

NONIONIZING RADIATION COMPLIANCE

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Marquee Broadcasting Kentucky, Inc.
Bowling Green, KY

The proposed modified WNKY-LD facilities will fully comply with the current FCC standard with regard to human exposure to nonionizing radiation. The proposed WNKY-LD antenna is an elliptically polarized Dielectric DLP-12B nondirectional antenna which will operate with an average effective radiated power of 15 kilowatts in the horizontal polarization and 4.5 kilowatts in the vertical polarization. This antenna will be mounted with its center of radiation located 130 meters above ground on an existing 153 meter tower. 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 (19.5 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 was supplied by the antenna manufacturer and is detailed in the final page of this exhibit, and substituting these values into this equation yields a predicted maximum power density at two meters above ground level of $0.124 \mu\text{W}/\text{cm}^2$, which will occur at a depression angle of 34 degrees below horizontal and at a distance of 190 meters from the base of this tower. Since the maximum permitted power density for uncontrolled exposure on TV Channel 35 is $397.3 \mu\text{W}/\text{cm}^2$, this amounts to only 0.03% of the permitted level for uncontrolled exposure. Since this is substantially less than 5% of the permitted level, the proposed facilities are excluded from environmental

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processing and need not be considered in conjunction with other co-located and nearby facilities to establish compliance with this standard for uncontrolled exposure.

WNKY-LD will also 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 modifications 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.

ELEVATION PATTERN

Exhibit No.

Date

13 Mar 2023

Call Letters

Channel

35

Antenna Type

DLP-12B

Location

Customer

RMS Gain at Main Lobe

12.0 (10.79 dB)

Beam Tilt

1.5 Degrees

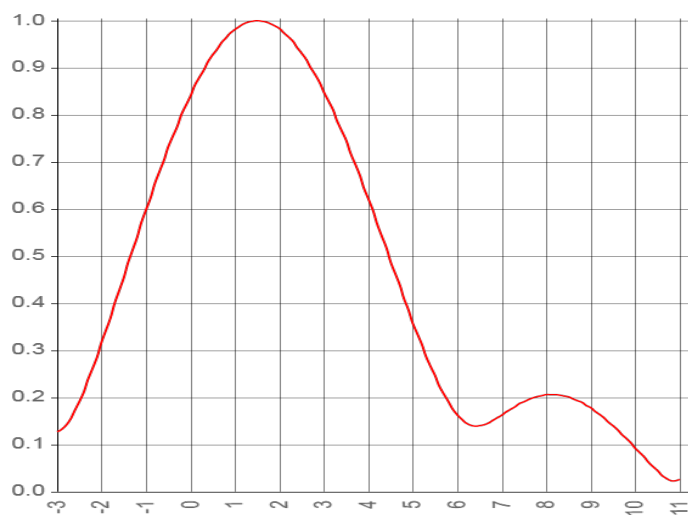
RMS Gain at Horizontal

8.5 (9.30 dB)

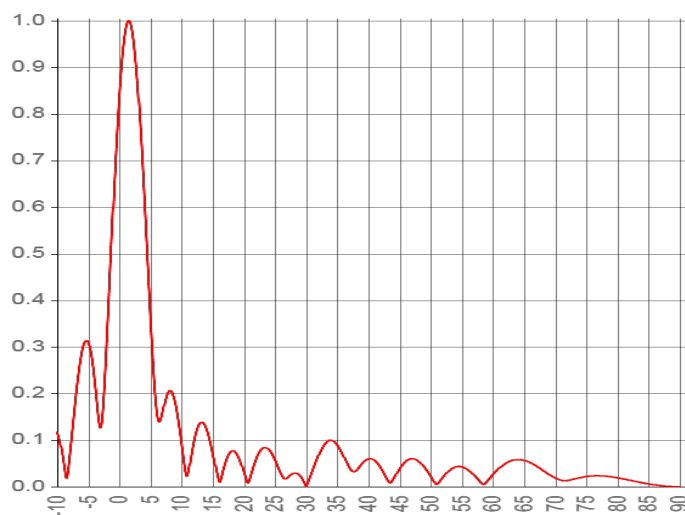
Drawing #

12D120150

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.118	10	0.093	30	0.000	50	0.022	70	0.019
-9	0.055	11	0.026	31	0.034	51	0.005	71	0.014
-8	0.064	12	0.100	32	0.068	52	0.021	72	0.013
-7	0.192	13	0.137	33	0.092	53	0.035	73	0.016
-6	0.289	14	0.124	34	0.100	54	0.043	74	0.019
-5	0.309	15	0.072	35	0.089	55	0.043	75	0.022
-4	0.229	16	0.011	36	0.066	56	0.036	76	0.023
-3	0.127	17	0.051	37	0.039	57	0.024	77	0.024
-2	0.314	18	0.076	38	0.034	58	0.009	78	0.023
-1	0.598	19	0.067	39	0.050	59	0.011	79	0.021
0	0.842	20	0.031	40	0.059	60	0.026	80	0.019
1	0.981	21	0.020	41	0.056	61	0.040	81	0.017
2	0.983	22	0.060	42	0.040	62	0.050	82	0.014
3	0.850	23	0.082	43	0.016	63	0.056	83	0.011
4	0.621	24	0.079	44	0.016	64	0.058	84	0.008
5	0.360	25	0.057	45	0.039	65	0.056	85	0.006
6	0.163	26	0.027	46	0.055	66	0.051	86	0.004
7	0.163	27	0.019	47	0.060	67	0.044	87	0.002
8	0.206	28	0.029	48	0.055	68	0.035	88	0.001
9	0.178	29	0.023	49	0.041	69	0.026	89	0.000

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