

# **Exhibit #18D** **§73.509 Clearance to KEAF (FM)**

## **New NCE-FM**

Channel 215C1 – 90.9 MHz  
100 kW ERP (DA) – 148 m HAAT  
Tahlequah, Oklahoma  
March 2012

## **FM Over Calculation**

02-03-2012      Terrain Data: NGDC 30 SEC      FMOver Analysis

NEW NCE-FM (Proposed)  
Channel = 215C1  
Max ERP = 100 kW  
RCAMSL = 470 M  
N. Lat. 36 11 16.0  
W. Lng. 94 41 20.0

KEAF BLED20090126AAA  
Channel = 214C0  
Max ERP = 26 kW  
RCAMSL = 890 M  
N. Lat. 35 09 56.0  
W. Lng. 93 40 36.0

Protected  
60 dBu

Interfering  
54 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
081.0	096.5044	0132.6	055.7	343.5	012.9584	0662.1	127.5	48.36	
082.0	093.0709	0132.1	055.3	343.3	012.8242	0661.8	126.6	48.56	
083.0	089.6997	0131.4	054.9	343.0	012.6692	0661.4	125.7	48.75	
084.0	086.3906	0131.0	054.5	342.8	012.5157	0661.1	124.9	48.93	
085.0	083.1437	0130.7	054.1	342.5	012.3642	0660.7	124.0	49.11	
086.0	079.9591	0130.4	053.7	342.2	012.2043	0660.3	123.2	49.27	
087.0	076.8366	0130.0	053.3	341.9	012.0375	0659.9	122.4	49.43	
088.0	073.7762	0129.8	052.9	341.6	011.8694	0659.5	121.6	49.59	
089.0	070.7781	0128.5	052.3	341.2	011.6581	0659.0	120.9	49.70	
090.0	067.8422	0127.1	051.8	340.8	011.4387	0658.5	120.2	49.80	
091.0	065.0803	0125.7	051.2	340.4	011.2189	0658.0	119.6	49.89	
092.0	062.3757	0124.3	050.6	340.0	010.9953	0657.4	119.0	49.97	
093.0	059.7285	0122.7	050.0	339.6	010.9850	0656.8	118.4	50.12	
094.0	057.1388	0121.8	049.4	339.2	010.9850	0656.1	117.8	50.27	
095.0	054.6064	0121.0	048.9	338.8	010.9850	0655.5	117.3	50.42	
096.0	052.1314	0120.1	048.4	338.3	010.9850	0654.8	116.8	50.55	
097.0	049.7139	0119.2	047.8	337.9	010.9850	0654.0	116.3	50.67	
098.0	047.3537	0118.2	047.2	337.4	010.9850	0653.0	115.9	50.78	
099.0	045.0509	0117.4	046.7	337.0	010.9850	0651.8	115.5	50.87	
100.0	042.8055	0117.3	046.2	336.6	010.9850	0650.5	115.1	50.98	
101.0	041.0629	0118.0	045.9	336.3	010.9850	0649.5	114.5	51.11	
102.0	039.3564	0119.4	045.8	335.9	010.9850	0648.6	114.0	51.25	
103.0	037.6862	0120.9	045.6	335.6	010.9850	0647.6	113.5	51.39	
104.0	036.0521	0122.7	045.5	335.3	010.9850	0646.7	112.9	51.53	
105.0	034.4543	0124.9	045.4	335.0	010.9850	0646.0	112.4	51.67	
106.0	032.8927	0126.8	045.2	334.7	010.9850	0645.2	111.9	51.80	
107.0	031.3673	0128.3	045.0	334.4	010.9850	0644.7	111.4	51.91	
108.0	029.8782	0129.3	044.7	334.0	010.9850	0644.4	111.1	52.01	
109.0	028.4252	0130.1	044.4	333.6	010.9850	0644.4	110.7	52.10	
110.0	027.0085	0131.2	044.1	333.2	010.9850	0644.6	110.4	52.19	
111.0	025.9089	0132.4	044.0	332.8	010.9850	0644.9	110.0	52.29	
112.0	024.8322	0133.8	043.8	332.5	010.9850	0645.2	109.7	52.39	
113.0	023.7784	0135.0	043.6	332.1	010.9850	0645.5	109.3	52.49	
114.0	022.7474	0136.5	043.4	331.7	010.9850	0645.8	109.0	52.58	
115.0	021.7392	0137.8	043.2	331.3	010.9850	0646.1	108.7	52.66	
116.0	020.7539	0138.8	042.9	330.9	010.9850	0646.4	108.5	52.72	
117.0	019.7915	0139.8	042.6	330.5	010.9850	0646.7	108.3	52.78	

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
118.0	018.8519	0141.4	042.4	330.2	010.9850	0647.2	108.1	52.84	
119.0	017.9351	0143.5	042.3	329.8	011.1045	0647.6	107.8	52.97	
120.0	017.0412	0145.7	042.2	329.4	011.3099	0648.1	107.6	53.11	
121.0	016.3474	0147.9	042.1	329.0	011.5075	0648.5	107.3	53.27	
122.0	015.6681	0150.1	042.0	328.7	011.7118	0648.8	107.1	53.42	
123.0	015.0031	0152.4	041.9	328.3	011.9193	0649.1	106.8	53.57	
124.0	014.3526	0154.4	041.8	327.9	012.1344	0649.3	106.6	53.70	
125.0	013.7165	0155.9	041.6	327.5	012.3631	0649.3	106.5	53.80	
126.0	013.0948	0156.9	041.3	327.1	012.5996	0649.3	106.5	53.89	
127.0	012.4876	0157.5	041.0	326.7	012.8431	0649.2	106.6	53.95	
128.0	011.8947	0157.5	040.6	326.2	013.0950	0649.2	106.8	53.99	
129.0	011.3163	0156.2	040.0	325.8	013.3581	0649.2	107.1	53.99	
130.0	010.7523	0153.8	039.3	325.3	013.6291	0649.3	107.6	53.95	
131.0	010.3506	0150.9	038.6	324.9	013.8898	0649.4	108.1	53.90	
132.0	009.9565	0148.3	038.0	324.5	014.1416	0649.5	108.5	53.86	
133.0	009.5701	0146.7	037.5	324.1	014.3818	0649.7	108.9	53.84	
134.0	009.1914	0145.4	037.0	323.7	014.6150	0649.7	109.2	53.81	
135.0	008.8203	0144.2	036.5	323.4	014.8437	0649.6	109.6	53.77	
136.0	008.4568	0143.6	036.1	323.0	015.0652	0649.6	109.9	53.75	
137.0	008.1010	0144.0	035.8	322.7	015.2794	0649.5	110.2	53.75	
138.0	007.7528	0145.1	035.6	322.3	015.4898	0649.4	110.4	53.76	
139.0	007.4123	0146.4	035.4	322.0	015.6981	0649.4	110.5	53.77	
140.0	007.0795	0147.6	035.2	321.7	015.9050	0649.5	110.7	53.77	
141.0	006.9678	0148.1	035.1	321.4	016.1101	0649.6	110.8	53.81	
142.0	006.8570	0147.6	034.9	321.1	016.3142	0649.9	111.0	53.81	
143.0	006.7470	0146.4	034.6	320.8	016.5151	0650.3	111.3	53.79	
144.0	006.6380	0144.9	034.3	320.5	016.7118	0650.7	111.6	53.75	
145.0	006.5299	0143.8	034.1	320.2	016.9062	0651.1	111.9	53.73	
146.0	006.4226	0143.4	033.9	319.9	017.1177	0651.6	112.2	53.72	
147.0	006.3163	0143.3	033.7	319.6	017.3502	0652.2	112.4	53.73	
148.0	006.2108	0142.6	033.5	319.3	017.5761	0652.7	112.7	53.71	
149.0	006.1062	0141.4	033.2	319.0	017.7942	0653.2	113.1	53.66	
150.0	006.0025	0140.4	033.0	318.8	018.0092	0653.7	113.4	53.62	
151.0	006.0025	0140.2	033.0	318.5	018.2413	0654.2	113.6	53.64	
152.0	006.0025	0140.6	033.0	318.2	018.4808	0654.8	113.7	53.68	
153.0	006.0025	0141.1	033.1	317.9	018.7228	0655.4	113.8	53.72	
154.0	006.0025	0141.3	033.1	317.6	018.9599	0655.9	113.9	53.74	
155.0	006.0025	0141.0	033.1	317.4	019.1909	0656.5	114.1	53.75	
156.0	006.0025	0140.8	033.0	317.1	019.4196	0657.0	114.3	53.75	
157.0	006.0025	0140.6	033.0	316.8	019.6499	0657.6	114.5	53.75	
158.0	006.0025	0140.7	033.0	316.6	019.8823	0658.1	114.7	53.75	
159.0	006.0025	0140.7	033.0	316.3	020.1129	0658.6	114.9	53.74	
160.0	006.0025	0140.7	033.0	316.0	020.3416	0659.2	115.2	53.73	
161.0	006.0216	0140.8	033.1	315.8	020.5773	0659.7	115.4	53.73	
162.0	006.0406	0141.3	033.2	315.5	020.8208	0660.1	115.6	53.74	
163.0	006.0598	0142.2	033.3	315.2	021.0714	0660.6	115.7	53.75	
164.0	006.0789	0143.1	033.4	314.9	021.3239	0661.0	115.9	53.76	
165.0	006.0981	0144.0	033.5	314.7	021.5765	0661.3	116.1	53.76	
166.0	006.1173	0145.0	033.7	314.4	021.8340	0661.6	116.3	53.77	
167.0	006.1365	0146.3	033.9	314.1	022.0983	0661.8	116.4	53.77	
168.0	006.1558	0147.6	034.0	313.8	022.3614	0661.9	116.6	53.77	
169.0	006.1751	0148.8	034.2	313.5	022.6221	0661.9	116.8	53.76	
170.0	006.1944	0149.8	034.3	313.2	022.8786	0661.9	117.1	53.74	
171.0	006.5193	0150.0	034.8	312.9	023.2174	0661.8	117.1	53.80	
172.0	006.8526	0150.3	035.2	312.5	023.5640	0661.6	117.2	53.85	
173.0	007.1941	0150.5	035.6	312.2	023.9077	0661.4	117.2	53.88	
174.0	007.5440	0150.9	036.0	311.8	024.2581	0661.2	117.3	53.92	
175.0	007.9021	0151.1	036.5	311.4	024.6037	0660.9	117.5	53.93	
176.0	008.2686	0152.0	036.9	311.0	024.9751	0660.5	117.6	53.96	
177.0	008.6433	0152.2	037.3	310.7	025.3219	0660.1	117.8	53.96	
178.0	009.0264	0152.3	037.7	310.3	025.6596	0659.7	118.0	53.95	
179.0	009.4178	0152.0	038.0	310.0	025.9819	0659.4	118.3	53.91	
180.0	009.8175	0151.8	038.3	309.7	026.0000	0659.0	118.6	53.83	
181.0	010.3325	0151.6	038.7	309.3	026.0000	0658.6	118.9	53.74	
182.0	010.8606	0151.1	039.1	309.0	026.0000	0658.4	119.2	53.64	
183.0	011.4019	0152.3	039.6	308.6	026.0000	0658.2	119.5	53.58	
184.0	011.9564	0153.3	040.1	308.2	026.0000	0658.1	119.8	53.49	
185.0	012.5240	0154.2	040.6	307.8	026.0000	0658.2	120.1	53.40	
186.0	013.1048	0155.0	041.1	307.5	026.0000	0658.4	120.4	53.31	

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
187.0	013.6988	0155.8	041.6	307.1	026.0000	0658.7	120.8	53.20	
188.0	014.3059	0156.7	042.0	306.7	026.0000	0659.2	121.2	53.09	
189.0	014.9262	0157.1	042.4	306.4	026.0000	0659.7	121.7	52.97	
190.0	015.5597	0157.3	042.8	306.1	026.0000	0660.3	122.2	52.83	
191.0	016.3758	0157.9	043.3	305.7	026.0000	0661.1	122.7	52.71	
192.0	017.2129	0158.5	043.8	305.4	026.0000	0661.8	123.2	52.58	
193.0	018.0708	0157.7	044.2	305.1	026.0000	0662.4	123.8	52.42	
194.0	018.9496	0155.8	044.3	304.9	026.0000	0662.8	124.4	52.25	
195.0	019.8492	0154.5	044.6	304.7	026.0000	0663.2	125.1	52.07	
196.0	020.7697	0154.5	045.0	304.4	026.0000	0663.6	125.7	51.91	
197.0	021.7111	0154.9	045.4	304.1	026.0000	0664.0	126.3	51.74	
198.0	022.6733	0154.9	045.8	303.9	026.0000	0664.3	127.0	51.56	
199.0	023.6564	0154.5	046.1	303.6	026.0000	0664.5	127.7	51.37	
200.0	024.6604	0153.9	046.4	303.4	026.0000	0664.7	128.4	51.18	

At no point on the proposed NCE-FM 60 dBu (protected) contour does KEAF (FM) deliver more than 54 dBu (interfering).