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**Engineering Statement
Minor Modification of WDMY-LD
Channel 6 at Toledo, OH
January 2024**

I. Background

This Engineering Statement has been prepared on behalf of VCY America, Inc. ("VCY"), licensee of low-power station WDMY-LD Toledo. This material has been prepared in connection with an application for minor modification.

II. Interference Study

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any authorized or pending proposed facilities. This study was performed using the Commission's TVStudy software.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations, beyond the allowed values of 0.5% to full-power and Class A stations, and 2.0% to low-power stations. Based on the foregoing interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

Study created: 2024.01.22 14:09:40

Study build station data: LMS TV 2024-01-21

Proposal: WDMY-LD D6 LD APP TOLEDO, OH
File number: WDMY-1000531
Facility ID: 49188
Station data: User record
Record ID: 1348
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WGVK	D5	DT	LIC	KALAMAZOO, MI	BLEDT20060703ABQ	182.5 km
Yes	WLMB	D5	DT	LIC	TOLEDO, OH	BLCDT20050201AAF	42.0
No	WRME-LD	D6	LD	LIC	CHICAGO, IL	BLANK0000214704	338.6
No	WRME-LD	N6-	TX	LIC	CHICAGO, IL	BLTVL20100111AIE	338.6
No	WOUC-TV	D6	DT	LIC	CAMBRIDGE, OH	BLANK0000068363	271.4
No	WKBS-TV	D6	DT	LIC	ALTOONA, PA	BLANK0000084211	448.9

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D6
Mask: Full Service
Latitude: 41 51 3.30 N (NAD83)
Longitude: 83 31 55.10 W
Height AMSL: 252.3 m
HAAT: 0.0 m
Peak ERP: 2.20 kW
Antenna: SCA-HDCA10H 20.0 deg
Elev Pattn: Generic

43.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.38 kW	60.0 m	35.4 km
45.0	1.04	66.2	34.8
90.0	0.000	74.7	5.2
135.0	0.003	74.9	10.2
180.0	0.081	68.7	21.2
225.0	0.069	51.3	17.7
270.0	0.001	49.3	6.3
315.0	0.000	53.2	6.1

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 62 m

**Proposal 13.00 dBu contour crosses Canadian border, coordination required
Distance to Canadian border: 38.0 km

Distance to Mexican border: 2089.3 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 293.6 degrees Distance: 216.4 km

Hatfield & Dawson Consulting Engineers

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 271.3 degrees Distance: 1824.6 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

No IX check failures found.

III. Facilities Proposed

The proposed operation will be on Channel 6 with a maximum lobe effective radiated power of 2.2 kilowatts. Operation is proposed with a Scala HDCA-10 antenna, which will be installed on an existing tower with FCC Antenna Structure Registration Number 1000531.

IV. RF Exposure Study

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Power density levels produced by the proposed WDMY-LD facility were calculated for an elevation of 2 meters above ground using the manufacturer's vertical plane pattern for the horizontally-polarized Scala model HDCA-10 antenna proposed in this application. The highest calculated power density from the proposed antenna alone occurs at a point 114 meters from the base of the antenna support structure. At this point the power density from the proposed facility is calculated to be 2.0 $\mu W/cm^2$, which is 1% of 200 $\mu W/cm^2$ (the FCC maximum for uncontrolled environments at the Channel 6 frequency).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of WDMY-LD alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307 of the Commission's Rules exempts applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

January 22, 2024

Erik C. Swanson, P.E.

WDMY-LD Ch6 Toledo

Ground-Level Power Density Calculations

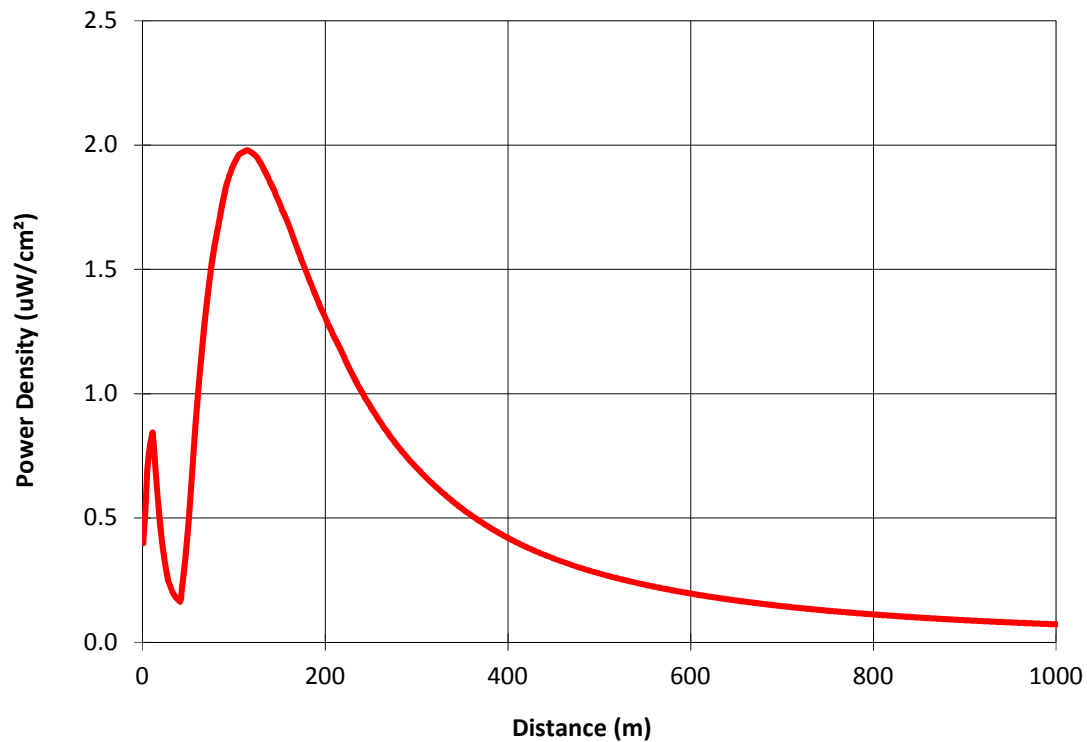
Using Manufacturer's Vertical Plane Pattern

Antenna	HDCA10H	
ERP	2,200	Watts H (avg)
	-	Watts V (avg)
Antenna AGL	60	meters less 2m is
MBT	0	degrees

58 meters above the reference plane

Calculated
Maximum is 2.0 $\mu\text{W}/\text{cm}^2$ at 114 meters from the tower

Power Density vs Distance



WDMY-LD Ch6 Toledo
Ground-Level Power Density Calculations
Using Manufacturer's Vertical Plane Pattern

Distance From Tower (meters)	Hypotenuse (meters)	Depression Angle (with MBT adjust) (degrees)	Interpolated Rel Field	Adjusted ERP (watts)	Power Density uW/cm ²
0	58.00	90.00	0.135	40.1	0.40
1	58.01	89.01	0.145	46.2	0.46
2	58.03	88.03	0.155	52.7	0.52
3	58.08	87.04	0.165	59.6	0.59
4	58.14	86.05	0.174	66.9	0.66
5	58.22	85.07	0.184	74.6	0.74
6	58.31	84.09	0.188	77.5	0.76
7	58.42	83.12	0.191	79.9	0.78
8	58.55	82.15	0.194	82.5	0.80
9	58.69	81.18	0.196	84.9	0.82
10	58.86	80.22	0.199	87.4	0.84
11	59.03	79.26	0.196	84.2	0.81
12	59.23	78.31	0.190	79.3	0.76
13	59.44	77.37	0.184	74.6	0.71
14	59.67	76.43	0.179	70.1	0.66
15	59.91	75.50	0.173	65.8	0.61
16	60.17	74.58	0.168	61.7	0.57
17	60.44	73.66	0.162	57.7	0.53
18	60.73	72.76	0.157	53.9	0.49
19	61.03	71.86	0.151	50.3	0.45
20	61.35	70.97	0.146	46.8	0.42
21	61.68	70.10	0.141	43.5	0.38
22	62.03	69.23	0.137	41.2	0.36
23	62.39	68.37	0.133	38.8	0.33
24	62.77	67.52	0.129	36.4	0.31
25	63.16	66.68	0.125	34.2	0.29
26	63.56	65.85	0.121	32.4	0.27
27	63.98	65.04	0.117	30.2	0.25
28	64.40	64.23	0.116	29.7	0.24
29	64.85	63.43	0.115	29.0	0.23
30	65.30	62.65	0.113	28.1	0.22
31	65.76	61.88	0.111	27.0	0.21
32	66.24	61.11	0.109	26.3	0.20
33	66.73	60.36	0.108	25.8	0.19
34	67.23	59.62	0.108	25.5	0.19
35	67.74	58.89	0.107	25.2	0.18
36	68.26	58.17	0.106	24.8	0.18
37	68.80	57.46	0.106	24.7	0.17
38	69.34	56.77	0.106	24.6	0.17
39	69.89	56.08	0.105	24.3	0.17
40	70.46	55.41	0.105	24.2	0.16
41	71.03	54.74	0.109	26.2	0.17
42	71.61	54.09	0.120	31.5	0.21
43	72.20	53.45	0.130	37.1	0.24
44	72.80	52.82	0.140	43.0	0.27

45	73.41	52.19	0.150	49.4	0.31
46	74.03	51.58	0.160	56.1	0.34
47	74.65	50.98	0.169	63.1	0.38
48	75.29	50.39	0.179	70.3	0.41
49	75.93	49.81	0.189	78.6	0.46
50	76.58	49.24	0.201	88.9	0.51
51	77.23	48.67	0.213	99.7	0.56
52	77.90	48.12	0.224	110.8	0.61
53	78.57	47.58	0.236	122.4	0.66
54	79.25	47.05	0.247	134.3	0.71
55	79.93	46.52	0.258	146.6	0.77
56	80.62	46.01	0.269	159.2	0.82
57	81.32	45.50	0.280	172.0	0.87
58	82.02	45.00	0.290	185.1	0.92
59	82.73	44.51	0.299	197.1	0.96
60	83.45	44.03	0.308	209.4	1.00
61	84.17	43.56	0.318	222.2	1.05
62	84.90	43.09	0.327	235.3	1.09
63	85.63	42.63	0.336	248.8	1.13
64	86.37	42.18	0.345	262.5	1.18
65	87.11	41.74	0.354	275.7	1.21
66	87.86	41.31	0.362	288.7	1.25
67	88.62	40.88	0.370	301.7	1.28
68	89.38	40.46	0.378	314.6	1.32
69	90.14	40.05	0.386	327.6	1.35
70	90.91	39.64	0.394	341.5	1.38
71	91.68	39.25	0.402	355.5	1.41
72	92.46	38.85	0.410	369.6	1.44
73	93.24	38.47	0.418	383.7	1.47
74	94.02	38.09	0.425	397.9	1.50
75	94.81	37.72	0.432	411.5	1.53
76	95.60	37.35	0.439	424.9	1.55
77	96.40	36.99	0.446	438.4	1.58
78	97.20	36.63	0.453	451.6	1.60
79	98.01	36.29	0.460	464.8	1.62
80	98.81	35.94	0.466	478.1	1.64
81	99.62	35.60	0.473	491.9	1.66
82	100.44	35.27	0.479	505.5	1.67
83	101.26	34.95	0.486	519.5	1.69
84	102.08	34.62	0.493	534.9	1.72
85	102.90	34.31	0.500	550.3	1.74
86	103.73	34.00	0.507	565.7	1.76
87	104.56	33.69	0.514	580.8	1.77
88	105.39	33.39	0.520	596.0	1.79
89	106.23	33.09	0.527	611.1	1.81
90	107.07	32.80	0.533	626.0	1.82
91	107.91	32.51	0.540	640.7	1.84
92	108.76	32.23	0.546	655.5	1.85
93	109.60	31.95	0.552	670.1	1.86
94	110.45	31.68	0.558	684.9	1.88
95	111.31	31.41	0.564	699.5	1.89
96	112.16	31.14	0.570	714.1	1.90

