



ENGINEERING EXHIBIT

Digital Television Station Application for Modification of License

prepared for

Gray Television Licensee, LLC

WQCW(DT) Portsmouth, OH

Facility ID 65130

Ch. 15 1000 kW 386 m

Gray Television Licensee, LLC (“Gray”) is the licensee of WQCW, Channel 15, Facility ID 65130, Portsmouth OH (file# 0000168240). *Gray* herein seeks a License Modification to cover the replacement of the WQCW shared main antenna.

WQCW is licensed to operate at 1000 kW effective radiated power (“ERP”) using a nondirectional antenna at a height above average terrain of 386 meters. The antenna, which is shared with *Gray’s* WSAZ-TV (Ch. 22, Facility ID 36912, Huntington WV), became defective and has been replaced.

The replacement antenna is a nondirectional elliptically polarized ERI model ETU14U3-ETP40-22/15 (30 percent vertical polarization). As with the licensed operation the horizontally polarized ERP is 1000 kW and the vertically polarized ERP is 300 kW. Considering the replacement antenna and transmission system gains and losses on Channel 15, the transmitter power output has been adjusted to 56.6 kW to achieve the authorized 1000 kW ERP.

Regarding RF exposure, calculations per FCC OET Bulletin Number 65 (considering 10 percent antenna relative field in downward elevations) show that the signal density near the tower at two meters above ground level attributable to the modified WSAZ-TV facility is $4.8 \mu\text{W}/\text{cm}^2$, which is 1.5 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

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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