

Proposed Auxiliary Antenna
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Marquee Broadcasting, Inc.
Salisbury, MD

WMDT is presently licensed to operate on Channel 29 with a maximum directional effective radiated power of 246 kilowatts at 307 meters above average terrain using a directional antenna. This application requests a construction permit for an auxiliary antenna. The proposed auxiliary antenna is a SWR SWCDS16EC/29 horizontally polarized directional antenna which will be installed at the 205.7 meter level on the tower which supports WMDT's main antenna. Details on this antenna, as supplied by the manufacturer, are included in a separate attachment to this request. The main lobe of this antenna will be oriented at an azimuth of 110° and it will operate with a maximum effective radiated power of 320 kilowatts. The predicted 41 dBu contour for these auxiliary facilities won't extend beyond the predicted 41 dBu contour for the facilities authorized by WMDT's Channel 29 license.

The proposed WMDT auxiliary facilities will fully comply with the current FCC standard with regard to human exposure to nonionizing radiation. Equation (2), found on Page 30 of Supplement A to OET Bulletin 65, details the calculation technique used to determine the power density at the base of a TV broadcast tower. In this case, however, it is necessary to substitute the total proposed average DTV effective radiated power (320 kilowatts) for the expression $[0.4ERP_V + ERP_A]$ in this equation to compensate for the fact that DTV power levels are expressed in terms of average power, rather than peak power, as is the case for the visual portion of an analog TV signal. Using the vertical radiation pattern data for the proposed antenna, which is detailed in a separate attachment to this application, and substituting these values into this equation yields a predicted maximum power density at two meters above ground level of $2.937 \mu\text{W}/\text{cm}^2$, which will occur at a depression angle of 82 degrees below

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horizontal and at a distance of 28.6 meters from the base of this tower. Since the maximum permitted power density for uncontrolled exposure on TV Channel 29 is 373.3 $\mu\text{W}/\text{cm}^2$, this amounts to only 0.787% of the permitted level for uncontrolled exposure. Since this is less than 5% of the permitted level, the proposed facilities are excluded from environmental processing and need not be considered in conjunction with other co-located and nearby facilities to establish compliance with this standard for uncontrolled exposure.

WMDT will also continue to take appropriate steps to insure that workers who must climb this tower will not be exposed to power densities exceeding the permitted levels for controlled exposure. This will include a reduction in power or the cessation of operation, as appropriate, at any time that workers must be on this tower in any area where the total power density exceeds the permitted level for controlled exposure.

Because the facilities proposed in the attached application will fully comply with the FCC standard regarding human exposure to nonionizing radiation and don't involve any tower modifications which would qualify as a major environmental action, it isn't necessary to undertake any further environmental studies or submit an environmental assessment for these proposed facilities.