\text{W}/\text{cm}^2$, which is 5.2 percent of the general population/uncontrolled maximum permitted exposure limit. No other authorized TV, FM, or AM transmitting facilities are located within 5 km of the WUNK-TV site.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field.

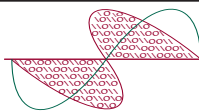
List of Attachments

Figure 1 Proposed Auxiliary Contours

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Figure 1
Proposed Auxiliary Contours
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