

ENGINEERING EXHIBIT
Incentive Auction Channel Reassignment
Application for License to Cover Construction Permit
Digital Television Station

prepared for

Mississippi TV License Company, LLC

WTVA(DT) Tupelo, MS

Facility ID 74148

Ch. 11 42.1 kW 541 m

Mississippi TV License Company, LLC (“*MTLC*”) is the licensee of digital television station WTVA(DT), Channel 8, Facility ID 74148, Tupelo, MS. Reassignment of WTVA from Channel 8 to Channel 11 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (“*CCRPN*”, DA 17-317, released April 13, 2017). A Construction Permit (“CP”, file# 0000034428) authorizes construction of the WTVA post-auction facility on Channel 11.

The WTVA reassignment facility has been constructed and *MTLC* herein seeks a license to cover the CP. The WTVA facility has been constructed pursuant to the parameters specified in the CP, except that an elliptically polarized nondirectional antenna was installed in lieu of the horizontally polarized nondirectional antenna specified in the CP.

Historically, an increase in vertically polarized ERP is permitted by §73.1690(c)(4) to be specified on a license application. However, electronic filing currently provided by the FCC’s Licensing and Management System does not provide opportunity for the applicant to change polarization.

MTLC requests that the license record specify elliptical polarization and the corresponding antenna model number. The effective radiated power, antenna location, and antenna height as constructed match the values authorized in the CP. A summary of the technical values which differ from those authorized in the CP is provided below.

CP File# 0000034428

As-Built Values for License

Antenna Make	ERI	ERI
Antenna Model	ATW9V3-HTO-11H	ATW9V3-ETO-11H
Polarization	Horizontal	Elliptical

The antenna employs 30 percent vertical polarization, where the horizontally polarized nondirectional ERP is 42.1 kW and the vertically polarized nondirectional ERP is 12.63 kW. The vertically polarized component does not exceed the horizontally polarized component at any azimuth.

Human Exposure to Radiofrequency Electromagnetic Field

The WTVA 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 20 percent antenna relative field in downward elevations (pattern data shows less than 20 percent relative field at angles 20 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the WTVA facility is $0.34 \mu\text{W}/\text{cm}^2$, which is 0.2 percent of the general population/uncontrolled maximum permitted exposure limit. This is well 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.

Chesapeake RF Consultants, LLC

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