

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Saga Communications of New England, LLC.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☐

Station License

☒Direct Measurement of Power & Correction of Coordinates of less than 3 seconds
(actually granted under BZ-20090709AOY but AM Database was never updated.)**1. Facilities authorized in construction permit**

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
WNYT	Not Applicable	1470 kHz	Unlimited	Night 1.0 kW (nomi.) 1.4 kW (input)*	Day 5.0 kW (nomi.) 5.0 kW (input)

2. Station location

*1.4 kW input power referenced to DMOF Filing(s) BZ-940504AA

State New York	City or Town Ithaca
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BZ-20090709AOY & BZ-20130507AGZ

3. Transmitter location

State NY	County Tompkins	City or Town Ithaca	Street address (or other identification) 346 Troy Road
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4. Main studio location

State NY	County Tompkins	City or Town Ithaca	Street address (or other identification) 1751 Hanshaw Road
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5. Remote control point location (specify only if authorized directional antenna)

State NY	County Tompkins	City or Town Ithaca	Street address (or other identification) 1751 Hanshaw Road
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6. Has type-approved stereo generating equipment been installed?

☐

Yes

☒

No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?

☒

Yes

☐

No

☐

Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system 5.29 amperes	RF common point or antenna current (in amperes) without modulation for day system 3.19 amperes
Measured antenna or common point resistance (in ohms) at operating frequency Night 50.0 ohms Day 490 ohms	Measured antenna or common point reactance (in ohms) at operating frequency Night ± 0 ohms Day -J 323.4 ohms

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
N1 (South)	+158.0°		0.420		N/A	
D1 / N2 (South Center)	0.0°		1.000		N/A	
T3 (North Center)	-156.0°		1.010		N/A	
T4 (North)	+35.0°		0.510		N/A	

Manufacturer and type of antenna monitor:

Potomac Instruments AM-19(204)

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9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Four uniform, cross-section, guyed steel towers mounted on concrete base piers and insulators.	N1: 91.4 m N3: 91.4 m D1/N2: 91.4 m N4: 91.4 m	N1: 92.7 m N3: 92.7 m D1/N2: 93.0 m N4: 93.9 m	N1: 93.6 m N3: 93.6 m D1/N2: 93.9 m N4: 94.8 m	Exhibit No.

Excitation



Series



Shunt

N1 (South) : ASR 1048241
D1 / N2 (South Center): ASR 1048242
N3 (North Center) : ASR 1048243
N4 (North) : ASR 1048244

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	42° 23 ' 30 "	West Longitude	76° 28 ' 30 "
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If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.
See Attached

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

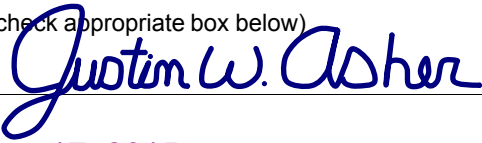
Exhibit No.

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit? This form 302-AM is being filed to notify the addition/modification of eight (8) FM translators to the WNYT(AM) - Ithaca, NY array as authorized in Construction Permit(s) BPFT-20140428ABI (W235BR); BPFT-20140428ABJ (W240CB); BPFT-20140428ABK (W242AB); BMPFT-20140428ABL (W244CZ); BPFT-20130919ADD (W249CD); BPFT-20140428ABM (W254BF); BPFT-20140428ABN (W262AD); and BPFT-20140428ABO (W277BS). Due to the installation/modification of equipment above the base piers and insulators, and as a condition of licensing for the FM Translator facilities, a Nighttime Partial Proof of Performance on WNYT(AM) - Ithaca, NY has been conducted and included here-in. The Form 350 License to Cover Applications for each FM Translator facility will reference this AM Direct Measurement of Power Form 302-AM and Nighttime Partial Proof of Performance Filing.

11. Give reasons for the change in antenna or common point resistance.

The antenna resistance measurement for the daytime operation has been remeasured due to the addition/modification of the FM Translator facilities noted here-in. The new daytime antenna resistance measurement has been supplied on this Form 302-AM filing. The nighttime common point measurement has also been reset and the phasor retuned to the former operation parameters as supplied on this Form 302-AM filing. Daytime and nighttime parameters have also been noted on the WNYT(AM) Partial Proof of Performance showing.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type) Justin W. Asher, Staff Engineer	Signature (check appropriate box below) 
Address (include ZIP Code) Munn-Reese, Inc. PO Box 220, 385 Airport Dr. Coldwater, MI 49036	Date February 17, 2015 Telephone No. (Include Area Code) 1(517)278-7339



Technical Director



Registered Professional Engineer



Chief Operator



Technical Consultant



Other (specify)

ENGINEERING REPORT
PARTIAL PROOF OF PERFORMANCE
on

WNYY(AM) – Ithaca, NY

In Response to the Recent Construction and
Antenna Installation of FM Translator(s)

W235BR - BPFT-20140428ABI
W240CB - BPFT-20140428ABJ
W242AB - BPFT-20140428ABK
W244CZ - BMPFT-20140428ABL
W249CD - BPFT-20130919ADD
W254BF - BPFT-20140428ABM
W262AD - BPFT-20140428ABN
W277BS - BPFT-20140428ABO

February, 2015

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9. Exhibit 3.1 - Vertical Sketch of Antenna Installation

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.

February 11, 2015

By 
Edmond R. Trombley, Staff Engineer
MUNN-REESE, INC.
Broadcast Engineering Consultants
COLDWATER, MI 49036-0220
517-278-7339 (x105)
et@munn-reese.com

DISCUSSION

The firm of Munn-Reese, Inc., was retained to prepare this report detailing a Nighttime Partial Proof of Performance on AM Radio Station WNYW(AM) - Ithaca, NY, facility ID No. 32391. WNYW(AM) operates with 5.0 kW of daytime Non-directional power and 1.0 kW of nighttime power utilizing a four tower directional antenna array¹. This Partial Proof was conducted solely on the nighttime WNYW(AM) directional pattern in response to special condition(s)/restriction(s) on FM Translator Construction Permit(s) W235BR – BPFT-20140428ABI; W240CB – BPFT-20140428ABJ; W242AB – BPFT-20140428ABK; W244CZ – BPFT-20140428ABL; W249CD – BPFT-20130919ADD; W254BF – BPFT-20140428ABM; W262AD – BPFT-20140428ABN; W277BS – BPFT 20140428ABO. All eight (8) Construction Permits have been concurrently constructed and will commence operation simultaneously.

In this instance, the Translators were diplexed or triplexed into one of three individual FM antennas mounted on either Tower 2 or Tower 3 of the WNYW(AM) array. W235BR-W249CD-W254BF were triplexed into a four-bay Scala CL-FM(Slant45) antenna mounted on Tower 3 (ASR #1048243). W240CB-W244CZ-W277BS were triplexed into a one-bay Scala CL-FM(Slant45) antenna mounted on Tower 2 (ASR #1048242). W242AB-W262AD were diplexed into a separate one-bay Scala CL-FM(Slant45) antenna also mounted on Tower 2 (ASR #1048242). The translator feedlines cross the base pier and insulator of each relevant tower via a Kintronics FMC 1.5 AM Isocoupler. In addition to the FM Translator modifications noted above, general maintenance was also conducted on the AM sampling and monitoring system as well. A vertical tower sketch of the antenna installation has been included in **Exhibit 3.1**.

Partial proof measurements were made after the translator antenna installation and compared against the most recent WNYW(AM) full proof of performance, BL-19890216AB. The results indicate the WNYW(AM) nighttime directional operation remains wholly within the nighttime standard pattern as presently authorized.

¹ The applicant would like to note that while the nighttime power is listed at 1.0 kW, WNYW(FM) Direct Measurement of Power filing(s) BZ-940504AA, BZ-20090709AOY and BZ-20130507AGZ have all requested and been authorized with a nighttime input power of 1.4 kW

Field strength measurements on the night pattern were conducted by Mr. Edmond R. Trombley, an engineer in the employ of Munn-Reese, Inc. Mr. Trombley made his measurements using a Potomac Instruments Field Intensity Meter, Model #FIM-41, S/N 844. The meter was last calibrated July 16, 2014.

Measurements were taken on the six (6) nighttime monitor point radials, 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, 1.2 and 1.3** for 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 original WNYX(AM) Proof of Performance BL-19890216AB data. To maintain consistency in the After to Proof comparison, measurements were taken at the known original proof locations with the assistance of current computer mapping and GPS hardware. In some instances, revisited proof points were observed to have slight distance errors as well. The GPS corrected proof distances associated with the actual proof locations have been reflected in this partial proof of performance in an effort to expedite future partial proof filings on WNYX(AM)².

A tabulation of the nighttime operating specifications, as well as the field strength values measured at each of the monitoring points, is found in **Exhibit(s) 2.1**. Direct and Log ratios have been provided between the present measurements and the corresponding 1989 original Directional Proof-of-Performance values. As stated before, the resulting WNYX(AM) nighttime operation remains wholly within the authorized nighttime standard pattern.

In light of the measurements taken and uniform results obtained, the recent FM Translator tower constructions for BPFT-20140428ABI; BPFT-20140428ABJ; BPFT-20140428ABK; BMPFT-20140428ABL; BPFT-20130919ADD; BPFT-20140428ABM; BPFT-20140428ABN; and BPFT-20140428ABO are believed to have had a negligible effect on the WNYX(AM) nighttime operation.

² An error in coordinates of less than three seconds was previously detected in BL-19890216AB and corrected under License Filing BZ-20090709AOW.

EXHIBIT 1.1

TABULATION OF FIELD STRENGTH MEASUREMENTS 50.5° & 84.0° TRUE

Call:	WNYW			Frequency (kHz):	1470	Power (kW):	1.40	
				Bearing (°T):	50.5°			
Point	1988 Night Directional			2015 Night Directional			Distance	Direct
#	mV/m	Time	Date	mV/m	Time	Date	km	Ratio
14	14.20		1988	11.80	1410	2/4/2015	3.38	0.8310
15	8.10		1988	8.50	1415	2/4/2015	4.83	1.0494
16	3.60		1988	4.40	1423	2/4/2015	6.28	1.2222
17	3.10		1988	3.20	1429	2/4/2015	8.11	1.0323
18	0.75		1988	0.80	1455	2/4/2015	11.49	1.0667
19	0.415		1988	0.44	1530	2/4/2015	15.56	1.0602
20	0.489		1988	0.49	1555	2/4/2015	18.75	1.0020
21	0.427		1988	0.45	1620	2/4/2015	22.21	1.0539
							Arithmetic Ratio:	1.0397
							Log Ratio:	1.0347

Call:	WNYW			Frequency (kHz):	1470	Power (kW):	1.40	
				Bearing (°T):	84.0°			
Point	1988 Night Directional			2015 Night Directional			Distance	Direct
#	mV/m	Time	Date	mV/m	Time	Date	km	Ratio
7	10.20		1988	12.00	0845	2/5/2015	2.22	1.1765
9	4.80		1988	5.80	0900	2/5/2015	4.51	1.2083
10	3.58		1988	3.20	0910	2/5/2015	5.39	0.8939
11	3.07		1988	2.60	0915	2/5/2015	6.26	0.8469
12	1.19		1988	1.10	0935	2/5/2015	7.63	0.9244
13	1.19		1988	1.15	0940	2/5/2015	8.80	0.9664
14	0.96		1988	1.00	1000	2/5/2015	10.30	1.0417
15	0.690		1988	0.55	1020	2/5/2015	11.97	0.7971
							Arithmetic Ratio:	0.9819
							Log Ratio:	0.9722

MUNN-REESE, INC.

Broadcast Engineering Consultants
Coldwater, MI 49036

EXHIBIT 1.2

TABULATION OF FIELD STRENGTH MEASUREMENTS 130.0° & 195.0° TRUE

Call:	WNYW			Frequency (kHz): 1470			Power (kW):		1.40
				Bearing (°T): 130.0°					
Point	1988 Night Directional			2015 Night Directional			Distance	Direct	
#	mV/m	Time	Date	mV/m	Time	Date	km	Ratio	Remarks
9	13.70		1988	16.10	1245	2/5/2015	1.80	1.1752	
16	3.13		1988	10.50	1300	2/5/2015	3.88	3.3546	
17	2.28		1988	6.40	1315	2/5/2015	5.13	2.8070	MP
18	0.57		1988	0.59	1326	2/5/2015	7.11	1.0351	
19	0.600		1988	0.55	1335	2/5/2015	8.88	0.9167	
21	0.139		1988	0.12	1430	2/5/2015	13.36	0.8633	
22	0.091		1988	0.09	1442	2/5/2015	15.29	0.9890	
23	0.137		1988	0.11	1510	2/5/2015	17.11	0.8029	
						Arithmetic Ratio:		1.4930	
						Log Ratio:		1.2798	

Call:	WNYW			Frequency (kHz): 1470			Power (kW):		1.40
				Bearing (°T): 195°					
Point	1988 Night Directional			2015 Night Directional			Distance	Direct	
#	mV/m	Time	Date	mV/m	Time	Date	km	Ratio	Remarks
13	3.50		1988	6.80	0910	2/3/2015	3.41	1.9429	MP
14	2.45		1988	3.30	0915	2/3/2015	3.91	1.3469	
15	2.16		1988	3.40	0922	2/3/2015	5.21	1.5741	
16	1.71		1988	1.18	1410	2/3/2015	6.61	0.6901	
18	0.630		1988	1.00	0951	2/3/2015	8.22	1.5873	
21	0.137		1988	0.15	1520	2/3/2015	13.41	1.0949	
22	0.114		1988	0.11	1540	2/3/2015	14.89	0.9649	
23	0.114		1988	0.10	1600	2/3/2015	16.50	0.8772	
						Arithmetic Ratio:	1.2598		
						Log Ratio:	1.1958		

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Coldwater, MI 49036

EXHIBIT 1.3

TABULATION OF FIELD STRENGTH MEASUREMENTS 241.0° & 274.5° TRUE

Call:	WNYW			Frequency (kHz): 1470			Power (kW):		1.40
				Bearing (°T): 241.0°					
Point	1988 Night Directional			2015 Night Directional			Distance	Direct	
#	mV/m	Time	Date	mV/m	Time	Date	km	Ratio	Remarks
17	9.00		1988	5.80	0915	2/6/2015	3.22	0.6444	MP
18	5.00		1988	4.80	0925	2/6/2015	4.44	0.9600	
19	2.80		1988	3.00	0932	2/6/2015	5.34	1.0714	
20	0.57		1988	0.62	0955	2/6/2015	7.27	1.0877	
21	0.91		1988	1.00	1011	2/6/2015	8.16	1.0989	
22	1.140		1988	1.10	1020	2/6/2015	8.72	0.9649	
23	0.630		1988	0.70	1044	2/6/2015	10.73	1.1111	
24	0.600		1988	0.66	1108	2/6/2015	12.12	1.1000	
						Arithmetic Ratio:		1.0048	
						Log Ratio:		0.9916	

Call:	WNYW			Frequency (kHz): 1470			Power (kW):		1.40
				Bearing (°T): 274.5°					
Point	1988 Night Directional			2015 Night Directional			Distance	Direct	
#	mV/m	Time	Date	mV/m	Time	Date	km	Ratio	Remarks
17	10.50		1988	13.00	0930	2/4/2015	3.91	1.2381	MP
18	8.00		1988	8.75	0934	2/4/2015	4.91	1.0938	
19	3.20		1988	3.80	0944	2/4/2015	5.91	1.1875	
20	2.50		1988	3.90	0948	2/4/2015	6.79	1.5600	
22	1.65		1988	2.00	1010	2/4/2015	9.43	1.2121	
23	1.54		1988	1.90	1018	2/4/2015	11.07	1.2338	
24	1.48		1988	1.50	1023	2/4/2015	12.70	1.0135	
25	1.12		1988	1.10	1045	2/4/2015	14.74	0.9821	
						Arithmetic Ratio:	1.1901		
						Log Ratio:	1.1790		

EXHIBIT 2.1**TABULATION OF NIGHTTIME LIMITS AND RADIATIONS**

	1988 DA-N		2015 DA-N	Standard	
Azimuth	Radiation		Radiation	Pattern	Max Allowable
(° True)	(mV/m/km)	Log Ratio	(mV/m/km)	(mV/m/km)	Log Ratio
10.0	618.6			737.29	
<i>50.5</i>	<i>126.3</i>	<i>1.0347</i>	<i>130.7</i>	<i>150.90</i>	<i>1.1948</i>
60.0	118.9			159.89	
<i>84.0</i>	<i>63.7</i>	<i>0.9722</i>	<i>61.9</i>	<i>72.81</i>	<i>1.1430</i>
106.0	132.0			146.23	
<i>130.0</i>	<i>39.1</i>	<i>1.2798</i>	<i>50.0</i>	<i>50.20</i>	<i>1.2839</i>
162.5	171.8			192.41	
<i>195.0</i>	<i>34.6</i>	<i>1.1958</i>	<i>41.4</i>	<i>50.20</i>	<i>1.4509</i>
219.0	136.6			146.23	
<i>241.0</i>	<i>44.6</i>	<i>0.9916</i>	<i>44.2</i>	<i>72.81</i>	<i>1.6325</i>
265.0	114.3			159.89	
<i>274.5</i>	<i>92.2</i>	<i>1.1790</i>	<i>108.7</i>	<i>150.90</i>	<i>1.6367</i>
315.0	693.7			737.29	
342.5	858.5			948.03	
<i>Bold Italic</i> Print indicates a Monitoring Point Azimuth.					

EXHIBIT 2.2 ARRAY OPERATING PARAMETERS

TABULATION OF NIGHTTIME MONITORING POINT DATA

Azimuth (° True)	1988 Night Directional (mV/m)	2013 Night Directional (mV/m)	Licensed Limit (mV/m)
50.5°	14.2	11.80	30.6
84°	4.78	5.8	13.0
130°	2.28	6.4	6.7
195°	3.5	6.8	8.9
241°	9.0	5.8	16.1
247.5°	10.5	13.0	26.4

THEORETICAL NIGHTTIME ANTENNA SYSTEM PARAMETERS

TOWER	FIELD	PHASE	SPACING	ORIENTATION
1 (S)	1.000	155.5°	0.0°	0.0°
2 (SC)	1.960	±0.0°	100.0°	342.5°
3 (NC)	1.590	-157.0°	200.0°	342.5°
4 (N)	0.850	36.0°	300.0°	342.5°
When ratioed to Tower 2, the parameters become:				
1 (S)	0.510	155.5°	0.0°	0.0°
2 (SC)	1.000	±0.0°	100.0°	342.5°
3 (NC)	0.811	-157.0°	200.0°	342.5°
4 (N)	0.434	36.0°	300.0°	342.5°

NEW NIGHTTIME ANTENNA OPERATING PARAMETERS

Tower	Antenna Monitor Indication	Field Ratio	Phase
1 (S)	42.0	0.420	158.0°
2 (SC)	100.0	1.000	±0.0°
3 (NC)	101.0	1.010	-156.0°
4 (N)	51.0	0.510	35.0°

CALCULATION OF NIGHTTIME POWER AND LIMITS

Nighttime Common Point Resistance: 50.0 +j zero ohms

Nighttime Common Point Current: 5.29 amps.

		90%	100%	105%
<u>Power</u>	Nominal		1000.0	
	Operating		1400.0	
	Watts	1260.0	1400.0	1470.0
<u>Resistance</u>	CP Ohms		50.0	
<u>Current</u>	Amps	5.02	5.29	5.42

Exhibit 3.1 - WNYT(AM) - ITHACA, NY

VERTICAL PLAN OF ANTENNA SYSTEM

The site is located on ASR #1048243 of the WNYT(AM) directional array located on Troy Rd., 0.75 mi South of Schoolhouse Rd; the city of Ithaca, Tompkins County, New York.

Site Location (NAD 27)

NL: 42° 23' 30"

WL: 76° 28' 30"

(42-23-30.7NL; 76-28-28.4WL NAD1983)

