

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION
OF CONSTRUCTION PERMIT
STATION WVIE-LP (FACILITY ID. 30258)
NASHVILLE, TENNESSEE
CH 20(-) 50 KW-DA

Technical Narrative

This technical exhibit supports an application for modification of construction permit (CP) for low power television (LPTV) station WVIE-LP at Nashville, Tennessee. Station WVIE-LP is currently authorized to operate on channel 20 with a minus (-) carrier offset (BPTTL-19990621JA, Facility ID 30258). A non-directional antenna system is specified with a visual effective radiated power (ERP) of 0.865 kilowatt (kW). The antenna radiation center height above mean sea level (RCAMSL) is 371 meters. The transmitter site coordinates are 36-15-56, 86-48-13. The FCC antenna registration number for the support structure is 1042792.

Proposed Facilities

Station WVIE-LP proposes to change to a directional antenna (DA) system and increase the maximum visual ERP to 50 kW. There is no proposed change in channel, offset, site, antenna height or city of service..

Analog (NTSC) Allocation Considerations

A study has been conducted with respect to other analog (NTSC) assignments using the allocation provisions contained in the Federal Communications Commission (FCC) LPTV rules. The proposed WVIE-LP operation complies with the FCC's normal allocation standards (separation and non-overlapping contours) with all analog assignments except WBXX-TV on channel 20(+) at Crossville, Tennessee, and possibly with a proposed rule making for channel 20 at Lexington, Kentucky (BPRM-20000717ADO). The FCC TV database does not provide an ERP or antenna height above average terrain (HAAT) for the Lexington channel 20 proposal. Although protection of the Lexington channel 20 proposal is not required until it is authorized by the FCC, consideration has been given. For purposes of the WVIE-LP allocation study it has been assumed that the proposed Lexington channel 20 facility has an ERP of 5000 kW and antenna HAAT of 268 meters (RCAMSL=530 m).

Interference calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin with a 1 kilometer grid. The amount on new or unique interference caused to WBXX-TV and the assumed Lexington proposal by the proposed WVIE-LP operation has been determined. By new or unique interference we mean interference not already caused by other authorized analog and DTV assignments and DTV allotments. The proposed WVIE-LP operation causes new interference to 665 people (0.05%) within the WBXX-TV analog service area (1,390,888 people). The proposed WVIE-LP operation causes new interference to 192 people (0.03%) within the assumed Lexington channel 20 analog service area (754,633 people). These interference levels (0.05% and 0.03%) are well within the FCC's 0.5% acceptable interference threshold. A waiver of the FCC rules is requested with respect to station WBXX-TV and the

proposed Lexington channel 20 allotment based on use of the OET-69 methods.

The other analog and DTV assignments considered in the WBXX-TV interference "masking" study are:

WGRB, DTV Ch.19, Campbellsville, KY, Allotment
WKPT-TV, NTSC Ch.19, Kingsport, TN, CP
WTBS, DTV Ch.20, Atlanta, GA, Allotment
WAZE-DT, DTV Ch.20, Madisonville, KY, CP
WYLE, DTV Ch.20, Florence, AL, Allotment
WCTE(TV), NTSC Ch.22, Cookeville, TN
WTVC, DTV Ch.35, Chattanooga, TN, Allotment

The other analog and DTV assignments considered in the masking study for the assumed channel 20 Lexington, Kentucky proposal are:

WLEX-TV, NTSC Ch.18, Lexington, KY
WGRB, DTV Ch.19, Campbellsville, KY, Allotment
WXIX-TV, NTSC Ch.19, Newport, KY, CP
WBXX-TV, NTSC Ch.20, Crossville, TN
WOUB-TV, NTSC Ch.20, Athens, OH
WFYI, NTSC Ch.20, Indianapolis, IN
WAZE-DT, DTV Ch.20, Madisonville, KY, CP
WAOM, DTV Ch.21, Morehead, KY, Allotment
WBNA, NTSC Ch.21, Louisville, KY
WKYT-TV, NTSC Ch.27, Lexington, KY
WBKI-TV, NTSC Ch.34, Campbellsville, KY, CP
WKHA, NTSC Ch.35, Hazard, KY

DTV Allocation Considerations

Pertinent DTV allotments and assignments on channels 19, 20 and 21 have been examined using the procedures outlined in the FCC's OET-69 Bulletin.¹ Except for the DTV assignments listed below, the proposed WVIE-LP operation does not cause calculated interference to any other DTV assignment or allotment.

<u>DTV Assignment</u>	<u>Channel</u>	<u>Service Population</u>	<u>Interference Population</u>
WAZE, Madisonville, KY (Allotment)	DTV-20	551,000	629 (0.11%)
WAZE-DT, Madisonville, KY (CP)	DTV-20	703,894	1,739 (0.25%)
WYLE-DT, Florence, AL, (Application)	DTV-20	344,000	335 (0.1%)

The above interference levels are within the FCC's 0.5% acceptable interference threshold. If necessary, a waiver of the FCC rules is respectfully requested for interference calculations based on use of the procedures outlined in the FCC's OET-69 Bulletin.

Radiofrequency Electromagnetic Field Exposure

The proposed WVIE-LP facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A visual ERP

¹ The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 1 km was employed. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

of 50 kW with 22% aural power was assumed. A relative field value of 0.2 was assumed for the Bogner B16UA antenna's downward radiation. The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0029 mW/cm². This is less than 1% of the FCC's recommended limit of 0.34 mW/cm² on channel 20 for an "uncontrolled" environment. It is also less than 1% of the FCC's limit for a "controlled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed WVIE-LP operation appears to be otherwise categorically excluded from environmental processing.

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