

ENGINEERING STATEMENT

Request for Special Temporary Authorization prepared for

Gray Television Licensee, Inc.
WBKO-DT Bowling Green, KY
Digital Ch. 13
Facility ID 4692

Gray Television Licensee, Inc. (“Gray”) is the licensee of television station WBKO(TV), analog Channel 13 and digital Channel 33, Bowling Green, KY. This statement supports *Gray’s* request for Special Temporary Authority (“STA”) to initially operate the post-transition digital WBKO-DT facility at reduced power. This statement supplies coverage and population data as specified in the Report and Order in the Third Periodic Review¹ for a phased implementation of the WBKO-DT post-transition operation.

A construction permit (BPCDT-20080327AHO as modified by BMPCDT-20080611AAQ) authorizes WBKO-DT to operate its post-transition digital facility on Channel 13, the current WBKO analog channel. This channel was established in Appendix B of the Seventh Report and Order in MB Docket 87-278. The post-transition digital operation authorized under BMPCDT-20080611AAQ is a “maximized” facility and involves an effective radiated power (“ERP”) of 22 kW at 221 meters antenna height above average terrain (“HAAT”), with a nondirectional antenna. The initial construction permit BPCDT-20080327AHO authorized 13.5 kW. The proposed STA facility will operate with the authorized antenna at 11.6 kW ERP, which is 85.9 percent of the initially authorized 13.5 kW ERP. No interference study is necessary, since the STA request specifies use of the authorized post-transition antenna system at reduced power.

Post-transition, WBKO-DT will employ a recently purchased new digital transmitter. The transmitter will require an additional power amplifier to achieve the required power output to satisfy

¹*Third Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television*, MB Docket No. 07-91, FCC 07-228, released December 31, 2007.

the 13.5 kW initial Construction Permit. An additional power amplifier will be installed after the transition date, possibly utilizing an existing power amplifier currently in pre-transition service as analog at another *Gray* station.

A contour comparison map is supplied as **Figure 1**, showing that the 11.6 kW STA facility's 43 dBμ (city grade) contour will encompass the principal community. **Figure 1** also supplies the coverage contours associated with the current analog Channel 13 and digital Channel 33 facilities.

Population counts for the various WBKO(TV/DT) facilities are summarized below as determined using OET Bulletin 69² analysis. The proposed STA facility would provide a greater than 100 percent population match of the analog and digital pre-transition WBKO(TV/DT) facilities.

Population Summary

WBKO(TV/DT) Facility	Interference-Free Population (2000 Census)
Licensed Analog Ch. 13 (BLCT-20040818ABR)	527,969
Transitional Digital Ch. 33 (BLCDT-20060303AAC)	452,599
Proposed STA Digital Ch. 13	582,309

The proposed STA operation complies with the FCC's limits concerning human exposure to RF energy. Based on OET-65 equation (10), and assuming 30 percent antenna relative field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 1.3 μW/cm², which is 0.65 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

²FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

A handwritten signature in blue ink, appearing to read "Joseph M. Davis".

Joseph M. Davis, P.E.
November 21, 2008

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List of Attachments

Figure 1 STA Coverage Contour Comparison

