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March 16, 2010

Mark Lipp
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mlipp@wileyrein.com

BY HAND DELIVERY

Federal Communications Commission
c/o U.S. Bank – Government Lockbox #979089
SL-MO-C2-GL
1005 Convention Plaza
St. Louis, MO 63101

Re: **Application for AM Broadcast Station License/
Request for Program Test Authority ✓**
Multicultural Radio Broadcasting Licensee, LLC
Station WEXY(AM), Wilton Manors, Florida
Facility Identifier Number 9730
File Number BP-20040109ABM

Dear Ms. Dortch:

Transmitted herewith on behalf of Multicultural Radio Broadcasting Licensee, LLC, the licensee of Station WEXY(AM), are an original and two copies of its application for an AM broadcast station license to cover the construction authorized in construction permit BP-20040109ABM. This Permit authorizes operation on 1520 kHz with 5 kW of power during the day using a non-directional antenna system and 0.8 kW at night using a two-tower directional antenna system. The Technical Summary, prepared by M. Donald Crain, includes all of the technical details and shows that the operating parameters of the nighttime directional antenna pattern were determined in compliance with Section 73.151(c) of the Commission's rules.

If there are any questions about this Application, please contact undersigned counsel for Multicultural Radio Broadcasting Licensee, LLC.

Sincerely,


Mark Lipp

ML/dmk

Enclosure

FOR
FCC
USE
ONLY

FCC 302-AM
APPLICATION FOR AM
BROADCAST STATION LICENSE
(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY

FILE NO. *Bmmk-20100317ABW*

SECTION I- APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)

Multicultural Radio Broadcasting Licensee, LLC

MAILING ADDRESS (Line 1) (Maximum 35 characters)

449 Broadway

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY

New York

STATE OR COUNTRY (if foreign address)

New York

ZIP CODE

10013

TELEPHONE NUMBER (include area code)

212.431.4300

CALL LETTERS

WEXY(AM)

OTHER FCC IDENTIFIER (if applicable)

9730

2. A. Is a fee submitted with this application?

Yes No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

Governmental Entity Noncommercial educational licensee Other (Please explain):

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A)

FEE TYPE CODE		
M	M	R

(B)

FEE MULTIPLE			
0	0	0	1

(C)

FEE DUE FOR FEE TYPE CODE IN COLUMN (A)
\$ 615.00

FOR FCC USE ONLY

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)

M	O	R
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(B)

0	0	0	1
----------	----------	----------	----------

(C)

\$ 705.00

FOR FCC USE ONLY

ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION

\$ 1,320.00

FOR FCC USE ONLY

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Multicultural Radio Broadcasting Licensee, LLC		
MAILING ADDRESS 449 Broadway		
CITY New York	STATE New York	ZIP CODE 10013

2. This application is for:

- Commercial Noncommercial
 AM Directional AM Non-Directional

Call letters WEXY(AM)	Community of License Wilton Manors, FL	Construction Permit File No. BP-20040109ABM	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit 3/22/2010
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3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

Yes No

If No, explain in an Exhibit.

Exhibit No.
A

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

Yes No

If No, state exceptions in an Exhibit.

Exhibit No.
N/A

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

Yes No

If Yes, explain in an Exhibit.

Exhibit No.
N/A

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

Yes No

If No, explain in an Exhibit.

Does not apply

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

Yes No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

Yes No

If Yes, provide particulars as an Exhibit.

Exhibit No.
N/A

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

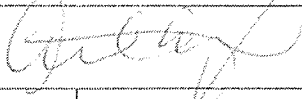
The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

Yes No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name Arthur S. Liu	Signature 	
Title President	Date 3/15/2010	Telephone Number 212.431.4300

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant
Multicultural Radio Broadcasting Licensee, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

- Station License Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign WEXY	File No. of Construction Permit (if applicable) BP-20040109ABM	Frequency (kHz) 1520	Hours of Operation Unlimited	Power in kilowatts	
				Night 0.8	Day 5.0

2. Station location

State Florida	City or Town Wilton Manors
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3. Transmitter location

State Florida	County Broward	City or Town Oakland Park	Street address (or other identification) 945 NW 38th Street
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4. Main studio location

State Florida	County Broward	City or Town Wilton Manors	Street address (or other identification) 412 W Oakland Park Blvd
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5. Remote control point location (specify only if authorized directional antenna)

State Florida	County Broward	City or Town Wilton Manors	Street address (or other identification) 412 W Oakland Park Blvd
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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. Section 5

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system 4.16	RF common point or antenna current (in amperes) without modulation for day system 10.0
Measured antenna or common point resistance (in ohms) at operating frequency Night 50 Day 50	Measured antenna or common point reactance (in ohms) at operating frequency Night -j3.0 Day -j3.0

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
1	0		100.0			
2	+106.6		98.5			

Manufacturer and type of antenna monitor: Potomac Instruments AM-19D

SECTION III - Page 2

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.
Self supporting tower	47.6	48.5	48.5	Exhibit No.

Excitation Series Shunt

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

North Latitude	26 ° 10 ' 26.0 "	West Longitude	80 ° 09 ' 27.0 "
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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.

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

Exhibit No.

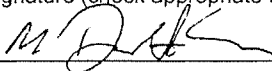
10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

none

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

Non-directional power determination at phasor common point meter

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) M Donald Crain	Signature (check appropriate box below) 
Address (include ZIP Code) 5 Green Acres Drive Boiling Springs, SC 29316	Date March 10, 2010
	Telephone No. (Include Area Code) (864) 599 1819

- Technical Director
- Chief Operator
- Other (specify)
- Registered Professional Engineer
- Technical Consultant

Exhibit A

Multicultural Radio Broadcasting Licensee, LLC, is requesting program test authority. This license application covers the WEXY(AM) construction permit which authorizes operation from the existing transmitter location with 5 kW of power during the day using a non-directional antenna system and 0.8 kW of power at night using a directional antenna system. As a result, WEXY is not eligible for automatic program test authority.

**MULTICULTURAL RADIO BROADCASTING LICENSEE, LLC
RADIO STATION WEXY
1520 KHZ 5 KW-D 0.8 KW-N U DA-N
WILTON MANORS, FL**

**APPLICATION FOR LICENSE
MARCH 10, 2010**

**M DONALD CRAIN
TECHNICAL CONSULTANT
5 GREEN ACRES DRIVE
BOILING SPRINGS, SC 29316**

**MULTICULTURAL RADIO BROADCASTING LICENSEE, LLC
RADIO STATION WEXY
1520 KHZ 5 KW-D 0.8 KW-N U DA-N
WILTON MANORS, FL**

APPLICATION FOR LICENSE

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- 4. Method of Moments Model Details for Night Directional Antenna**
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- 8. RFR Protection Information**
- 9. Exemption from Post Construction Survey Certification Requirement**
- 10. FCC Form 302-AM Section III**

**RADIO STATION WEXY
WILTON MANORS, FL**

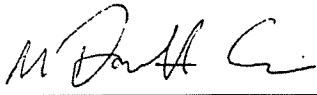
Technical Summary Statement

This technical summary is in support of the WEXY night directional and non-directional day antenna system, as required by the FCC construction permit BP-20040109ABM granted March 22, 2007.

This construction permit authorizes operation at the existing transmitter location with 5 kW day with a non-directional antenna system using the existing north tower, and 0.8 kW night operating with a directional antenna using the existing two towers. No changes were made to the towers or ground system as specified in the existing station license and the application for construction permit. Operation of WEXY as described in this application is in compliance with the terms of the construction permit.

The information provided in this technical summary shows that the operating parameters for the night directional antenna pattern authorized by the construction permit have been determined in compliance with the requirements of section 73.151(c) of the FCC rules. The system is adjusted to antenna monitor parameters within +/- 5 percent in current ratio and +/- 3 degrees in phase of the Method of Moment Model values, as specified in the FCC Rules.

The measurements and calculations contained in this technical summary for Radio Station WEXY were made under my direct supervision. All information contained in this report is true and correct to the best of my knowledge.

 03/10/2010

M. Donald Crain
5 Green Acres Drive
Boiling Springs, SC 29316
Telephone 864 599 1819

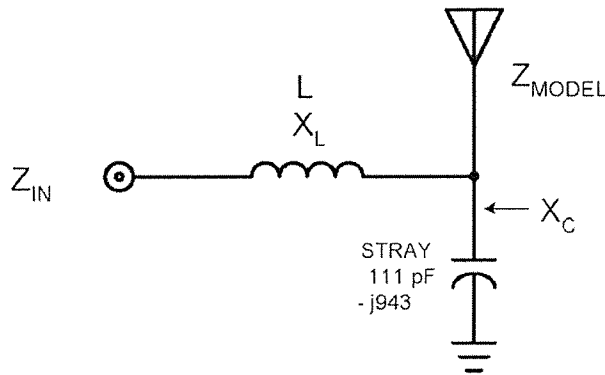
Section 1 - WEXY
Analysis of Measured Tower Impedance Data
for Verification of Method of Moments Model

Tower base self impedance measurements were made at the output J-plugs inside of each Antenna Tuning Unit (ATU) with a HP model 8751A network analyzer system using an external directional coupler and power amplifier. The network analyzer system was calibrated with known standards prior to measurements. The other tower was open circuited at the output J-plug for this measurement.

The output J-plug in each ATU is located beside the toroid sampling transformer of the antenna monitor system at the output of each ATU enclosure. No components are in the circuit from this point to the tower other than static drain chokes which have very high impedance and no impact on the measured tower impedances. Circuit calculations were made to correlate the modeled base impedances (Z_{model}) to the measured ATU output impedances (Z_{in}). The X_c value was used as a load at ground level in the open circuit unused tower for both tower self impedance models.

The measured and modeled base impedances at the ATU output J-plugs with the other tower open circuited at its ATU output J-plug agree within the FCC Rule requirement of +/- 2 ohms and +/- 4 percent for resistance and reactance.

The schematic and table below show assumed values, and the results of the circuit calculations that were used for correlation of the model data to measured data.



TOWER	L(uH)	X_L	X_c	Z_{MODEL}	Z_{IN} (MODEL)	Z_{IN} (MEASURED)
1	3.016	+ j28.8	-j 943	32.7 -j13.2	31.8 +j14.7	31.8 +j14.7
2	1.728	+ j16.5	-j 943	35.7 -j7.6	35.0 +j7.5	35.0 +j7.5

Section 2 - WEXY
Method of Moments Model Details
for Individual Tower Self Impedances

The WEXY array of towers was modeled using Expert MININEC Broadcast Professional Version 12.5. The WEXY towers are identical triangular self supporting structures that taper in side width from the base as the above ground height increases. Each tower was modeled using 10 wire segments, with each wire segment representing the average physical radius at the height of the center of that segment. The wire end points were specified using electrical degrees at 1520 kHz in the Geographic coordinate system with their locations taken from the theoretical directional antenna specifications. The towers are physically 86.8 degrees in electrical height, thereby each segment length is 8.68 degrees. The segment radii are specified in meters.

Each tower model was adjusted individually to provide correlation of the model impedance - when corrected by circuit calculations for the additional stray capacitances and ATU to tower connection series inductances – to the measured ATU output J-plug impedances with the other tower open circuited at its ATU output J-plug. The capacitance of the large base insulator at ground level on each leg (3) is included in the value of stray capacitance used for circuit calculations.

The modeled height of each tower relative to its physical height is within the required 75 to 125 percent range and the modeled radius of each tower is within the required 80 to 150 percent of the circle radius having a circumference equal to the sum of the widths of the tower sides. The towers taper from a face width of 3.2195 meters at the bottom to a face width of 0.3759 meters at the top.

The wire segment model, when checked using the “problem definition evaluation” function, has no errors relative to the MININEC “geometry guidelines.”

The WEXY Table of Tower Physical and Model Dimensions on the following page shows each tower by section height and radius that was used in the model.

The WEXY Tower 1 Self Impedance Method of Moments Model Detail and the WEXY Tower 2 Self Impedance Method of Moments Model Detail on the following pages list the information used in the method of moments model for each tower with the other tower open circuited.

WEXY Table of Tower Physical and Model Dimensions

TOWER SEGMENT	Physical Height (degrees)	Model Height (degrees)	Model Percent of Height	Model Radius (meters)	Percent Equivalent Radius
1-1	8.68	9.386	108.1	1.4233	100
1-2	8.68	9.386	108.1	1.1957	100
1-3	8.68	9.386	108.1	0.9680	100
1-4	8.68	9.386	108.1	0.7403	100
1-5	8.68	9.386	108.1	0.5126	100
1-6	8.68	9.386	108.1	0.3645	100
1-7	8.68	9.386	108.1	0.3112	100
1-8	8.68	9.386	108.1	0.2733	100
1-9	8.68	9.386	108.1	0.2353	100
1-10	8.68	9.386	108.1	0.1974	100
1 - Overall	86.8	93.86	108.1		100

2-1	8.68	9.562	110.2	1.4233	100
2-2	8.68	9.562	110.2	1.1957	100
2-3	8.68	9.562	110.2	0.9680	100
2-4	8.68	9.562	110.2	0.7403	100
2-5	8.68	9.562	110.2	0.5126	100
2-6	8.68	9.562	110.2	0.3645	100
2-7	8.68	9.562	110.2	0.3112	100
2-8	8.68	9.562	110.2	0.2733	100
2-9	8.68	9.562	110.2	0.2353	100
2-10	8.68	9.562	110.2	0.1974	100
2 - Overall	86.8	95.62	110.2		100

WEXY Tower 1 Self Impedance Method of Moments Model Detail

C:\WEXY\WEXY T1 Self 03-09-2010 11:19:12

IMPEDANCE

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
1.52	32.722	-13.169	35.273	338.1	1.7003	-11.722	-.30242

GEOMETRY

Wire coordinates in degrees; other dimensions in meters

Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	1.4233	1
		0	0	9.386		
2	none	0	0	9.386	1.1957	1
		0	0	18.772		
3	none	0	0	18.772	.968	1
		0	0	28.158		
4	none	0	0	28.158	.7403	1
		0	0	37.544		
5	none	0	0	37.544	.5126	1
		0	0	46.93		
6	none	0	0	46.93	.3645	1
		0	0	56.316		
7	none	0	0	56.316	.3112	1
		0	0	65.702		
8	none	0	0	65.702	.2733	1
		0	0	75.088		
9	none	0	0	75.088	.2353	1
		0	0	84.474		
10	2	0	0	84.474	.1974	1
		0	0	93.86		
11	none	80.	340.	0	1.4233	1
		80.	340.	9.562		
12	none	80.	340.	9.562	1.1957	1
		80.	340.	19.124		
13	none	80.	340.	19.124	.968	1
		80.	340.	28.686		
14	none	80.	340.	28.686	.7403	1
		80.	340.	38.248		
15	none	80.	340.	38.248	.5126	1
		80.	340.	47.81		
16	none	80.	340.	47.81	.3645	1
		80.	340.	57.372		
17	none	80.	340.	57.372	.3112	1
		80.	340.	66.934		
18	none	80.	340.	66.934	.2733	1
		80.	340.	76.496		
19	none	80.	340.	76.496	.2353	1
		80.	340.	86.058		
20	2	80.	340.	86.058	.1974	1
		80.	340.	95.62		

Number of wires = 20
current nodes = 20

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	8	9.38599	20	9.75941
radius	10	.1974	1	1.4233

ELECTRICAL DESCRIPTION

Frequencies (MHz)

no.	lowest	step	no. of steps	segment length (wavelengths)	
				minimum	maximum
1	1.52	0	1	.0260722	.0271095

Sources

source	node	sector	magnitude	phase	type
1	1	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	11	0	-943.	0	0	0

WEXY Tower 2 Self Impedance Method of Moments Model Detail

C:\WEXY\WEXY T2 Self 03-09-2010 11:23:59

IMPEDANCE

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
1.52	35.67	-7.6389	36.479	347.9	1.4655	-14.48	-.15764

source = 1; node 11, sector 1

GEOMETRY

Wire coordinates in degrees; other dimensions in meters

Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	1.4233	1
		0	0	9.386		
2	none	0	0	9.386	1.1957	1
		0	0	18.772		
3	none	0	0	18.772	.968	1
		0	0	28.158		
4	none	0	0	28.158	.7403	1
		0	0	37.544		
5	none	0	0	37.544	.5126	1
		0	0	46.93		
6	none	0	0	46.93	.3645	1
		0	0	56.316		
7	none	0	0	56.316	.3112	1
		0	0	65.702		
8	none	0	0	65.702	.2733	1
		0	0	75.088		
9	none	0	0	75.088	.2353	1
		0	0	84.474		
10	2	0	0	84.474	.1974	1
		0	0	93.86		
11	none	80.	340.	0	1.4233	1
		80.	340.	9.562		
12	none	80.	340.	9.562	1.1957	1
		80.	340.	19.124		
13	none	80.	340.	19.124	.968	1
		80.	340.	28.686		
14	none	80.	340.	28.686	.7403	1
		80.	340.	38.248		
15	none	80.	340.	38.248	.5126	1
		80.	340.	47.81		
16	none	80.	340.	47.81	.3645	1
		80.	340.	57.372		
17	none	80.	340.	57.372	.3112	1
		80.	340.	66.934		
18	none	80.	340.	66.934	.2733	1
		80.	340.	76.496		
19	none	80.	340.	76.496	.2353	1
		80.	340.	86.058		
20	2	80.	340.	86.058	.1974	1
		80.	340.	95.62		

Number of wires = 20
current nodes = 20

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	8	9.38599	20	9.75941
radius	10	.1974	1	1.4233

ELECTRICAL DESCRIPTION

Frequencies (MHz)

frequency		no. of		segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1.52	0	1	.0260722	.0271095

Sources

source	node	sector	magnitude	phase	type
1	11	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-943.	0	0	0

Section 3 - WEXY
Computation of Operating Parameters
for Night Directional Antenna

The method of moments model of the WEXY antenna array was used for directional antenna calculations after verification of the model with the open circuit base impedance data. The complex voltage values needed at the sources located at ground level at the base of each tower to produce the current moment sums, when normalized, that are equal to the theoretical field parameters were calculated. The tower currents were then calculated from these voltage sources. The currents which are sampled by the antenna monitor system at the ATU output J-plugs were calculated from the method of moments directional antenna model results using the same values of stray shunt capacitance and series inductance as used in the single tower open circuit calculations. The antenna monitor sampling lines and sampling transformers are electrically identical, and therefore the antenna monitor parameters needed to produce the theoretical antenna parameters can be calculated directly from the modeled ATU output J-plug currents.

TOWER	Model Current Pulse	Model Current Magnitude (amperes)	Model Current Phase (degrees)	Model Drive Impedance (ohms)	Model Drive Power (watts)
1	1	3.74	+9.8	45.6 +j9.4	638
2	11	3.57	+114.4	12.7 -j22.8	162

TOWER	Drive Impedance At Toroid (ohms)	Current Magnitude At Toroid (amperes)	Current Phase At Toroid (degrees)	Antenna Monitor Ratio	Antenna Monitor Phase
1	46.4 +j35.8	3.71	+7.0	100.0	0
2	12.1 -j5.9	3.66	+113.6	98.7	+106.6

Section 4 - WEXY
Method of Moments Model Details
for Night Directional Antenna

The WEXY array of towers was modeled using Expert MININEC Broadcast Professional Version 12.5 using the individual tower characteristic information that was verified by the impedance measurements of each tower with the other tower open circuited at its ATU output J-plug. With this data, calculations were made to derive the complex voltage values for the source located at ground level under each tower of the array to produce the current moment sums, when normalized, that are equal to the theoretical field parameters were calculated.

The WEXY Night Directional Method of Moments Model Detail on the following pages list the information used in the method of moments model for the WEXY Night directional antenna.

TOWER	WIRE	BASE NODE
1	1	1
2	11	11

WEXY Night Directional Method of Moments Model Detail

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MEDIUM WAVE ARRAY SYNTHESIS FROM FIELD RATIOS

Frequency = 1.52 MHz

field ratio		
tower	magnitude	phase (deg)
1	1.	0
2	.84	111.

VOLTAGES AND CURRENTS - rms

source voltage		current		
node	magnitude	phase (deg)	magnitude	phase (deg)
1	174.301	21.5	3.74048	9.8
11	92.9803	53.5	3.56954	114.4

Sum of square of source currents = 53.4656

Total power = 800. watts

TOWER ADMITTANCE MATRIX

admittance	real (mhos)	imaginary (mhos)
Y(1, 1)	.0342533	-.00671652
Y(1, 2)	-.0186861	.0169239
Y(2, 1)	-.0186856	.0169251
Y(2, 2)	.0315562	-.0119408

TOWER IMPEDANCE MATRIX

impedance	real (ohms)	imaginary (ohms)
Z(1, 1)	33.481	-13.1422
Z(1, 2)	19.6962	-18.2865
Z(2, 1)	19.6967	-18.2852
Z(2, 2)	36.4245	-7.60866

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GEOMETRY

Wire coordinates in degrees; other dimensions in meters

Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	1.4233	1
		0	0	9.386		
2	none	0	0	9.386	1.1957	1
		0	0	18.772		
3	none	0	0	18.772	.968	1
		0	0	28.158		
4	none	0	0	28.158	.7403	1
		0	0	37.544		
5	none	0	0	37.544	.5126	1
		0	0	46.93		
6	none	0	0	46.93	.3645	1
		0	0	56.316		
7	none	0	0	56.316	.3112	1
		0	0	65.702		
8	none	0	0	65.702	.2733	1
		0	0	75.088		
9	none	0	0	75.088	.2353	1
		0	0	84.474		
10	2	0	0	84.474	.1974	1
		0	0	93.86		

11	none	80.	340.	0	1.4233	1
		80.	340.	9.562		
12	none	80.	340.	9.562	1.1957	1
		80.	340.	19.124		
13	none	80.	340.	19.124	.968	1
		80.	340.	28.686		
14	none	80.	340.	28.686	.7403	1
		80.	340.	38.248		
15	none	80.	340.	38.248	.5126	1
		80.	340.	47.81		
16	none	80.	340.	47.81	.3645	1
		80.	340.	57.372		
17	none	80.	340.	57.372	.3112	1
		80.	340.	66.934		
18	none	80.	340.	66.934	.2733	1
		80.	340.	76.496		
19	none	80.	340.	76.496	.2353	1
		80.	340.	86.058		
20	2	80.	340.	86.058	.1974	1
		80.	340.	95.62		

Number of wires = 20
current nodes = 20

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	8	9.38599	20	9.75941
radius	10	.1974	1	1.4233

ELECTRICAL DESCRIPTION

Frequencies (MHz)

no.	lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	1.52	0	1	.0260722	.0271095

Sources

source	node	sector	magnitude	phase	type
1	1	1	246.498	21.5	voltage
2	11	1	131.494	53.5	voltage

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IMPEDANCE

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 (dB)	S12 (dB)
source = 1; node 1, sector 1							
1.52	45.634	9.4337	46.599	11.7	1.2426	-19.318	-5.1E-02
source = 2; node 11, sector 1							
1.52	12.689	-22.762	26.06	299.1	4.8025	-3.6709	-2.437

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CURRENT rms

Frequency = 1.52 MHz
Input power = 800. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
1	0	0	0	3.74084	9.8	3.68598	.638338
END	0	0	9.386	3.79543	3.4	3.78882	.223972

2J1	0	0	9.386	3.79543	3.4	3.78882	.223972
END	0	0	18.772	3.67845	1.3	3.67747	.0847261
2J2	0	0	18.772	3.67845	1.3	3.67747	.0847261
END	0	0	28.158	3.45832	359.7	3.45829	-.0165414
2J3	0	0	28.158	3.45832	359.7	3.45829	-.0165414
END	0	0	37.544	3.14977	358.5	3.14874	-.0805276
2J4	0	0	37.544	3.14977	358.5	3.14874	-.0805276
END	0	0	46.93	2.7831	357.6	2.78073	-.115001
2J5	0	0	46.93	2.7831	357.6	2.78073	-.115001
END	0	0	56.316	2.36631	356.9	2.36287	-.127513
2J6	0	0	56.316	2.36631	356.9	2.36287	-.127513
END	0	0	65.702	1.87937	356.3	1.87541	-.121956
2J7	0	0	65.702	1.87937	356.3	1.87541	-.121956
END	0	0	75.088	1.33002	355.7	1.3263	-.0993938
2J8	0	0	75.088	1.33002	355.7	1.3263	-.0993938
END	0	0	84.474	.726549	355.2	.723999	-.0608174
2J9	0	0	84.474	.726549	355.2	.723999	-.0608174
END	0	0	94.0574	0	0	0	0
11	75.1754	27.3616	0	3.56829	114.4	-1.47388	3.24967
END	75.1754	27.3616	9.562	3.31195	112.4	-1.2632	3.06159
2J11	75.1754	27.3616	9.562	3.31195	112.4	-1.2632	3.06159
END	75.1754	27.3616	19.124	3.10473	111.7	-1.14557	2.88566
2J12	75.1754	27.3616	19.124	3.10473	111.7	-1.14557	2.88566
END	75.1754	27.3616	28.686	2.83973	111.	-1.01708	2.65135
2J13	75.1754	27.3616	28.686	2.83973	111.	-1.01708	2.65135
END	75.1754	27.3616	38.248	2.53049	110.4	-.883137	2.37138
2J14	75.1754	27.3616	38.248	2.53049	110.4	-.883137	2.37138
END	75.1754	27.3616	47.81	2.19701	110.	-.749628	2.06517
2J15	75.1754	27.3616	47.81	2.19701	110.	-.749628	2.06517
END	75.1754	27.3616	57.372	1.84044	109.5	-.615231	1.73456
2J16	75.1754	27.3616	57.372	1.84044	109.5	-.615231	1.73456
END	75.1754	27.3616	66.934	1.44171	109.1	-.472307	1.36215
2J17	75.1754	27.3616	66.934	1.44171	109.1	-.472307	1.36215
END	75.1754	27.3616	76.496	1.00703	108.7	-.323328	.953713
2J18	75.1754	27.3616	76.496	1.00703	108.7	-.323328	.953713
END	75.1754	27.3616	86.058	.543065	108.3	-.170871	.515483
2J19	75.1754	27.3616	86.058	.543065	108.3	-.170871	.515483
END	75.1754	27.3616	95.8174	0	0	0	0

Section 5 - WEXY
Sampling System Information and Measurements

The antenna sampling system uses a Potomac Instruments AM-19D monitor connected to Delta TCT-3 toroidal transformers located in the ATU enclosure at the base of each tower. The antenna sampling coaxial lines are Cablewave FCC4-50A. These lines are equal length copper clad 1/2 inch foam dielectric coaxial cable. Connectors for these cables are those recommended by the manufacturer.

Sampling system impedance measurements were made with a HP model 8751A network analyzer system using an external directional coupler and power amplifier. The network analyzer system was calibrated with known standards prior to measurements. Measurements were made from the antenna monitor end of the sampling lines with the lines open circuited and with the toroid sampling transformers connected.

The table immediately below gives detail on the frequencies above and below the carrier frequency where resonance (low resistance and zero reactance) was indicated. These occur at odd multiples of 90 degrees, and the table gives data on the 90 degree and 270 degree resonant frequencies of the lines. The 270 degree frequency is closest to 1520 kHz in terms of ratio. The electrical line lengths at 1520 kHz in the table were calculated by multiplying the ratio of the two frequencies times 270.

TOWER	Sampling Line Open-Circuited Resonance Below 1520 kHz (kHz)	Sampling Line Open-Circuited Resonance Above 1520 kHz (kHz)	Sampling Line Calculated Electrical Length 1520 kHz (Degrees)	1520 kHz Measured Impedance with TCT-3 Connected (Ohms)
1	723.948	2186.500	187.7	50.6 -j0.1
2	725.500	2187.740	187.6	50.3 -j0.1

The WEXY sampling lines meet the FCC Rule requirement that the measured lines be equal in length within one electrical degree.

The characteristic impedance of the WEXY sampling lines was calculated by using the formula:

$$Z_o = \sqrt{(\sqrt{R1^2 + X1^2}) \cdot \sqrt{R2^2 + X2^2}}$$

With R1 + X1 equal to the measured impedance at the +45 degree offset frequency and R2 + X2 equal to the measured impedance at the -45 degree offset frequency.

TOWER	+45 Degree Offset Frequency (kHz)	+45 Degree Measured Impedance (Ohms)	-45 Degree Offset Frequency (kHz)	-45 Degree Measured Impedance (Ohms)	Calculated Characteristic Impedance (Ohms)
1	1822.076	2.9 -j48.1	2550.924	4.5 +j50.1	49.2
2	1823.109	2.9 -j48.1	2552.371	4.6 +j50.0	49.2

The WEXY sampling lines meet the FCC Rule requirement that the measured characteristic impedances of the lines be equal within two ohms.

The Delta TCT-3 toroidal sampling transformers were tested for phase and current response with a Hewlett-Packard 8751A network analyzer in a calibrated measurement system. This was done by passing a common reference signal at 1520 kHz generated by the analyzer through the units placed side by side and feeding the output of each unit into the A and B receivers of the analyzer set up to the measure relative ratio and phase of their output voltages.

TOWER	Delta TCT-3 Ratio	Delta TCT-3 Phase
1	1.000	0.0
2	0.996	+0.100

The WEXY Delta TCT-3 toroidal sampling transformers are within the Delta specified ratings of +/- 2 percent magnitude and +/- 3 degrees.

Section 6 - WEXY
Reference Field Intensity Measurements

Reference field intensity measurements were made on radials at the azimuth bearings with specified radiation limits and on the center azimuth bearing of major lobe radial. Measurements were made at three locations on each radial with a Potomac Instruments Field Intensity Meter of known calibration. The measured field intensity, distance from the antenna, GPS coordinates, and descriptions are included in the table below.

Radial	Point	Distance (km)	Field (mv/m)	Coordinates (NAD 27)		Description
10.5°	1	2.74	20	26-11-21.9	80-09-50.8	On storm drain, south side NW 57 Place in front of # 774
	2	3.79	14.8	26-12-08.9	80-10-10.1	On storm drain at east entrance to 505 NW 65 Ct
	3	4.48	8.4	26-12-31.2	80-10-19.0	Sewer cover in st. near entrance to 2204 Cypress Bend Drive
160°	1	2.86	66	26-08-58.2	80-08-52.6	SW corner NW 3 Ave - 12 Ct at Dead End Sign.
	2	3.85	29	26-08-28.0	80-08-40.2	E. side Andrews on sidewalk at storm drain behind church.
	3	4.74	35	26-08-01.2	80-08-29.5	Progresso Dr. at edge RR Right of way. Just S. of SW 3 Ave.
309.5°	1	2.52	33	26-11-17.2	80-10-30.1	At Mailbox. 5005 NW 26 Ave.
	2	3.02	17.5	26-11-27.5	80-10-52.1	At Mailbox 5219 NW 28 Ave
	3	3.59	17	26-11-39.2	80-11-07.9	At Mailbox 3000 Prospect Rd.
340°	1	1.86	23	26-11-21.9	80-09-50.8	N edge Perimeter Rd. # 1535 opposite gated garage door.
	2	3.41	4.9	26-12-08.9	80-10-10.1	North side of Cypress Creek Rd at 2001 sign
	3	4.14	3.6	26-12-31.2	80-10-19.0	W side NW 21 Ave between McNab and 68 ST opp. Bus stop

Measurements were made March 8, 2010 by George D Butch using Potomac Instruments FIM-41, SN 2113 calibrated March 8, 2007.

Section 7 - WEXY
Direct Measurement of Operating Power

All antenna resistance and reactance measurements, and sampling line electrical length measurements were made with a HP model 8751A network analyzer system using an external directional coupler and power amplifier. The network analyzer system was calibrated with known standards prior to measurements.

The non-directional and directional antenna resistance measurements were made at the phasor cabinet common point J-plug located near the common point current meter for operating power determination. The reactance was adjusted to provide a non-reactive load at the transmitter output connection at 1520 kHz.

Section 8 - WEXY
RFR Protection Information

The operation of WEXY at 5 kW will not result in exposure of workers or the general public to radio frequency radiation in excess of the levels specified in 47 CFR 1.1310.

Fences were installed around all tower bases to comply with the minimum distance of 2 meters as specified in OET bulletin 65 for this frequency, power level, and tower height to prevent electric and magnetic exposure greater than the permissible levels.

These fences limit access by the general public to areas with fields that exceed the requirements of the FCC rules for both directional and non-directional operation. If it becomes necessary for workers to enter the tower base areas for maintenance, the station will either switch to non-directional operation on one of the towers or cease operation to provide RFR safety for the workers.

Section 9 - WEXY
Exemption from Post Construction Survey Certification Requirement

The WEXY antenna site is an existing FCC licensed facility. No changes were made to the towers or ground system as described in the station license. This application for license is for a change of operating power only on both the non-directional day and directional night operation.

WEXY is therefore exempt from the Post Construction Survey Certification Requirement of the FCC rules.

SECTION III - Page 2

9. Description of antenna system (If 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.
Self supporting tower	47.6	48.5	48.5	Exhibit No.

Excitation Series Shunt

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

North Latitude	26 ° 10 ' 26.0 "	West Longitude	80 ° 09 ' 27.0 "
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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.

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

Exhibit No.

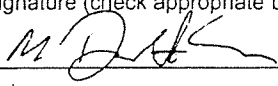
10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

none

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

Non-directional power determination at phasor common point meter

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) M Donald Crain	Signature (check appropriate box below) 
Address (include ZIP Code) 5 Green Acres Drive Boiling Springs, SC 29316	Date March 10, 2010
	Telephone No. (Include Area Code) (864) 599 1819

- Technical Director
- Chief Operator
- Other (specify)
- Registered Professional Engineer
- Technical Consultant