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**Engineering Statement
Minor Modification of WDMY-LD
Channel 6 at Toledo, OH
August 2021**

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 of the digital construction permit on Channel 6 (FCC File No. 000139592).

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.

This application proposes a reduction in height at the authorized transmitter site, with no increase in omni ERP. Therefore, the distance of the 13 dBu contour over Canada is decreased, and further coordination with Canadian authorities will not be necessary.

Study created: 2021.08.02 15:38:02

Study build station data: LMS TV 2021-08-02

Proposal: WDMY-LP D6 LD APP TOLEDO, OH
File number: WDMY-MOD
Facility ID: 49188
Station data: User record
Record ID: 1287
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
Yes	WGVK	D5	DT	LIC	KALAMAZOO, MI	BLEDT20060703ABQ	149.0 km
No	WLWD-LD	D5	LD	CP	SPRINGFIELD, OH	BLANK0000054940	225.4
No	WLMB	D5	DT	CP	TOLEDO, OH	BLANK0000035695	0.0
No	WLMB	D5	DT	LIC	TOLEDO, OH	BLCDT20050201AAF	0.0
No	WRME-LD	D6	LD	LIC	CHICAGO, IL	BLANK0000153585	299.1
No	WRME-LD	N6-	TX	LIC	CHICAGO, IL	BLTVL20100111AIE	299.1
Yes	WOUC-TV	D6	DT	LIC	CAMBRIDGE, OH	BLANK0000068363	293.8

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: Simple
Latitude: 41 44 41.00 N (NAD83)
Longitude: 84 1 6.00 W
Height AMSL: 300.2 m
HAAT: 0.0 m
Peak ERP: 1.50 kW
Antenna: Omnidirectional
Elev Pattn: Generic

43.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.50 kW	68.5 m	37.5 km
45.0	1.50	87.2	40.9
90.0	1.50	82.0	40.0
135.0	1.50	78.7	39.4
180.0	1.50	71.8	38.2
225.0	1.50	64.3	36.8
270.0	1.50	63.8	36.7
315.0	1.50	63.1	36.5

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 72 m

**Proposal 13.00 dBu contour crosses Canadian border, coordination required
Distance to Canadian border: 79.1 km

Distance to Mexican border: 2049.4 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 301.6 degrees Distance: 186.1 km

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Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 271.4 degrees Distance: 1784.6 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. 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 circularly-polarized Dielectric model DCRM4C50R antenna proposed in this application. The highest calculated power density from the proposed antenna alone occurs at a point 289 meters from the base of the antenna support structure. At this point the power density from the proposed facility is calculated to be 0.5 $\mu W/cm^2$, which is 0.25% 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.

August 4, 2021

Erik C. Swanson, P.E.

WDMY-LD Ch6 Toledo

Ground-Level Power Density Calculations

Using Manufacturer's Vertical Plane Pattern

Antenna	DCRM4C50R		
ERP	1,500	Watts H (avg)	
	1,500	Watts V (avg)	
Antenna AGL	76.2	meters less 2m is	74.2 meters above the reference plane
MBT	0	degrees	

Calculated Maximum is 0.5 $\mu\text{W}/\text{cm}^2$ at 289 meters from the tower



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	74.20	90.00	0.000	0.0	0.00
1	74.21	89.23	0.000	0.0	0.00
2	74.23	88.46	0.000	0.0	0.00
3	74.26	87.68	0.000	0.0	0.00
4	74.31	86.91	0.000	0.0	0.00
5	74.37	86.14	0.001	0.0	0.00
6	74.44	85.38	0.001	0.0	0.00
7	74.53	84.61	0.001	0.0	0.00
8	74.63	83.85	0.001	0.0	0.00
9	74.74	83.08	0.002	0.0	0.00
10	74.87	82.32	0.003	0.0	0.00
11	75.01	81.57	0.003	0.0	0.00
12	75.16	80.81	0.004	0.1	0.00
13	75.33	80.06	0.005	0.1	0.00
14	75.51	79.32	0.006	0.1	0.00
15	75.70	78.57	0.007	0.1	0.00
16	75.91	77.83	0.008	0.2	0.00
17	76.12	77.10	0.010	0.3	0.00
18	76.35	76.36	0.011	0.4	0.00
19	76.59	75.64	0.013	0.5	0.00
20	76.85	74.91	0.014	0.6	0.00
21	77.11	74.20	0.016	0.8	0.00
22	77.39	73.49	0.019	1.0	0.01
23	77.68	72.78	0.021	1.3	0.01
24	77.98	72.08	0.024	1.7	0.01
25	78.30	71.38	0.026	2.0	0.01
26	78.62	70.69	0.028	2.4	0.01
27	78.96	70.00	0.031	2.9	0.02
28	79.31	69.33	0.034	3.5	0.02
29	79.67	68.65	0.038	4.3	0.02
30	80.04	67.99	0.041	5.1	0.03
31	80.42	67.33	0.044	5.9	0.03
32	80.81	66.67	0.048	6.8	0.03
33	81.21	66.02	0.051	7.8	0.04
34	81.62	65.38	0.055	9.0	0.05
35	82.04	64.75	0.059	10.3	0.05
36	82.47	64.12	0.062	11.6	0.06
37	82.91	63.50	0.067	13.3	0.06
38	83.36	62.88	0.071	15.0	0.07
39	83.83	62.27	0.075	16.9	0.08
40	84.29	61.67	0.079	18.9	0.09
41	84.77	61.08	0.083	20.9	0.10
42	85.26	60.49	0.088	23.0	0.11
43	85.76	59.91	0.092	25.3	0.11
44	86.26	59.33	0.096	27.8	0.13

45	86.78	58.76	0.101	30.4	0.13
46	87.30	58.20	0.105	32.8	0.14
47	87.83	57.65	0.109	35.5	0.15
48	88.37	57.10	0.113	38.4	0.16
49	88.92	56.56	0.118	41.4	0.18
50	89.47	56.03	0.122	44.5	0.19
51	90.04	55.50	0.126	47.3	0.19
52	90.61	54.98	0.129	50.1	0.20
53	91.18	54.46	0.133	53.3	0.21
54	91.77	53.95	0.137	56.6	0.22
55	92.36	53.45	0.141	59.5	0.23
56	92.96	52.96	0.144	62.5	0.24
57	93.57	52.47	0.148	65.5	0.25
58	94.18	51.99	0.151	68.5	0.26
59	94.80	51.51	0.154	71.5	0.27
60	95.42	51.04	0.158	74.6	0.27
61	96.06	50.58	0.161	77.3	0.28
62	96.69	50.12	0.163	80.0	0.29
63	97.34	49.67	0.166	82.7	0.29
64	97.99	49.22	0.169	85.4	0.30
65	98.64	48.78	0.171	87.6	0.30
66	99.31	48.35	0.173	89.4	0.30
67	99.97	47.92	0.174	91.2	0.30
68	100.65	47.50	0.176	92.9	0.31
69	101.32	47.08	0.178	94.7	0.31
70	102.01	46.67	0.179	96.1	0.31
71	102.70	46.26	0.180	97.4	0.31
72	103.39	45.86	0.181	98.6	0.31
73	104.09	45.47	0.182	99.4	0.31
74	104.79	45.08	0.183	100.3	0.31
75	105.50	44.69	0.183	100.8	0.30
76	106.22	44.31	0.184	101.2	0.30
77	106.93	43.94	0.184	101.5	0.30
78	107.66	43.57	0.184	101.1	0.29
79	108.38	43.21	0.183	100.7	0.29
80	109.11	42.85	0.183	100.1	0.28
81	109.85	42.49	0.182	99.4	0.28
82	110.59	42.14	0.181	98.6	0.27
83	111.33	41.80	0.180	97.4	0.26
84	112.08	41.46	0.179	95.9	0.26
85	112.83	41.12	0.177	94.5	0.25
86	113.59	40.79	0.176	92.6	0.24
87	114.34	40.46	0.174	90.6	0.23
88	115.11	40.14	0.172	88.6	0.22
89	115.87	39.82	0.170	86.4	0.22
90	116.64	39.50	0.168	84.2	0.21
91	117.42	39.19	0.165	82.0	0.20
92	118.19	38.89	0.163	79.6	0.19
93	118.97	38.58	0.160	76.7	0.18
94	119.76	38.29	0.157	73.8	0.17
95	120.54	37.99	0.154	71.1	0.16
96	121.33	37.70	0.151	68.1	0.15