Technical Statement

Application for Construction Permit

W224DL Quinns Corner, PA

May, 2017

This technical statement is prepared by Charles Williamson, licensee of W224DL at Quinns Corner, PA. This application serves two purposes: (1) Specify a different channel and (2) specify a different power level.

It is proposed to operate on channel 277 (103.3 mHz) with an effective power output of 55 watts utilizing a directional Nicom BKG77 antenna.

The Interference Study performed (included at Exhibit 13) shows one potential overlap condition to second adjacent WNNJ at Newton, NJ. A waiver of 1204(d) is hereby requested as it will be shown that no actual interference will occur to WNNJ. WNNJ operates on second adjacent channel 279 (103.7 mHz) as a Class B1 station. It is determined that WNNJ has signal strength of 74.5 dBu at the proposed translator site. In order for actual interference to occur, the interfering signal must be 40 db greater than the protected signal. By taking into account the 74.5 dBu signal from WNNJ and adding 40 dBu to it, the interfering contour then becomes 114.5 dBu. The table below clearly demonstrates that this interfering contour does not come close to ground level.

Depression Angle from Horizon	Antenna Relative Field	ERP (kw) from the Antenna RF	Dist. To IX Contour (m)	Height IX Contour Above Ground (m)
0	1.000	0.0550	97.9899	57.000
5	0.999	0.0549	97.8919	48.468
10	0.982	0.0530	96.2261	40.291
15	0.954	0.0501	93.4824	32.805
20	0.918	0.0463	89.9547	26.234
25	0.872	0.0418	85.4472	20.888
30	0.818	0.0368	80.1067	16.947
35	0.758	0.0316	74.2763	14.397
40	0.691	0.0263	67.7110	13.476
45	0.616	0.0209	60.3618	14.318
50	0.538	0.0159	52.7186	16.615
55	0.465	0.0119	45.5653	19.675
60	0.391	0.0084	38.3141	23.819
65	0.313	0.0054	30.6708	29.203
70	0.239	0.0031	23.4196	34.993
75	0.176	0.0017	17.2462	40.341
80	0.129	0.0009	12.6407	44.551
85	0.103	0.0006	10.0930	46.945
90	0.104	0.0006	10.1910	46.809

As demonstrated above, there will be no interference to WNNJ. It is therefore the conclusion of the applicant that this request for waiver is within the guidelines of the FCC rules.

The Translator Station antenna will be located on an existing tower structure. The elevation is compliant with 74.1235 pertaining to Power Limitations. Specifically, the Effective Radiated Power (ERP) on each of the twelve radials used in determining Height Above Average Terrain (HAAT) does not exceed the Maximum ERP permitted on each of the radials based on its individual HAAT. The following table details this conclusion.

Bearing	Radial HAAT	Permitted ERP	Actual ERP
0	-68	250	53.15
30	-14	250	53.15
60	62	55	53.69
90	2	250	54.23
120	-31	250	44.55
150	-31	250	26.87
180	53	80	18.50
210	99	19	16.88
240	-73	250	20.47
270	-115	250	32.10
300	-121	250	51.01
330	-86	250	55.00
degrees	**Meters**	**watts**	**watts**