

ENGINEERING REPORT
PARTIAL PROOF OF PERFORMANCE
on
WKBK(AM) – Keene, NH

In Response to
FM Translator Construction Permits

BPFT-20080404AAV
BPFT-20080404AAU

Saga Communications of New England, Llc.

May, 2008

COPYRIGHT 2008

TABLE OF CONTENTS

1. Table of Contents

2. Certification of Engineer

3. Discussion of Report

4. Exhibit 1.1 -Tabulation of Field Strength Measurements – 216.0° T & 254.5° T

5. Exhibit 1.2 -Tabulation of Field Strength Measurements – 272.0° T & 330.0° T

6. Exhibit 2.1 -Tabulation of Ratios

CERTIFICATION OF ENGINEERS

The firm of Munn-Reese, Inc., Broadcast Engineering Consultants, with offices at 385 Airport Drive, Coldwater, Michigan, has been retained for the purpose of preparing the technical data forming this report.

The data utilized in this report is based on field measurements made by the undersigned, or others under the supervision of the undersigned, on the dates and times indicated in the report.

The report has been prepared by properly trained electronics specialists under the direction of the undersigned whose qualifications are a matter of record before the Federal Communications Commission.

I declare under penalty of perjury that the contents of this report are true and accurate to the best of my knowledge and belief.

May 13, 2008

MUNN-REESE, INC.

By Wayne S. Reese
Wayne S. Reese, President

By Justin W. Asher
Justin W. Asher, Project Engineer

385 Airport Drive, PO Box 220
Coldwater, Michigan 49036

Telephone: 517-278-7339

DISCUSSION

The firm of Munn-Reese, Inc., was retained to prepare this report detailing a Daytime/Nighttime Partial Proof of Performance on AM Radio Station WKBK(AM), Keene, NH for Saga Communications of New England, Llc. WKBK(AM) operates with 5.0 kW daytime and 5.0 kW nighttime into the same two tower directional antenna array. This partial proof was conducted before and after the installation of two FM translator facilities on nearby ASR No. 1244740. Both translator facilities are diplexed into a common three bay circularly polarized FM antenna. Measurements have been made and detuning of the tower and associated FM Translator facilities is not necessary. The data contained herein is being submitted in response to special conditions/restrictions on FM translator construction permits BPFT-20080404AAV and BPFT-20080404AAU. The results show the common WKBK(AM) directional operation remains essentially unchanged by the nearby tower construction.

Field strength measurements on the night pattern were conducted by Mr. Ira Wilner, engineer for Saga Broadcasting of New England, Llc.. Mr. Wilner made his measurements using a Potomac Instruments Field Intensity Meter, Model #FIM-41, S/N 2088. The meter was last calibrated April 25, 2001.

Measurements were taken on the three (3) daytime/nighttime monitor point radials plus one additional adjacent radial, meeting the requirements of 47 C.F.R. §73.154(a) of the FCC Rules. Field strength measurements were taken on the dates and at the times indicated in the respective Tabulations of Field Strength Measurements, shown as **Exhibits(s) 1.1** and **1.2** for day/night operation. The tabulation sheets show the distance from the transmitter site to each point in units of kilometers. The locations and point numbers were derived from topographical maps with the aided use of GPS mapping software. Before and after measurements were taken less than three weeks apart, therefore climatic variances are not believed to be an issue. Mr. Wilner reports considerable difficulty was encountered in locating points on Radial 216.0°T. Mr. Wilner states that due to storm damage and/or budget cuts, a majority of secondary roads within the Pisgah State Park were inaccessible or closed to the public. As a result, points on Radial 216.0°T were extended past the recommended 16 km distance to include the minimum required number of measurements.

Exhibit 2.1 provides a summary of the field intensity measurements made on the common directional array. As seen in the exhibit, all ratios indicate nominal changes before to after with all radials showing a relationship of well less than the required 10%. A good correlation from the average log ratio of each radial was noted with Radial 272.0°T showing the greatest variance of 1.0207 from the average of 1.0400. Again as seen in this exhibit as well as the actual measurements in **Exhibit(s) 1.1** to **1.2**, all ratios are well within the allowable 10% for each individual radial as well as the average of all radials combined. In addition, all Monitor Points were noted to be well within allowable values, both for the before and after measurement programs.

In light of the measurements taken and uniform results obtained, the recent FM Translator tower constructions for BPFT-20080404AAV and BPFT-20080404AAU are believed to have had a negligible effect on the WKBK(AM) daytime and nighttime operations.

Exhibit 1.1

Tabulation of Day/Night Radials 216.0°T & 254.5°T

Call: WKBK			Frequency (kHz): 1290				Power (kW): 5.00				
			Bearing (°T): 216.0								
Point	2008 Partial Before			2008 Partial After			Distance	Distance	Direct	Remarks	Log
#	mV/m	Time	Date	mV/m	Time	Date	km	mi	Ratio		Ratio
1	167.00	11:50	04/25/08	178.00	11:09	05/12/08	1.32	0.82	1.0659	MP	0.0638
2	62.00	12:01	04/25/08	62.00	10:59	05/12/08	2.24	1.39	1.0000		0.0000
3	33.00	12:10	04/25/08	37.00	10:55	05/12/08	2.33	1.45	1.1212		0.1144
4	0.10	14:35	04/25/08	0.11	10:20	05/12/08	20.92	13.00	1.1000		0.0953
5	0.12	14:45	04/25/08	0.14	10:12	05/12/08	23.01	14.30	1.1667		0.1542
6	0.09	14:58	04/25/08	0.11	10:06	05/12/08	23.98	14.90	1.2222		0.2007
7	0.25	9:21	05/01/08	0.22	9:25	05/12/08	25.43	15.80	0.8800		-0.1278
8	0.16	9:10	05/01/08	0.15	9:36	05/12/08	27.68	17.20	0.9375		-0.0645
							Arithmetic Ratio:		1.0617		
							Log Ratio:		1.0560		

Call: WKBK			Frequency (kHz): 1290				Power (kW): 5.00				
			Bearing (°T): 254.5								
Point	2008 Partial Before			2008 Partial After			Distance	Distance	Direct	Remarks	Log
#	mV/m	Time	Date	mV/m	Time	Date	km	mi	Ratio		Ratio
1	32.00	10:58	04/23/08	33.00	10:52	05/09/08	1.69	1.05	1.0313	MP	0.0308
2	5.70	11:19	04/23/08	5.80	11:06	05/09/08	4.06	2.52	1.0175		0.0174
3	1.00	11:32	04/23/08	1.05	11:36	05/09/08	6.76	4.20	1.0500		0.0488
4	0.45	16:25	04/23/08	0.46	12:20	05/09/08	8.50	5.28	1.0222		0.0220
5	0.29	15:54	04/23/08	0.33	12:36	05/09/08	10.81	6.72	1.1207		0.1139
6	0.39	15:44	04/23/08	0.40	12:48	05/09/08	11.89	7.39	1.0256		0.0253
7	0.17	15:16	04/23/08	0.18	13:17	05/09/08	15.38	9.56	1.0588		0.0572
8	0.10	14:57	04/23/08	0.10	13:29	05/09/08	17.38	10.80	1.0526		0.0513
9	0.10	14:30	04/23/08	0.11	13:49	05/09/08	18.35	11.40	1.1000		0.0953
							Arithmetic Ratio:		1.0532		
							Log Ratio:		1.0527		

Exhibit 1.2

Tabulation of Day/Night Radials 272.0°T & 330.0°T

Call: WKBK			Frequency (kHz): 1290				Power (kW): 5.00				
			Bearing (°T): 272.0								
Point #	2008 Partial Before			2008 Partial After			Distance	Distance	Direct	Remarks	Log
	mV/m	Time	Date	mV/m	Time	Date	km	mi	Ratio		Ratio
1	127.00	14:56	04/24/08	120.00	15:51	05/09/08	1.37	0.85	0.9449	MP	-0.0567
2	11.50	15:10	04/24/08	12.10	15:43	05/09/08	3.07	1.91	1.0522		0.0509
3	2.28	16:13	04/24/08	2.50	15:03	05/09/08	6.90	4.29	1.0965		0.0921
4	1.00	16:28	04/24/08	1.00	14:54	05/09/08	8.77	5.45	1.0000		0.0000
5	0.72	16:39	04/24/08	0.74	14:42	05/09/08	9.93	6.17	1.0278		0.0274
6	0.80	16:46	04/24/08	0.82	14:36	05/09/08	11.09	6.89	1.0250		0.0247
7	0.39	16:55	04/24/08	0.40	14:26	05/09/08	13.71	8.52	1.0256		0.0253
8	0.22	17:17	04/24/08	0.22	14:12	05/09/08	17.38	10.80	1.0000		0.0000
							Arithmetic Ratio:		1.0215		
							Log Ratio:		1.0207		

Call: WKBK			Frequency (kHz): 1290				Power (kW): 5.00				
			Bearing (°T): 330.0								
Point #	2008 Partial Before			2008 Partial After			Distance	Distance	Direct	Remarks	Log
	mV/m	Time	Date	mV/m	Time	Date	km	mi	Ratio		Ratio
1	258.00	13:08	04/24/08	259.00	9:56	05/09/08	1.26	0.78	1.0039		0.0039
2	164.00	13:00	04/24/08	165.00	9:51	05/09/08	1.74	1.08	1.0061		0.0061
3	35.00	12:49	04/24/08	42.00	9:42	05/09/08	3.40	2.11	1.2000		0.1823
4	7.20	12:03	04/24/08	7.40	9:15	05/09/08	7.31	4.54	1.0278		0.0274
5	4.70	11:26	04/24/08	4.70	8:59	05/09/08	10.75	6.68	1.0000		0.0000
6	1.28	10:15	04/24/08	1.28	8:44	05/09/08	15.85	9.85	1.0000		0.0000
7	0.95	10:08	04/24/08	1.00	8:38	05/09/08	16.58	10.30	1.0526		0.0513
8	0.88	10:00	04/24/08	0.88	8:32	05/09/08	18.18	11.30	1.0000		0.0000
9	0.50	9:48	04/24/08	0.50	8:24	05/09/08	19.31	12.00	1.0000		0.0000
							Arithmetic Ratio:		1.0323		
							Log Ratio:		1.0306		

Exhibit 2.1 Tabulation of Ratios

Daytime/Nighttime Operation:

Radial	Arithmetic Ratio	Log Ratio
216.0°T	1.0617	1.0560
254.5°T	1.0532	1.0527
272.0°T	1.0215	1.0207
330.0°T	1.0323	1.0306
Average:	1.0422	1.0400

Daytime/Nighttime Monitor Point Values:

Radial	2008 Before Value (mV/m)	2008 After Value (mV/m)	Maximum Allowable Value (mV/m)
216.0°T	167.0	178.0	202.0
254.5°T	32.0	33.0	38.0
272.0°T	127.0	120.0	132.0
330.0°T	non mp	non mp	non mp