

Exhibit 8 - Statement A
FACILITY COMPLIES WITH §73.1690

prepared for
Citadel Broadcasting Company
WQGN-FM Groton, Connecticut
Facility ID 10455
Ch. 288A 3 kW 85.3 m

Citadel Broadcasting Company (“*Citadel*”) has completed replacement of the WQGN-FM antenna support structure, antenna, and transmission line pursuant to the provisions of §73.1690(b)(1), §73.1690(c)(1), and §73.1690(c)(10) respectively of the Commission’s Rules. Accordingly, the WQGN-FM facility is now operating under automatic program test authority as permitted by §73.1690(c)(1) and §73.1620(a)(1). This statement is provided to demonstrate compliance with the requirements §73.1690.

Background

During routine maintenance of the 1958-vintage WQGN-FM broadcast tower¹ last year, *Citadel* became aware that severe corrosion had rendered the structure unsafe to climb, rendering it beyond repair, and thus unsuitable for continued use. In the effort to expedite the tower’s replacement, *Citadel* considered utilizing FCC Rule §73.1690(b)(1). This rule allows for the replacement of a broadcast tower with that of identical height and coordinates without the prior grant of a Construction Permit.

Prior to construction, a site survey revealed a one-second coordinate discrepancy between the actual and the licensed tower coordinates. §73.1690(c), which specifies station modifications that do not require prior authorization, allows for replacement of an omnidirectional antenna², replacement of transmission line³, and correction of geographic coordinates⁴ under certain circumstances. Informal discussions with FCC staff confirmed that it would be permissible to replace the tower, transmission line, antenna, and to correct the coordinates under a single Application for License. Thus, *Citadel* was able to commence replacement of the problematic structure without delay.

¹ The WQGN-FM structure also supports WSUB(AM)(Groton, Connecticut; Facility ID 10454) and WNLC(FM)(East Lyme, Connecticut; Facility ID 25406).

² See §73.1690(c)(1).

³ See §73.1690(c)(10).

⁴ See §73.1690(c)(11).

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Replacement Tower

Following FAA approval, the new structure was built at the same location⁵ and at the same physical height as its predecessor. In the effort to reduce electrical interaction between the two FM antennas on the replacement tower and further reduce the (already low) radio frequency energy at ground level in the vicinity of the tower, *Citadel* elected to utilize an antenna with half-lambda element spacing as permitted by §73.1690(c)(1). To accommodate this change, slight changes in the WQGN-FM antenna height above ground level (“AGL”) occurred.

Discrepancies

As mentioned earlier, a site survey revealed a one-second latitude discrepancy (when coordinates were rounded to the nearest second) between the WQGN-FM license and that of the old WQGN-FM support structure as shown below.

<u>Licensed Coordinates</u>	<u>Old Tower Surveyed Coordinates</u>
41° 23' 5" North Latitude	41° 23' 6" North Latitude
72° 04' 13" West Longitude	72° 04' 13" West Longitude
<u>(NAD 27 Datum)</u>	<u>(NAD 27 Datum)</u>

Additionally, a discrepancy was noted between the surveyed site ground elevation and that shown in the WQGN-FM license. This, in addition to the aforementioned antenna elevation changes, is summarized below.

<u>Licensed WQGN-FM Antenna Elevations</u>	<u>New WQGN-FM Antenna Elevations</u>
Site Elevation: 55 m	Site Elevation: 57 m
Antenna HAG: 75 m	Antenna HAG: 73 m
Antenna HAMSL: 130 m	Antenna HAMSL: 130 m
HAAT: 84 m	Antenna HAAT: 84 m

Further, inexplicable elevation discrepancies have been found in the Media Bureau CDBS database. On file FCC and *Citadel* records confirm the 75 meter WQGN-FM antenna height above

⁵ The replacement structure is 3.4 meters distant from the licensed structure, at exactly the same geographical coordinates as the old structure (when rounded to the nearest second).

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ground. However, CDBS incorrectly reflects 59 meters. Although this discrepancy was recently brought to the attention of the FCC's staff for correction, we mention it here for the sake of completeness.

Allocation Matters

§73.1690(c)(1) permits coordinate corrections of less than three seconds, provided there is no change in location and no other licensed parameters are changed. Additionally, no new short spacings or increases in existing short spacings are permissible. As shown above, the new WQGN-FM installation has the same coordinates, effective radiated power, antenna height above average terrain, and antenna height above sea level as did the old facility. Thus, there is no change in location or licensed parameters. The following tables show that the coordinate correction will not result in new short spacings and not increase existing short spacings.

LICENSED WQGN-FM							
REFERENCE					DISPLAY DATES		
41 23 05 N		CLASS = A			DATA 06-19-04		
72 04 13 W		Current Spacings			SEARCH 06-25-04		
----- Channel 288 - 105.5 MHz -----							
Call	Channel	Location	Dist	Azi	FCC	Margin	
WHCN	LIC-D 290B	Hartford	CT 67.7	287.3	69.0	-1.3	
WWLI	LIC 286B	Providence	RI 68.5	46.6	69.0	-0.5	
RADD	ADD 288A	Easthampton	MA 115.3	333.9	115.0	0.3	
WDRE.C	CP -N 287A	Calverton-Roanoke	NY 83.2	225.1	72.0	11.2	
WDRE	LIC-N 287A	Calverton-Roanoke	NY 83.2	225.1	72.0	11.2	

NEW WQGN-FM FACILITY							
REFERENCE				DISPLAY DATES			
41 23 06 N		CLASS = A		DATA		06-19-04	
72 04 13 W		Current Spacings		SEARCH		06-25-04	
----- Channel 288 - 105.5 MHz -----							
Call	Channel	Location	Dist	Azi	FCC	Margin	
WHCN	LIC-D 290B	Hartford	CT 67.7	287.3	69.0	-1.3	
WWLI	LIC 286B	Providence	RI 68.5	46.6	69.0	-0.5	
RADD	ADD 288A	Easthampton	MA 115.3	333.9	115.0	0.3	
WDRE.C	CP -N 287A	Calverton-Roanoke	NY 83.2	225.1	72.0	11.2	
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Human Exposure to Radiofrequency Electromagnetic Field

Prior to the onset of construction, calculations were made to determine the appropriate location of the fence surrounding the tower. That study is provided herein as **Attachment 1**.

Coordination with WSUB(AM)

The WQGN-FM support structure also serves as the antenna system for WSUB(AM) (Facility ID 10454, Groton, Connecticut). In order to assure no adverse effect to this co-owned station, and as required by §73.1692, WSUB requested special temporary authorization (BSTA 20040429ABN) to determine operating power by the indirect method. At present, continuing improvements to the WSUB antenna ground system are causing slight changes in antenna impedance. As such, the station is continuing to operate under the STA. Upon completion of the WSUB ground system renovation, antenna impedance measurements required by §73.1692 will be incorporated in a WSUB Application for License. It is anticipated that this information will be ready in a matter of weeks.

Conclusion

Citadel replaced an existing broadcast tower with a new tower of identical height and location (as that of the old structure) which is permitted under §73.1690(b)(1). The location of both the old (now dismantled) and new tower requires one degree of latitude correction from that shown on the WQGN-FM license which is permitted by §73.1690(c)(11). The station ERP, HAAT, and antenna height AMSL remain unchanged. A replacement antenna and transmission line requires commensurate changes in transmitter output power to maintain the licensed ERP as permitted under §73.1690(c)(1) and §73.1690(c)(1). Each of these changes are individually permitted under §73.1690 of the FCC's Rules.

Engineering Statement

prepared for

Citadel Broadcasting Company

WSUB(AM) 980 kHz Facility Id 10454 Groton, CT

WQGN-FM Ch. 288A Facility Id 10455 Groton, CT

Introduction

This engineering statement has been prepared on behalf of *Citadel Broadcasting Company* (“*Citadel*”), licensee of FM radio station WQGN-FM, Channel 288A (105.5 MHz) and standard broadcast station WSUB(AM), 980 kHz, both at Groton, CT. This statement addresses these facilities’ contribution in regard to human exposure to radiofrequency (“RF”) electromagnetic field when utilizing the recently proposed antennas. As described below, it is believed that the WQGN-FM and WSUB(AM) facilities are in compliance with the current provisions of §1.1307(b) of the Federal Communications Commission’s (“FCC”) rules.

Human Exposure to Radiofrequency Radiation

In keeping with §1.1307(b) of the FCC’s Rules, the WQGN-FM and WSUB(AM) operations have been evaluated for human exposure to radiofrequency energy using the procedures outlined in the FCC’s OET Bulletin No. 65 (“OET-65”). OET-65 describes a means of determining whether a facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present FCC policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET-65. Based upon that methodology, and as demonstrated in the following, both the licensed WQGN-FM and WSUB(AM) facilities comply with the cited adopted guidelines.

The common transmitter site utilized by WQGN-FM and WSUB(AM) is also employed by WNLC(FM) (Ch. 254A, 98.7 MHz, East Lyme, CT). According to the respective licenses, and based on information provided by technical representatives of *Citadel*, the WSUB(AM) transmitting antenna system utilizes a folded unipole, skirt-fed (shunt), uniform cross-section, guyed tower that also serves as the antenna support structure for WQGN-FM and WNLC(FM).

The WSUB/WQGN-FM transmitter site is currently undergoing construction to replace the tower structure and both FM stations’ antennas. At the conclusion of the construction, the base of the tower will be enclosed by a fence on all sides which will be no closer than 10 feet (3 meters)

from the base of the tower at its closest point. For the purpose of this study, “public access” to the tower will be considered to be the locked fence surrounding tower base. Calculated levels of human exposure to RF electromagnetic field attributable to WSUB(AM), WQGN-FM , and WNLC(FM) at these locations at ground level are summarized in the following.

WQGN-FM 105.5 MHz - Maximum Contribution at 2 meters Above Ground Level

According to information provided by *Citadel*, the new WQGN-FM transmitting antenna center of radiation will be 73.35 meters above ground level. WQGN-FM is licensed to operate with an effective radiated power (“ERP”) of 3 kilowatts. A circularly polarized, Shively Model 6813, 4-bay, half wavelength spaced antenna is proposed for installation on this tower. Data provided by the antenna manufacturer shows the maximum relative field value in nearby downward directions (between 25 and 90 degrees below the horizontal) does not exceed 0.2. Thus, a value of 20 percent relative field was used for this calculation. The general population/uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for 105.5 MHz is 200 $\mu\text{W}/\text{cm}^2$.

The formula used for calculating FM signal density in this analysis is essentially the same as equation (9) in OET-65.

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

S	=	power density in microwatts/ cm^2
F	=	relative field factor
ERP	=	total (average) ERP in Watts
D	=	distance in meters

Using this formula and the assumptions above, the licensed WQGN-FM facility contributes a power density of 1.575 $\mu\text{W}/\text{cm}^2$ at two meters above ground level (i.e. at “head” height) near antenna support structure, or 0.79 percent of the general population/uncontrolled MPE limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

WNLC(FM) 98.7 MHz - Maximum Contribution at 2 meters Above Ground Level

According to information provided by *Citadel*, the new WNLC(FM) transmitting antenna center of radiation will be 66.64 meters above ground level. WNLC(FM) is licensed to operate with an effective radiated power (“ERP”) of 5.5 kilowatts. A new circularly polarized antenna will be installed on the tower structure. Specifically a Shively Model 6813, 3-bay, half wavelength spaced antenna will be employed. Data provided by the antenna manufacturer shows the maximum relative field value in nearby downward directions (between 35 and 90 degrees below the horizon) does not exceed 0.2. Thus, a value of 20.0 percent relative field was used for this calculation. The general population/uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for 98.7 MHz is $200 \mu\text{W}/\text{cm}^2$.

Using this formula and the assumptions above, the WNLC(FM) facility contributes a power density of $3.52 \mu\text{W}/\text{cm}^2$ at two meters above ground level near antenna support structure, or 1.76 percent of the general population/uncontrolled MPE limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

WSUB(AM) 980 kHz - Contribution to points outside the tower fence

The general population/uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for 980 kHz is 614 mV/m electric field strength and 1.63 A/m magnetic field strength. At the WSUB(AM) frequency, the electrical height of the tower is 0.249 wavelengths (89.7 degrees). WSUB(AM) is licensed to operate with 1 kW non-directionally during the day mode and 0.072 kW in the night mode. The worst-case value of 1 kW will be used for this analysis.

An interpolated result from Figure 2 of OET-65, Supplement A, was used for the analysis herein. The interpolated electric field and magnetic field along with the calculated percentage of the general population / uncontrolled MPE limit (when squared per the technique described in OET-65) is shown in the table below.

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<u>Power</u>	<u>Height</u>	<u>Distance</u>	<u>E Field</u>	<u>Percent</u>	<u>H Field</u>	<u>Percent</u>
(kW)	(deg)	(m)	(V/m)	<u>of MPE</u>	(A/m)	<u>of MPE</u>
1.0	0.249	3.0	22.0	0.13	0.26	2.54

The calculations used to generate the Figures 1-4 of OET-65 employed a series fed radiator. A folded unipole, such as the case at hand, will have slightly different electric and magnetic field characteristics very close to the base of the tower. However, at a distance of 3 meters from the tower base, the magnitude of these fields will approximate the fields generated with a series fed radiator. Therefore, the use of this method is appropriate in this case. If a safety factor of 50% is added to the H field value above, the percent of MPE will only increase to 5.72%.

Consideration of All Facilities

The calculated percentage of the RF electromagnetic field MPE at the closest publicly accessible point near the tower base is summarized in the table below. As shown, considering all three facilities, in no case will the human exposure to RF electromagnetic field exceed the uncontrolled / general population MPE limit specified in §1.1310. No other authorized AM, FM, or television facility is located within 3 km of the WQGN-FM/WSUB(AM) transmitter site.

<u>Facility</u>	<u>Percentage of MPE</u>
WSUB(AM)	2.54% (max)
WQGN-FM	0.79%
WNLC(FM)	<u>1.76%</u>
Total percentage	5.09%

Safety of Workers and the General Public

As demonstrated herein, excessive levels of RF energy attributable to WQGN-FM, WNLC(FM), and WSUB(AM) are not caused at publicly accessible areas at ground level. Consequently, members of the general public will not be exposed to RF levels in excess of the FCC's guidelines. Nevertheless, site access will be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will be posted.

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With respect to worker safety, a site exposure policy will continue to be employed protecting maintenance workers from excessive exposure when work must be performed on or near the antenna structures in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. *Citadel Broadcasting Company* will coordinate exposure procedures with all pertinent stations.

Conclusion

Based on the preceding, it is believed that the continued operation of WSUB(AM) and WQGN-FM is in compliance with §1.1307(b).

Certification

Under the penalty of perjury, the undersigned hereby certifies that the foregoing statement was prepared by him or under his direction and that it is true and correct to the best of his knowledge and belief. Mr. Rhodes holds a Bachelor of Science degree in Electrical Engineering from Virginia Tech, is a registered Professional Engineer in the Commonwealth of Virginia, and is employed as a senior engineer with the firm of Cavell, Mertz & Davis, Inc. He has submitted numerous engineering exhibits to the Federal Communications Commission and his qualifications are a matter of record with that agency.


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