

ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Digital Television Station Auxiliary Antenna Construction Permit

prepared for

University Of North Carolina

WUNP-TV Roanoke Rapids, NC

Facility ID 69397

Ch. 27 314 kW 219 m

University Of North Carolina ("UNC") is the licensee of digital television station WUNP-TV, Facility ID 69397, Roanoke Rapids NC. Reassignment of WUNP-TV from Channel 36 to Channel 27 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (DA 17-317, released April 13, 2017). A Construction Permit ("CP", file# 0000034416) authorizes construction of the WUNP-TV post-auction facility on Channel 27. *UNC* herein seeks authorization for an auxiliary antenna for WUNP-TV on its post-auction Channel 27. The initial operation on reassignment Channel 27 may commence with the auxiliary antenna proposed herein, in order to accommodate tower work including removal of the existing Channel 36 main antenna and installation of the post-auction Channel 27 main antenna.

The reassignment CP authorizes WUNP-TV to operate with a nondirectional antenna at 248 kW effective radiated power (ERP) and 363 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 27 at 314 kW ERP (nondirectional) and an antenna HAAT of 219 meters.

The WUNP-TV tower structure is associated with FCC Antenna Structure Registration number 1014576. No change to the overall structure height will result from this proposal.

The proposed antenna is an elliptically polarized nondirectional RFS model SAA22-O3-G200-ES4R-27 (20 percent vertical polarization). The maximum horizontally polarized ERP is 314 kW and the maximum vertically polarized ERP is 63 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 $7.4 \mu\text{W}/\text{cm}^2$, which is 2.0 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

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.

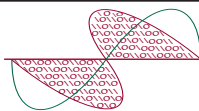
List of Attachments

Figure 1 Proposed Auxiliary Contours

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Figure 1
Proposed Auxiliary Contours
WUNP-TV Roanoke Rapids, NC
Facility ID 69397
Ch. 27 314 kW 219 m

prepared for
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June, 2019

Ch. 27 Construction Permit
LMS File# 0000034416
248 kW 363 m nondirectional
41 dBμ Contour

Proposed Auxiliary Ch. 27
314 kW 219 m nondirectional
48 dBμ
(Principal Community)
41 dBμ
(Noise Limited Service Contour)

Roanoke Rapids, NC

Scale 1:1,250,000
0 15 30 45 km

