Dale Bickel

From: Dale Bickel
Sent: Monday, June 16, 2008 7:09 AM
To: 'fitchpe@comcast.net'
Cc: 'mlipp@wileyrein.com'
Subject: FW: WBAR-FM License application amendment, 6/11/2008

Attachments: WBAR DA req PTA-ant install details Jun 08.doc; WBAR_horizontal-Pattern_Lists-FINAL-JUNE-07[1].pdf

WBAR DA req PTA-ant install de... WBAR_horizontal-Pattern_Lists-...

Mr. Fitch:

I reviewed the attachments you included with your e-mail (also attached to this reply). These amendments show that the measured pattern for the directional antenna will satisfy the conditions on construction permit BMPH-20071106ACS.

Accordingly, program test authority IS GRANTED to permit operation of WBAR-FM in accordance with construction permit BMPH-20061106ACS, at an effective radiated power (ERP) of 1.25 kW.

In addition, please amend license application BLH-20070420ABM to include the attached exhibits and the manufacturer's drawings for correct installation of the antenna on the tower.

This e-mail is being sent in lieu of a letter for the same purpose in order to get program test authority to WBAR-FM more expeditiously. The station should keep a copy of it for their records. In addition, the FCC's CDBS database will be updated to show that program test authority has been granted.

Dale Bickel dale.bickel@fcc.gov 202-418-2706 06/16/2008
Senior Electronics Engineer
Audio Division, FCC

-----Original Message-----
From: fitchpe@comcast.net [mailto:fitchpe@comcast.net]
Sent: Friday, June 13, 2008 11:19 AM
To: Dale Bickel
Subject: Re: WBAR-FM License application amendment, 6/11/2008

13 Jun 08

Good Morning Mr. Bickel,

A little tardy here as we did a long day trip on Wednesday (near 300 miles) where I got both sunburn and an allergic reaction to some bug bites. Wiped out my Thursday (yesterday) but we're back to full speed today.

To reply to your both your emails including the denial of our request for program test authority (amended) for WBAR-FM …

In an attempt to simplify I guess I simplified too much. As mentioned, this WBAR directional antenna (DA) is probably the most vetted antenna I have ever been associated with as it has been reviewed maybe three times and in a somewhat rare circumstance, IIRC we specified in the CP application the very performance specs of the antenna already on site and now installed.

Since we were only moving the antenna down the tower and had previously submitted the data of antenna methodology related I did not resubmit but made a mistake not referring to its former location.

The filing of the amendment was done through the owner's counsel in DC and in a great snafu an earlier exhibit of the antenna's pattern from a previous submission (not the current constants) was either attached there or was brought forward by the CDBS system from the former submission and I didn't notice.

In an attempt to end any more confusion that I've caused and to fully satisfy the requirements, attached to this email is what would be a third and fourth attachment to Exhibit 9 of the most recent submission.

As I am certain we are all very anxious to finish this project in complete compliance, if you would just take a moment to pre-review these that we have it all this time, everyone associated with the project would be most grateful.

A final question of application protocol … we will be amending our amendment with these attachments. Will this be satisfactory ?

FYI .. the portion of the wonderful Rymsa website with all those glorious pictures of their test range has been removed. The sense I get from them is that they are concerned about listing such detail because of the threat of terroism which is a very real concern in Spain ...

In the Rymsa manufacturer's certification letter there is a reference to a BLH-19920623KA. This is the original license file for the present owner of WBAR-FM. Where this came from I don't know. It must be a Spainish thing ...

As always, thank you for your help and patience on this project.

Best, Buc

Charles S. Fitch
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WBAR-FM Request for PROGRAM TEST AUTHORITY

Submitted as Exhibit 9 (attachment) – amend the amended 302 FM

Antenna detail data –

WBAR-FM Construction Permit
(BMPH-20071106ACS)
94.7 MHz ch. 234A
Lake Luzerne, NY
Capital Media Corporation
13 June 2008
C.S. Fitch, P.E.

Antenna Range Testing :

The WBAR directional antenna is essentially a single level of three panels. The creation of the required nulls toward the protected stations, WMAS-FM and WJAN-FM, is created by the simple expedient of offsetting the spacing of two of the three panel antennas reducing signal levels in the azimuths of interest in between.
(See antenna pattern tabulation attachment in Exhibit 9)

The antenna was computer modeled and range checked for equivalence at the RYMSA test range near Madrid, Spain.

Pattern tests use a fixed single plane source (horizontal then vertical) viewed by the FM transmit antenna under test as a receive antenna. Nearin power density tests were also performed. RF test equipment is primarily Rhode & Swartz and Agilent (HP).

Testing was performed full size at 94.7 MHz.

Although large, panel antennas are nearly impervious to the influence from the structure they are mounted on, for these tests a full sized section of tower of near identical dimension was used as the antenna support on the turntable.

The manufacturing and tests of the antenna were conducted under the supervision of the RYMSA director of broadcast products, Enrique de Hoyos Maso'.
(See manufacturer's certification letter at bottom of this attachment.)

RYMSA corporate profile from their web site :

RYMSA (Radiación y Microondas S.A.) is a hundred per cent Spanish owned private company with the greatest expertise in the design, project engineering and manufacturing of high quality antenna systems and accessories for the broadcast, telecommunication, space and defense markets.

Since its foundation in 1974, the company has grown in a very outstanding way becoming a world leader in the professional antenna market.

With a staff of more than **300** people today, the premises of the factory in Arganda del Rey (Madrid) span for more than 270,000 square feet.

Installation on the WBAR-FM tower :

The mounting structure for this antenna is a uniform triangular, guyed tower.

A professional surveying firm, Bolster and Associates, located near the Lake Luzerne area and familiar with the geography and magnetic circumstances of the region measured the azimuths of the tower's three guy lines. These magnetic bearings were then converted to true north angles.

From these bearings can also be derived the orientation of the tower faces.

This information was supplied to the antenna manufacturer, RYMSA, and they designed and fabricated the mounts and the detailed installation instructions to assure proper orientation and panel positioning creating the directional pattern requested in the construction permit.

These directions were followed precisely and a local inspection of the final installation by both the engineer and the surveying firm (separate attachments) has established that the antenna has been properly assembled and oriented.

RYMSA

Manufacturers Certification

The directional panel antenna, FCC file number BLH-19920623KA, Call-sign WBAR-FM at Lake Luzerne, NY, US, was fabricated for Capital Media Corporation by RYMSA.

The design, test and measurement of the antenna was performed under my supervision by the technical staff of the firm and the submissions are accurate and correct to the best of my knowledge.

Signed:

Enrique de Hoyos Masó
RYMSA RF Group Director

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi Degrees	Horizontal Polarization Magnitude E/Emax	Vertical Polarization Magnitude E/Emax	SPEC	DESV H	DESV V
0	0.829	0.514	1	-0.171	-0.486
1	0.823	0.526			
2	0.817	0.541			
3	0.811	0.557			
4	0.807	0.575			
5	0.802	0.595			
6	0.798	0.615			
7	0.795	0.637			
8	0.792	0.659			
9	0.789	0.681			
10	0.788	0.704	1	-0.212	-0.296
11	0.786	0.726			
12	0.785	0.749			
13	0.785	0.771			
14	0.785	0.792			
15	0.785	0.813			
16	0.786	0.833			
17	0.787	0.852			
18	0.788	0.869			
19	0.789	0.886			
20	0.791	0.902	1	-0.209	-0.098
21	0.793	0.916			
22	0.794	0.928			
23	0.796	0.940			
24	0.798	0.949			
25	0.800	0.958			
26	0.801	0.965			
27	0.803	0.970			
28	0.804	0.974			
29	0.806	0.976			
30	0.807	0.977	1	-0.193	-0.023
31	0.808	0.976			
32	0.809	0.974			
33	0.810	0.970			
34	0.810	0.965			
35	0.811	0.958			
36	0.812	0.951			
37	0.812	0.942			
38	0.813	0.932			
39	0.814	0.921			
40	0.814	0.909	1	-0.186	-0.091
41	0.815	0.896			
42	0.816	0.882			
43	0.817	0.867			
44	0.818	0.852			
45	0.820	0.836			
46	0.822	0.820			
47	0.824	0.803			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

	Horizontal Polarization	Vertical Polarization			
Phi	Magnitude	Magnitude			
Degrees	E/Emax	E/Emax	SPEC	**DESV H**	**DESV V**
48	0.827	0.786			
49	0.829	0.769			
50	0.832	0.752	1	-0.168	-0.248
51	0.836	0.735			
52	0.840	0.719			
53	0.844	0.702			
54	0.849	0.686			
55	0.854	0.670			
56	0.859	0.655			
57	0.865	0.640			
58	0.871	0.626			
59	0.877	0.613			
60	0.883	0.600	1	-0.117	-0.400
61	0.890	0.581			
62	0.896	0.571			
63	0.903	0.562			
64	0.910	0.554			
65	0.916	0.548			
66	0.923	0.542			
67	0.930	0.538			
68	0.936	0.535			
69	0.942	0.534			
70	0.948	0.529	1	-0.052	-0.471
71	0.954	0.530			
72	0.960	0.533			
73	0.965	0.536			
74	0.969	0.541			
75	0.974	0.547			
76	0.977	0.555			
77	0.981	0.556			
78	0.984	0.565			
79	0.986	0.575			
80	0.988	0.586	1	-0.012	-0.414
81	0.989	0.589			
82	0.990	0.602			
83	0.990	0.615			
84	0.990	0.628			
85	0.989	0.643			
86	0.988	0.657			
87	0.986	0.662			
88	0.983	0.677			
89	0.980	0.692			
90	0.977	0.699	1	-0.023	-0.301
91	0.973	0.714			
92	0.969	0.729			
93	0.964	0.743			
94	0.959	0.757			
95	0.953	0.771			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi	Horizontal Polarization Magnitude	Vertical Polarization Magnitude			
Degrees	E/Emax	E/Emax	SPEC	**DESV H**	**DESV V**
96	0.947	0.784			
97	0.941	0.796			
98	0.934	0.808			
99	0.927	0.819			
100	0.920	0.825	1	-0.080	-0.175
101	0.912	0.835			
102	0.904	0.837			
103	0.895	0.843			
104	0.886	0.849			
105	0.877	0.850			
106	0.868	0.852			
107	0.858	0.853			
108	0.848	0.850	0.98	-0.132	-0.130
109	0.837	0.841			
110	0.826	0.838	0.84	-0.014	-0.002
111	0.815	0.832			
112	0.803	0.826			
113	0.791	0.820			
114	0.779	0.811			
115	0.766	0.801			
116	0.753	0.790			
117	0.739	0.777			
118	0.725	0.763			
119	0.711	0.747			
120	0.697	0.729	0.729	-0.032	0.000
121	0.682	0.715			
122	0.667	0.701			
123	0.651	0.687			
124	0.636	0.672			
125	0.620	0.658			
126	0.605	0.644			
127	0.589	0.629			
128	0.574	0.615			
129	0.559	0.585			
130	0.544	0.555	0.62	-0.076	-0.065
131	0.530	0.524			
132	0.516	0.493			
133	0.503	0.462			
134	0.491	0.431			
135	0.480	0.401			
136	0.471	0.371			
137	0.462	0.343			
138	0.455	0.317			
139	0.450	0.293			
140	0.446	0.273	0.574	-0.128	-0.301
141	0.444	0.257			
142	0.444	0.246			
143	0.445	0.242			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi Degrees	Horizontal Polarization Magnitude E/Emax	Vertical Polarization Magnitude E/Emax	SPEC	DESV H	DESV V
144	0.448	0.243	0.58	-0.132	-0.337
145	0.453	0.251			
146	0.459	0.264			
147	0.466	0.282			
148	0.474	0.303			
149	0.484	0.327			
150	0.494	0.353	0.586	-0.092	-0.233
151	0.505	0.380			
152	0.517	0.408			
153	0.529	0.436			
154	0.541	0.465			
155	0.553	0.494			
156	0.566	0.522			
157	0.578	0.550			
158	0.591	0.578			
159	0.603	0.605			
160	0.615	0.632	0.696	-0.081	-0.064
161	0.626	0.658			
162	0.638	0.683			
163	0.649	0.707			
164	0.659	0.730			
165	0.669	0.753			
166	0.679	0.775			
167	0.689	0.796			
168	0.698	0.816			
169	0.706	0.834			
170	0.715	0.852	0.876	-0.161	-0.024
171	0.723	0.869			
172	0.730	0.885			
173	0.738	0.900	0.983	-0.245	-0.083
174	0.745	0.914			
175	0.752	0.927			
176	0.758	0.938			
177	0.765	0.949			
178	0.771	0.959			
179	0.777	0.967			
180	0.783	0.975	1	-0.217	-0.025
181	0.789	0.982			
182	0.795	0.987			
183	0.801	0.992			
184	0.807	0.995			
185	0.813	0.998			
186	0.819	0.999			
187	0.825	1.000			
188	0.831	1.000			
189	0.837	0.999			
190	0.843	0.997	1	-0.157	-0.003
191	0.849	0.994			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi Degrees	Horizontal Polarization Magnitude E/Emax	Vertical Polarization Magnitude E/Emax	SPEC	**DESV H**	**DESV V**
192	0.856	0.990			
193	0.862	0.986			
194	0.869	0.981			
195	0.875	0.975			
196	0.882	0.969			
197	0.889	0.962			
198	0.896	0.954			
199	0.902	0.946			
200	0.909	0.938	1	-0.091	-0.062
201	0.916	0.929			
202	0.923	0.919			
203	0.929	0.909			
204	0.936	0.899			
205	0.942	0.889			
206	0.949	0.878			
207	0.955	0.866			
208	0.960	0.855			
209	0.966	0.843			
210	0.971	0.830	1	-0.029	-0.170
211	0.976	0.818			
212	0.981	0.805			
213	0.985	0.792			
214	0.988	0.778			
215	0.992	0.764			
216	0.994	0.750			
217	0.997	0.736			
218	0.998	0.721			
219	0.999	0.707			
220	1.000	0.691	1	0.000	-0.309
221	1.000	0.676			
222	0.999	0.660			
223	0.998	0.645			
224	0.997	0.629			
225	0.994	0.613			
226	0.991	0.597			
227	0.988	0.581			
228	0.984	0.566			
229	0.980	0.551			
230	0.975	0.536	1	-0.025	-0.464
231	0.970	0.522			
232	0.965	0.509			
233	0.960	0.496			
234	0.954	0.485			
235	0.948	0.475			
236	0.942	0.467			
237	0.936	0.460			
238	0.931	0.455			
239	0.925	0.453			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi Degrees	Horizontal Polarization Magnitude E/Emax	Vertical Polarization Magnitude E/Emax	SPEC	DESV H	DESV V
240	0.920	0.452	1	-0.080	-0.548
241	0.915	0.453			
242	0.910	0.457			
243	0.906	0.463			
244	0.902	0.470			
245	0.899	0.480			
246	0.896	0.492			
247	0.895	0.504			
248	0.893	0.519			
249	0.893	0.534			
250	0.893	0.551	1	-0.107	-0.449
251	0.893	0.568			
252	0.894	0.586			
253	0.896	0.604			
254	0.898	0.623			
255	0.901	0.641			
256	0.904	0.660			
257	0.908	0.679			
258	0.912	0.697			
259	0.916	0.714			
260	0.920	0.732	1	-0.080	-0.268
261	0.925	0.749			
262	0.929	0.765			
263	0.933	0.780			
264	0.937	0.795			
265	0.941	0.809			
266	0.945	0.822			
267	0.948	0.834			
268	0.951	0.846			
269	0.954	0.857			
270	0.956	0.866	1	-0.044	-0.134
271	0.957	0.875			
272	0.959	0.883			
273	0.959	0.890			
274	0.959	0.896			
275	0.959	0.902			
276	0.958	0.906			
277	0.957	0.910			
278	0.955	0.913			
279	0.952	0.915			
280	0.950	0.917	1	-0.050	-0.083
281	0.946	0.918			
282	0.943	0.918			
283	0.939	0.917			
284	0.935	0.916			
285	0.930	0.915			
286	0.925	0.912			
287	0.921	0.910			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi Degrees	Horizontal Polarization Magnitude E/Emax	Vertical Polarization Magnitude E/Emax	SPEC	DESV H	DESV V
288	0.916	0.906			
289	0.911	0.903			
290	0.906	0.899	1	-0.094	-0.101
291	0.901	0.894			
292	0.897	0.889			
293	0.892	0.884			
294	0.888	0.878			
295	0.884	0.873			
296	0.880	0.867			
297	0.877	0.860			
298	0.874	0.854			
299	0.871	0.847			
300	0.869	0.841	1	-0.131	-0.159
301	0.868	0.834			
302	0.866	0.827			
303	0.865	0.820			
304	0.865	0.814			
305	0.865	0.807			
306	0.865	0.801			
307	0.866	0.794			
308	0.867	0.788			
309	0.869	0.783			
310	0.871	0.777	1	-0.129	-0.223
311	0.873	0.772			
312	0.875	0.767			
313	0.878	0.762			
314	0.881	0.758			
315	0.884	0.754			
316	0.888	0.751			
317	0.892	0.748			
318	0.895	0.745			
319	0.899	0.743			
320	0.903	0.740	1	-0.097	-0.260
321	0.907	0.738			
322	0.911	0.736			
323	0.915	0.734			
324	0.919	0.732			
325	0.922	0.730			
326	0.926	0.728			
327	0.929	0.725			
328	0.932	0.722			
329	0.935	0.719			
330	0.938	0.715	1	-0.062	-0.285
331	0.940	0.711			
332	0.942	0.706			
333	0.943	0.700			
334	0.944	0.694			
335	0.945	0.687			

WBAR FM ANTENNA

Electric Field : Phi Pattern

Theta = 90°

Phi Degrees	Horizontal Polarization Magnitude E/Emax	Vertical Polarization Magnitude E/Emax	SPEC	**DESV H**	**DESV V**
336	0.945	0.679			
337	0.945	0.671			
338	0.944	0.662			
339	0.943	0.652			
340	0.941	0.641	1	-0.059	-0.359
341	0.939	0.630			
342	0.936	0.618			
343	0.933	0.606			
344	0.929	0.593			
345	0.924	0.580			
346	0.920	0.567			
347	0.915	0.555			
348	0.909	0.542			
349	0.903	0.531			
350	0.897	0.520	1	-0.103	-0.480
351	0.890	0.510			
352	0.884	0.502			
353	0.877	0.496			
354	0.870	0.491			
355	0.863	0.489			
356	0.856	0.489			
357	0.849	0.491			
358	0.842	0.496			
359	0.835	0.504			
360	0.829	0.514	1	-0.171	-0.486