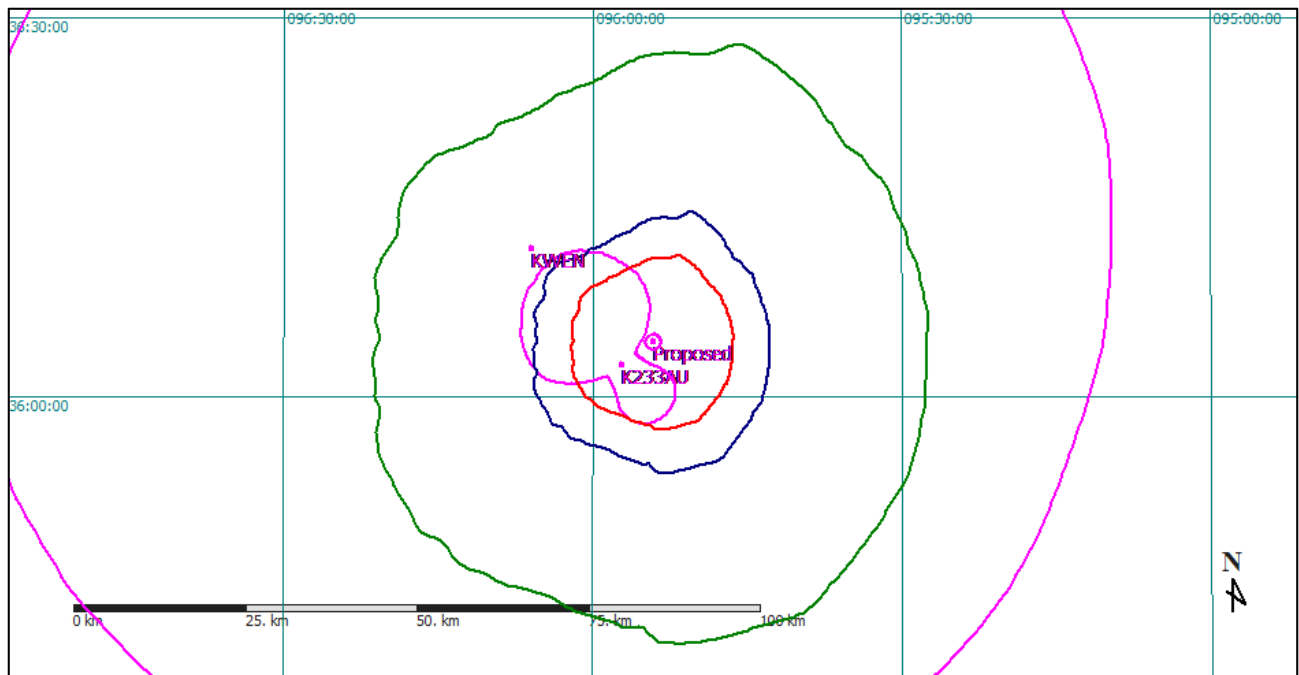


INTERFERENCE AND OVERLAP REQUIREMENTS K235BK TULSA, OK

The following study demonstrates that the proposed facility will not create prohibited overlap to any other licensed full-power facility or pending application other than to third-adjacent KWEN (FID #48722). As more fully discussed below, processing pursuant to 47 C.F.R. § 74.1204(d) is appropriate here.



The green contours represent co-channel interfering (40 dBu) to co-channel protected (60 dBu) contours. Blue contours represent first-adjacent channel interfering (54 dBu) to first-adjacent protected (60 dBu) contours. Magenta contours represent second and third-adjacent channel interfering (100 dBu) to second and third-adjacent protected (60 dBu) contours. Red contours represent co-channel protected (60 dBu) to co-channel interfering (40 dBu) contours.

In the instant case, the facilities of KWEN are on a third-adjacent channel to the proposed translator. KWEN is authorized to broadcast with 100 kilowatts at 453 meters HAAT from a site that is 22.22 kilometers from the proposed translator site. The predicted strength of KWEN at the

proposed translator site is 89.79 dBu. Therefore, 129.79 is the lowest value predicted to cause interference to KWEN.

The facility proposed herein will utilize a single-bay Shively Versa2une antenna that employs half-wave spacing.

The table on the following page depicts the predicted signal strength from the proposed translator both at ground level, and at receiving antenna locations up to 15 meters (50 feet) above ground level. The 15 meter “artificial plane” is significantly higher than any structure within the zone of potential interference.

As can be determined by the columns colored green, at no location from ground level to 15 meters above the ground does the predicted signal of the proposed translator exceed that of KWEN by 40 dBu or more.

The aerial image below demonstrates that no nearby structures pierce the 15 meter plane utilized in the foregoing analysis.



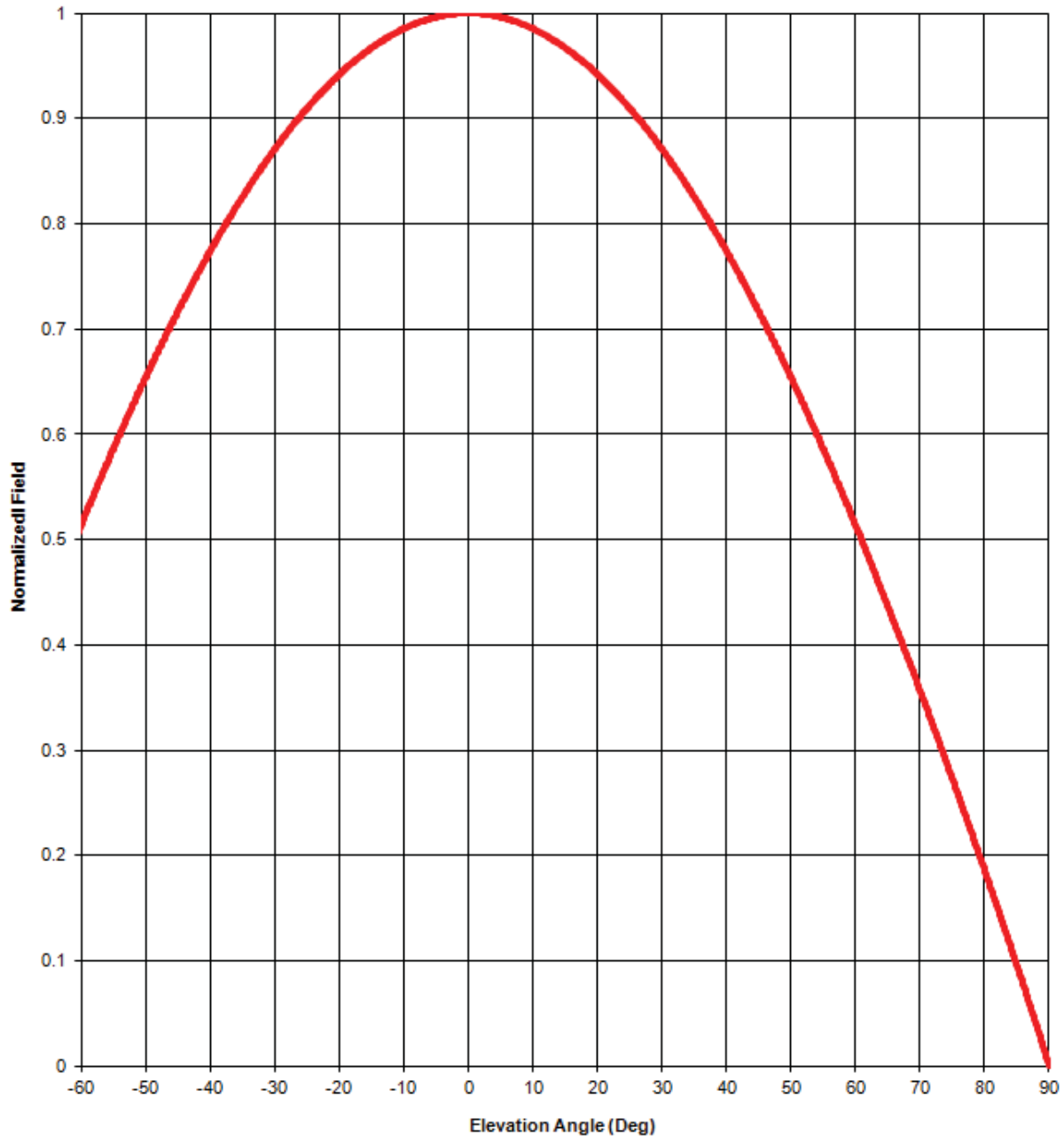
The Applicant respectfully submits that since a lack of population exists in the area of predicted interference, that processing pursuant to 47 C.F.R § 74.1204(d) is appropriate for the instant application.

Proposed Antenna: Shively Labs Versa2une Single Bay Proposed Power: 0.25 kW Antenna Height AGL: 33 meters Interference Contour: 129.79 dBu Artificial Rcv Antenna Height: 15 meters Distance (Free Space) Equation: $= (10^{((106.92 - [\text{desired dBu}] + [\text{ERP in dBk}]) / 20)}) * 1000$ Field Strength (dBu) Equation: $= 106.92 - (20 * (\text{LOG10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$								
Depression				Distance				
Angle	Antenna			from Ant.	Distance	Field Strength	Distance	Field Strength
Below	Relative	ERP	ERP	to Interf	from Ant. to	in dBu @	from Ant.	in dBu @
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level
0	1	0.250	-6.02	36	infinite		infinite	
-1	1	0.250	-6.02	36	1031	100.63 dBu	1890.86 m	95.37 dBu
-2	0.999	0.250	-6.03	36	516	106.64 dBu	945.57 m	101.38 dBu
-3	0.997	0.249	-6.05	36	344	110.14 dBu	630.54 m	104.88 dBu
-4	0.995	0.248	-6.06	36	258	112.62 dBu	473.07 m	107.36 dBu
-5	0.992	0.246	-6.09	36	207	114.53 dBu	378.63 m	109.27 dBu
-6	0.989	0.245	-6.12	36	172	116.08 dBu	315.70 m	110.82 dBu
-7	0.985	0.243	-6.15	35	148	117.38 dBu	270.78 m	112.12 dBu
-8	0.981	0.241	-6.19	35	129	118.50 dBu	237.11 m	113.23 dBu
-9	0.976	0.238	-6.23	35	115	119.47 dBu	210.95 m	114.20 dBu
-10	0.97	0.235	-6.29	35	104	120.32 dBu	190.04 m	115.06 dBu
-11	0.964	0.232	-6.34	35	94	121.09 dBu	172.95 m	115.82 dBu
-12	0.957	0.229	-6.40	34	87	121.77 dBu	158.72 m	116.50 dBu
-13	0.949	0.225	-6.48	34	80	122.38 dBu	146.70 m	117.12 dBu
-14	0.941	0.221	-6.55	34	74	122.94 dBu	136.41 m	117.67 dBu
-15	0.933	0.218	-6.62	34	70	123.45 dBu	127.50 m	118.19 dBu
-16	0.924	0.213	-6.71	33	65	123.91 dBu	119.72 m	118.65 dBu
-17	0.915	0.209	-6.79	33	62	124.34 dBu	112.87 m	119.08 dBu
-18	0.905	0.205	-6.89	33	58	124.73 dBu	106.79 m	119.46 dBu
-19	0.894	0.200	-6.99	32	55	125.07 dBu	101.36 m	119.81 dBu
-20	0.883	0.195	-7.10	32	53	125.39 dBu	96.49 m	120.13 dBu
-21	0.872	0.190	-7.21	31	50	125.69 dBu	92.08 m	120.43 dBu
-22	0.86	0.185	-7.33	31	48	125.96 dBu	88.09 m	120.69 dBu
-23	0.847	0.179	-7.46	30	46	126.19 dBu	84.46 m	120.92 dBu
-24	0.835	0.174	-7.59	30	44	126.41 dBu	81.13 m	121.15 dBu
-25	0.821	0.169	-7.73	29	43	126.60 dBu	78.08 m	121.33 dBu
-26	0.808	0.163	-7.87	29	41	126.78 dBu	75.28 m	121.51 dBu
-27	0.794	0.158	-8.02	29	40	126.93 dBu	72.69 m	121.67 dBu
-28	0.78	0.152	-8.18	28	38	127.07 dBu	70.29 m	121.80 dBu
-29	0.765	0.146	-8.35	27	37	127.18 dBu	68.07 m	121.91 dBu

-30	0.75	0.141	-8.52	27	36	127.27 dBu	66.00 m	122.01 dBu
-31	0.735	0.135	-8.69	26	35	127.36 dBu	64.07 m	122.09 dBu
-32	0.719	0.129	-8.89	26	34	127.41 dBu	62.27 m	122.15 dBu
-33	0.703	0.124	-9.08	25	33	127.46 dBu	60.59 m	122.19 dBu
-34	0.687	0.118	-9.28	25	32	127.48 dBu	59.01 m	122.22 dBu
-35	0.671	0.113	-9.49	24	31	127.50 dBu	57.53 m	122.24 dBu
-36	0.655	0.107	-9.70	24	31	127.50 dBu	56.14 m	122.24 dBu
-37	0.638	0.102	-9.92	23	30	127.48 dBu	54.83 m	122.21 dBu
-38	0.621	0.096	-10.16	22	29	127.44 dBu	53.60 m	122.18 dBu
-39	0.604	0.091	-10.40	22	29	127.39 dBu	52.44 m	122.13 dBu
-40	0.587	0.086	-10.65	21	28	127.33 dBu	51.34 m	122.06 dBu
-41	0.57	0.081	-10.90	20	27	127.25 dBu	50.30 m	121.99 dBu
-42	0.552	0.076	-11.18	20	27	127.14 dBu	49.32 m	121.88 dBu
-43	0.535	0.072	-11.45	19	26	127.04 dBu	48.39 m	121.77 dBu
-44	0.517	0.067	-11.75	19	26	126.90 dBu	47.51 m	121.63 dBu
-45	0.5	0.063	-12.04	18	25	126.76 dBu	46.67 m	121.50 dBu
-46	0.483	0.058	-12.34	17	25	126.61 dBu	45.88 m	121.35 dBu
-47	0.465	0.054	-12.67	17	25	126.43 dBu	45.12 m	121.16 dBu
-48	0.448	0.050	-13.00	16	24	126.24 dBu	44.41 m	120.98 dBu
-49	0.43	0.046	-13.35	15	24	126.02 dBu	43.73 m	120.75 dBu
-50	0.413	0.043	-13.70	15	23	125.80 dBu	43.08 m	120.53 dBu
-51	0.396	0.039	-14.07	14	23	125.56 dBu	42.46 m	120.29 dBu
-52	0.379	0.036	-14.45	14	23	125.30 dBu	41.88 m	120.03 dBu
-53	0.362	0.033	-14.85	13	23	125.02 dBu	41.32 m	119.75 dBu
-54	0.345	0.030	-15.26	12	22	124.71 dBu	40.79 m	119.44 dBu
-55	0.329	0.027	-15.68	12	22	124.41 dBu	40.29 m	119.14 dBu
-56	0.313	0.024	-16.11	11	22	124.08 dBu	39.81 m	118.81 dBu
-57	0.297	0.022	-16.57	11	21	123.72 dBu	39.35 m	118.46 dBu
-58	0.281	0.020	-17.05	10	21	123.34 dBu	38.91 m	118.07 dBu
-59	0.265	0.018	-17.56	10	21	122.92 dBu	38.50 m	117.66 dBu
-60	0.25	0.016	-18.06	9	21	122.50 dBu	38.11 m	117.24 dBu
-61	0.235	0.014	-18.60	8	21	122.05 dBu	37.73 m	116.79 dBu
-62	0.22	0.012	-19.17	8	20	121.56 dBu	37.37 m	116.30 dBu
-63	0.206	0.011	-19.74	7	20	121.07 dBu	37.04 m	115.80 dBu
-64	0.192	0.009	-20.35	7	20	120.53 dBu	36.72 m	115.27 dBu
-65	0.179	0.008	-20.96	6	20	120.00 dBu	36.41 m	114.73 dBu
-66	0.165	0.007	-21.67	6	20	119.36 dBu	36.12 m	114.09 dBu
-67	0.153	0.006	-22.33	5	20	118.77 dBu	35.85 m	113.50 dBu
-68	0.14	0.005	-23.10	5	19	118.06 dBu	35.59 m	112.79 dBu
-69	0.128	0.004	-23.88	5	19	117.34 dBu	35.35 m	112.08 dBu
-70	0.117	0.003	-24.66	4	19	116.62 dBu	35.12 m	111.35 dBu
-71	0.106	0.003	-25.51	4	19	115.81 dBu	34.90 m	110.55 dBu
-72	0.095	0.002	-26.47	3	19	114.91 dBu	34.70 m	109.65 dBu
-73	0.085	0.002	-27.43	3	19	113.99 dBu	34.51 m	108.73 dBu

-74	0.076	0.001	-28.40	3	19	113.07 dBu	34.33 m	107.80 dBu
-75	0.067	0.001	-29.50	2	19	112.01 dBu	34.16 m	106.75 dBu
-76	0.059	0.001	-30.60	2	19	110.95 dBu	34.01 m	105.68 dBu
-77	0.051	0.001	-31.87	2	18	109.72 dBu	33.87 m	104.46 dBu
-78	0.043	0.000	-33.35	2	18	108.27 dBu	33.74 m	103.01 dBu
-79	0.036	0.000	-34.89	1	18	106.76 dBu	33.62 m	101.49 dBu
-80	0.03	0.000	-36.48	1	18	105.20 dBu	33.51 m	99.94 dBu
-81	0.024	0.000	-38.42	1	18	103.29 dBu	33.41 m	98.03 dBu
-82	0.019	0.000	-40.45	1	18	101.28 dBu	33.32 m	96.02 dBu
-83	0.015	0.000	-42.50	1	18	99.25 dBu	33.25 m	93.99 dBu
-84	0.011	0.000	-45.19	0	18	96.57 dBu	33.18 m	91.31 dBu
-85	0.008	0.000	-47.96	0	18	93.82 dBu	33.13 m	88.56 dBu
-86	0.005	0.000	-52.04	0	18	89.75 dBu	33.08 m	84.49 dBu
-87	0.003	0.000	-56.48	0	18	85.32 dBu	33.05 m	80.06 dBu
-88	0.001	0.000	-66.02	0	18	75.79 dBu	33.02 m	70.52 dBu
-89	0.001	0.000	-66.02	0	18	75.79 dBu	33.01 m	70.53 dBu
-90	0.001	0.000	-66.02	0	18	75.79 dBu	33.00 m	70.53 dBu

Elevation pattern



Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, 68xx except 6832, & Versa2une, single bay

Test frequency: 98.1 MHz

Gain (maximum):

	Power	dB
6014, 6015, 68xx:	0.45	-3.43 dB
6510, 6513, 6600:	0.91	-0.43 dB

Document No. 68xx-1 bay fw (130701)

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Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	1.000	19	0.948	37	0.806	55	0.586	73	0.307
2	0.999	20	0.942	38	0.796	56	0.572	74	0.290
3	0.999	21	0.936	39	0.785	57	0.558	75	0.273
4	0.998	22	0.930	40	0.774	58	0.544	76	0.256
5	0.996	23	0.924	41	0.763	59	0.529	77	0.239
6	0.995	24	0.917	42	0.752	60	0.514	78	0.221
7	0.993	25	0.910	43	0.741	61	0.499	79	0.204
8	0.991	26	0.903	44	0.729	62	0.484	80	0.186
9	0.988	27	0.895	45	0.717	63	0.469	81	0.168
10	0.985	28	0.887	46	0.705	64	0.453	82	0.151
11	0.982	29	0.879	47	0.693	65	0.437	83	0.133
12	0.979	30	0.871	48	0.680	66	0.422	84	0.114
13	0.975	31	0.862	49	0.667	67	0.406	85	0.096
14	0.971	32	0.854	50	0.654	68	0.390	86	0.078
15	0.967	33	0.845	51	0.641	69	0.373	87	0.059
16	0.963	34	0.835	52	0.628	70	0.357	88	0.040
17	0.958	35	0.826	53	0.614	71	0.341	89	0.021
18	0.953	36	0.816	54	0.600	72	0.324	90	0.000

Elevation Pattern Tabulation

Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, 68xx except 6832, & Versa2une, single bay.

Relative Field at 0° Depression = 1.000