

ENGINEERING STATEMENT

PROPOSED NEW LPFM STATION

SUMMARY:

The applicant seeks a new LPFM station. This proposal is short-spaced to one or more second-adjacent stations. Contour protection is provided by the D/U method, in compliance with 73.807(e)(1). **See Exhibit 11.** A waiver of second-adjacent spacing is hereby requested.

PERTINENT SPECIFICATIONS NOT INCLUDED IN SECTION VI - TECH BOX:

HAAT: 60 meters

ERP: 25 watts

DATA SOURCE: V-Soft FMCommander with HAAT Method 0(zero); FCC 30 Second
Terrain

SUPPORT STRUCTURE: Tower

EXHIBIT 11 INTERFERENCE

REFERENCE		DISPLAY DATES
42 39 50.0 N.	CLASS = L1 Int = L1	DATA 11-12-13
73 40 42.0 W.	Current Spacings to 2nd Adj.	SEARCH 11-12-13
----- Channel 224 - 92.7 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
WFLY	LIC	222B	Troy	NY	263.8	26.42 66.5 -40.1
W226AC	LIC	226D	Rensselaer, Etc.	NY	241.0	0.70 7.5 -6.8
W226AC	CP -D	226D	Troy	NY	16.7	14.14 20.5 -6.4
W225BM	CP	225D	Scotia	NY	303.3	37.86 20.5 17.4
WKVT-FM	LIC	224A	Brattleboro	VT	72.4	86.94 66.5 20.4
Class B1 with respect to Canada						
WBPM	LIC-Z	225A	Saugerties	NY	200.6	80.06 55.5 24.6
1571055	APP	224D	Saratoga Springs	NY	350.9	54.50 25.5 29.0
1564366	APP	224D	Saratoga Springs	NY	350.9	54.50 25.5 29.0
WHYN-FM	LIC	226B	Springfield	MA	118.8	96.83 66.5 30.3
1564800	APP	226D	Saratoga Springs	NY	347.6	46.59 7.5 39.1
1567578	APP	226D	Saratoga Springs	NY	347.6	46.59 7.5 39.1
WWYZ	LIC	223B	Waterbury	CT	150.4	140.36 96.5 43.9
WXUR	LIC	224B1	Herkimer	NY	294.1	133.56 86.5 47.1
WGFR	LIC	224D	Glens Falls	NY	1.9	72.06 23.5 48.6

Reference station has protected zone issue:
All separation margins include rounding

PROTECTED ZONES REPORT:

Protected zones report for NEW on channel 224L1 11-12-2013
Lat. 42 39 50.0 Lng. 73 40 42.0, ERP= 0.025 kw, HAAT= 60M

*** Station must coordinate with Canada. Distance to border = 260.0 km.
Facility is okay with respect to AM station towers.

Closest AM Facility is WGDJ, RENSSELAER, NY, L, DA2 at 212.9° at a distance of 9.8 km

Facility is okay with respect to FCC monitoring stations.

Closest FCC Monitoring Station is 294.9 km= Canandaigua, NY

Facility is okay toward West Virginia Quiet Zone. Distance to center = 685.7 km

Facility is okay toward Table Mountain. Distance to Center = 2654.3 km, Azimuth = 274.6 Degrees True

CONTOUR PROTECTION TO 2ND-ADJACENT STATIONS:

Contour protection to 2nd-adjacent stations WFLY, W226AC (Lic.) and W226AC (CP) is provided using the ratio method. The F(50/50) contour of WFLY is 78.4dBu at the proposed

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site. The F(50/50) contour of W226AC (Lic.) is 99.0dBu at the proposed site. The F(50/50) contour of W226AC (CP) is 63.1dBu at the proposed site. Using the appropriate U/D ratio of 40dB vs. W226AC (CP), the corresponding “worst-case” interfering contour of the proposed LPFM is 103.1dBu.

The proposed 4-bay, 0.75-wavelength-spaced Shively 6812-4 antenna would be mounted on a 92 meter tower. The center of radiation would be 36 meters above the ground. At the full 25 watts ERP, this interfering contour would extend to a distance of 245.3 meters from the antenna. However, the field strength of the proposed antenna system falls quickly at depression angles below the horizon. Using elevation pattern data provided by Shively, the distance to the 103.1dBu contour at various depression angles is tabulated in **Exhibit 11a**, which shows a minimum contour clearance above ground of 0.63 meters.

The surrounding neighborhood (within 245.3 meters) has only one and two story buildings. The uppermost populated floor level of these buildings is believed to be no less than 37 meters below the center of radiation. No areas of interference come close to any of these surfaces. The roofs of the surrounding buildings are not inhabited surfaces.

Therefore, there are no populated areas within the interference zone.

Exhibit 11a

SECOND-ADJACENT INTERFERENCE PROTECTION TO POPULATED AREAS

NEW LPFM CH 224

103.10

0.1429

W226AC (CP)

25

SHIVELY 6812-4, 0.75WAVE

<CALL LETTERS OR FILE NUMBER

<PROPOSED COMMUNITY OF LICENSE

<INTERFERING CONTOUR OF PROPOSAL - dBu

<V/m

<2nd-ADJ STN REQUIRING INTERFERENCE PROT. (worst case)

<PROP. ERP (W)

<ANTENNA MODEL

max ERP (W)	depression angle below horizon (deg)	relative field	ERP (W)	angular distance to contour (m)	vertical distance (below antenna) (m)	horiz distance to contour (m)	vertical distance below antenna required to clear nearest populated level (m)	clearance of interfering contour above nearest populated level (m)
25	0	1	25.00	245.29	0.0	245.3	37	37.00
25	5	0.894	19.98	219.29	19.1	218.5	37	17.89
25	10	0.618	9.55	151.59	26.3	149.3	37	10.68
25	15	0.273	1.86	66.97	17.3	64.7	37	19.67
25	20	0.027	0.02	6.62	2.3	6.2	37	34.73
25	25	0.202	1.02	49.55	20.9	44.9	37	16.06
25	30	0.236	1.39	57.89	28.9	50.1	37	8.06
25	35	0.163	0.66	39.98	22.9	32.8	37	14.07
25	40	0.043	0.05	10.55	6.8	8.1	37	30.22
25	45	0.067	0.11	16.43	11.6	11.6	37	25.38
25	50	0.135	0.46	33.11	25.4	21.3	37	11.63
25	55	0.155	0.60	38.02	31.1	21.8	37	5.86
25	60	0.137	0.47	33.61	29.1	16.8	37	7.90
25	65	0.1	0.25	24.53	22.2	10.4	37	14.77
25	70	0.06	0.09	14.72	13.8	5.0	37	23.17
25	75	0.028	0.02	6.87	6.6	1.8	37	30.37
25	80	0.009	0.00	2.21	2.2	0.4	37	34.83
25	85	0.001	0.00	0.25	0.2	0.0	37	36.76
25	90	0	0.00		0.0	0.0	37	37.00

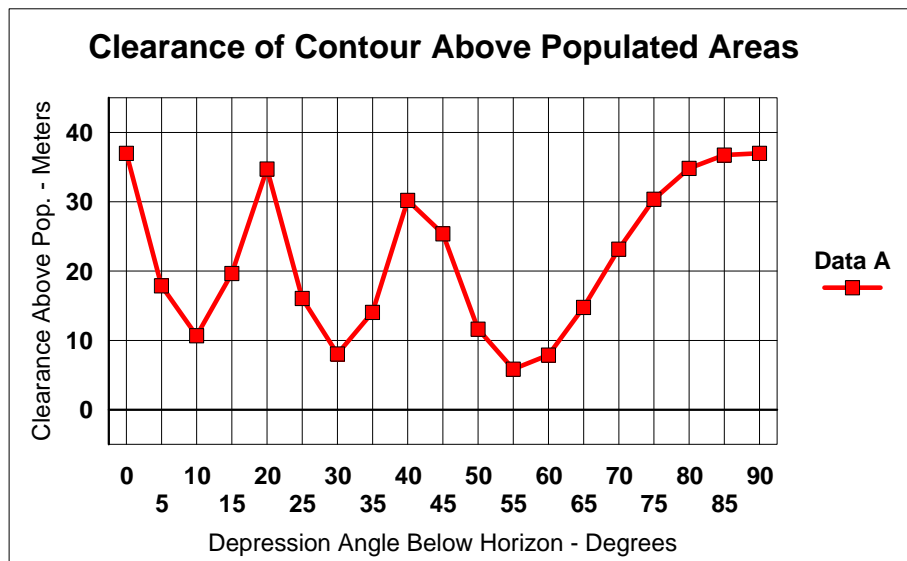


EXHIBIT 14

ENVIRONMENTAL PROTECTION ACT / NIER ANALYSIS

The applicant proposes mounting a new antenna on a 92 meter registered tower. The proposed center of radiation is 33m AGL. A 4-bay, 0.75-wave-spaced Shively 6812-4 antenna is anticipated. This antenna is the functional equivalent of the Shively 6810. Calculations were made using FM Model for Windows, version 2.10, using the "Shively 6810" setting. FM Model predicted a peak exposure of $0.018\mu\text{W}/\text{cm}^2$, at 23.2 meters from the tower. This represents 0.009% of the Maximum Permissible Exposure (MPE) of $200\mu\text{W}/\text{cm}^2$ for uncontrolled environments. 47 CFR §1.1307(b)(3) exempts applicants from preparing an Environmental Assessment when the predicted exposure levels would be less than 5% of the FCC limits.

The applicant will ensure that public access to the tower is restricted by fencing, anti-climb devices, or other appropriate measures. The site will be posted with appropriate RF exposure warning signs. If tower climbing by authorized personnel becomes necessary, transmitter power will be reduced or operation will cease, as necessary, so as to not exceed the RF exposure limits.

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