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May 1, 1998

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: Petition for Rule Making seeking
Amendment of Section 73.202(b)
FM Table of Allotments
(Dresden, Tennessee and Glasgow, Kentucky)

Dear Ms. Salas:

Transmitted herewith on behalf of Thunderbolt Broadcasting Company, the licensee of WCDZ(FM), Dresden, Tennessee, is a petition seeking the institution of a rule making proceeding toward the substitution of Channel 236C3 for Channel 236A at Dresden, Tennessee, and the modification of the license of WCDZ(FM), Dresden, Tennessee to specify operation on Channel 236C3; and the substitution of Channel 236C1 for Channel 236C at Glasgow, Kentucky, and the modification of the license of WGGC(FM), Glasgow, Kentucky to properly reflect its operation on Channel 236C1.

Should any questions arise concerning this matter, please contact this office directly.

Sincerely,

John F. Garziglia
Patricia M. Chuh

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 73.202(b)	)	RM No. _____
Table of Allotments	)	
FM Broadcast Stations	)	
(Dresden, Tennessee and	)	
Glasgow, Kentucky)	)	

To: Chief, Allocations Branch

PETITION FOR RULE MAKING

Thunderbolt Broadcasting Company ("Thunderbolt"), the licensee of WCDZ(FM), Dresden, Tennessee ("WCDZ(FM)"), by its attorneys, pursuant to Section 1.401 of the Commission's rules, hereby seeks the institution of a rule making proceeding toward the substitution of Channel 236C3 for Channel 236A at Dresden, Tennessee, and the modification of the license of WCDZ(FM), Dresden, Tennessee to specify operation on Channel 236C3[1/]; and the substitution of Channel 236C1 for Channel 236C at Glasgow, Kentucky, and the modification of the license of WGGC(FM), Glasgow, Kentucky to properly reflect its operation on Channel 236C1[2/]. In support thereof, the following is submitted:

[1/] There is presently on file a one-step application filed by WCDZ(FM) seeking an upgrade of its facilities to Channel 236C3 with a waiver of the Commission's rules (FCC File No. BPH-951120IE). That application has been denied, but a petition for reconsideration is being concurrently filed on the same date that this Petition for Rule Making is being filed ("Petition for Reconsideration"). If the WCDZ(FM) one-step upgrade application is granted, then this Petition for Rule Making will be withdrawn.

[2/] On September 16, 1997, Thunderbolt Broadcasting Company filed pursuant to Section 1.41 of the Commission's

(continued...)

1. It is proposed that the FM Table of Allotments be amended as follows:

Community	Present	Proposed
Dresden, Tennessee	236A	236C3[3/]
Glasgow, Kentucky	236C	236C1

2. Attached as Exhibit No. 4 is an engineering statement showing full spacings for the proposed substitution of Channel 236C3 for Channel 236A at Dresden, Tennessee. This full spacing assumes that WGGC(FM) is properly downgraded to reflect its actual class of operation as Channel 236C1, as described below.

3. **Downgrade of WGGC(FM).** In Exhibit Nos. 1 - 3 attached to this petition, it is conclusively shown that WGGC(FM) is operating at an antenna center height above average terrain ("HAAT") of 295.17 meters (968.4 feet), rather than at or above the minimum Class C HAAT required by the Commission's rules. WGGC(FM)'s HAAT is 4.83 meters below the minimum Class C antenna height specified in Section 73.211(a)(2) of the Commission's rules, and 5.83 meters below WGGC(FM)'s licensed

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[2/](...continued)
rules a request for Commission action to downgrade the facilities of WGGC(FM), Glasgow, Kentucky to reflect its actual height. As of today's date, no Commission action has been taken on that request. See Exhibit No. 1 (November 13, 1997 reply and December 15, 1997 erratum of Thunderbolt Broadcasting Company); Exhibit No. 2 (October 16, 1997 response of WGGC); Exhibit No. 3 (September 16, 1997 request of Thunderbolt Broadcasting Company to downgrade WGGC).

[3/] Channel 236C3 may be allotted at the reference coordinates of 36° 14' 00" North Latitude, 88° 35' 00" West Longitude, a site 12.9 kilometers (8 miles) southeast of the center of Dresden, Tennessee. See Exhibit No. 4.

height in FCC File No. BLH-890725KD. See Exhibit No. 1. Section 73.211(a)(2) of the Commission's rules requires a minimum HAAT for Class C stations of at least 300 meters (984 feet). Even with the 4 meter downward leeway now given for below licensed height antennas in Section 73.1690(c)(1), the WGGC(FM) HAAT is still below the minimum for Class C stations. Thus, WGGC(FM) should be re-classified under the Commission's rules as a Class C1 facility, and the FM Table of Allotments, Section 73.202(b) of the Commission's rules, should be amended to reflect the WGGC(FM) Glasgow, Kentucky allotment as a Class C1 facility on Channel 236C1.

4. **Public Interest Justifications in Favor of WCDZ(FM) Upgrade.** It is well settled that the upgrade of an existing station is in the public interest. Further, an upgrade of WCDZ(FM) would enhance the public interest by allowing WCDZ(FM) to save lives in the event of a disaster. This fact alone demonstrates a compelling public safety interests.

5. WCDZ(FM) has become a "*critical and unique link* in the broadcasting of emergency earthquake information" within the New Madrid Seismic Zone.[4/] Because UT's Dept. of Public

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[4/] See Statement of Paul F. Tinkle (attached as Exhibit No. 5)("Tinkle Statement"); Statement of Ned R. McWherter, Governor of the State of Tennessee from 1987 to 1995, dated April 27, 1998 (attached as Exhibit No. 6); Statement of Nick Dunagan, Chancellor of the University of Tennessee at Martin ("UT"), dated April 29, 1998 (attached as Exhibit No. 7) ("Chancellor Statement"); Statement of Michael A. Gibson, Associate Professor of Geology, and David Loebbaka, Professor of Physics and Dept. Chair, of UT's Dept. of Geology, Geography, and Physics, dated April 22, 1998 (attached as Exhibit No.
(continued...)

Safety will install a special communications system at its facilities and at WCDZ(FM), UT will be able to contact WCDZ(FM) directly through a special link and provide accurate and critical emergency information in the event of a disaster such as a New Madrid Fault earthquake. The installation of a long period seismometer at the UT's Dept. of Geology, Geography, and Physics will allow the detection of more distant earthquake activity. See Dept. of Geology Statement; Chancellor Statement. Once this critical emergency information is relayed to WCDZ(FM), the station would then transmit the information to residents within the New Madrid Seismic Zone and emergency teams such as the Disaster and Emergency Services headquarters in Dresden, Tennessee. Most importantly, UT will **only** communicate with WCDZ(FM), making the station a crucial part of the emergency disaster effort within the New Madrid Seismic Zone. See Dept. of Safety Statement; Chancellor Statement.

6. WCDZ will serve as the **only direct link** to UT's active geology department and its faculty who can provide technical expertise and quickly address any earthquake emergency questions.[5/] The Vice President of the United States

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[4/](...continued)
8)("Dept. of Geology Statement"); Statement of Ted Council, Director of UT's Dept. of Public Safety, dated April 24, 1998 (attached as Exhibit No. 9)("Dept. of Public Safety Statement"); Statement of B.W. Spellings, Director of the Emergency Operations Center (attached as Exhibit No. 10)("Emergency Operations Center Statement").

[5/] See Dept. of Geology Statement; Chancellor Statement. UT's Depmt. of Public Safety is not the only entity who will (continued...)

emphasized the importance of disseminating accurate and crucial disaster information during the recent tornado disasters that struck Alabama and Tennessee.[6/] Thunderbolt's unique ability to serve the public in this manner can save lives in the event of a disaster and thereby constitutes a compelling public interest.

7. Thunderbolt Broadcasting Company hereby states its intention to apply for Channel 236C3 when allotted, and when authorized, to build the upgraded facility promptly.

[5/](...continued)
communicate directly to WCDZ(FM). Because of WCDZ(FM)'s central location in Weakley County and its proximity to the Emergency Operations Center, the Emergency Operations Center will coordinate with WCDZ to disseminate critical emergency information to the public, including information received from UT. See Emergency Operations Center Statement.

[6/] See Tinkle Statement.

WHEREFORE, for the reasons above, a rule making proceeding should be commenced looking toward the substitution of Channel 236C3 for Channel 236A at Dresden, Tennessee, and the modification of the license of WCDZ(FM), Dresden, Tennessee to specify operation on Channel 236C3; and the substitution of Channel 236C1 for Channel 236 at Glasgow, Kentucky, and the modification of the license of WGGC(FM) to properly reflect its operation on Channel 236C1.

Respectfully submitted,

THUNDERBOLT BROADCASTING COMPANY

By: _____
John F. Garziglia
Patricia M. Chuh
Its Attorneys

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May 1, 1998

Exhibit 1

VINCENT A PEPPER
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November 13, 1997

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: Reply to Section 1.41 Request for Commission Action to Downgrade the Facilities of WGGC(FM), Glasgow, Kentucky to Reflect Its Actual Height

Dear Mr. Caton:

Thunderbolt Broadcasting Company hereby replies to the October 16, 1997 letter ("WGGC Letter") of Heritage Communications, Inc. and Skytower Communications, Inc. ["WGGC(FM)"] with respect to the downgrade of WGGC(FM), Glasgow, Kentucky to reflect its actual height.[1/]

WGGC(FM), Glasgow, Kentucky, while licensed to operate on Channel 236C, is operating with facilities below the minimum facility requirements for a Class C station. It is probable that this operation below the minimum has continued since the grant of its most recent license (FCC File No. BLH-890725KD) on April 24, 1990 (Public Notice Report No. 20846, released May 1, 1990).

As conclusively shown in the attached Engineering Statement of Lohnes & Culver, Consulting Radio Engineers, WGGC(FM) is operating at an antenna center height above average terrain of 295.17 meters (968.4 feet). This is 4.83 meters below the minimum Class C antenna height specified in Section 73.211(a)(2) of the Commission's rules, and 5.83 meters below its licensed height in FCC File No. BLH-890725KD. Thus, WGGC(FM) must be classified under the Commission's rules as a Class C1 facility, rather than as a Class C facility. The WGGC(FM) license classification and the FM Table of Allotments, Section 73.202(b) of the Commission's rules, should be immediately changed, retroactive to April 24,

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[1/] This reply was due to be filed yesterday. Due to the November 11, 1997 Veterans Day federal holiday, delivery of the Engineering Statement was delayed. The acceptance of this reply one day late is respectfully requested.

1990, the date upon which the WGGC(FM) license was granted, to reflect WGGC(FM)'s classification as a Class C1 station.

The attached Engineering Statement of Lohnes & Culver, Consulting Radio Engineers, is complete and persuasive in its findings that WGGC(FM) is operating at below minimum Class C FM facilities. Attached to the Engineering Statement is the signed statement of Dennis D. Smith, P.E., P.L.S. (Professional Engineer and Professional Land Surveyor) of DDS Engineering, Bowling Green, Kentucky, confirming his original measurements and providing further measurements. Mr. Smith is an independent licensed surveyor whose expertise and livelihood depend upon the correctness of his work. Unless WGGC(FM) is contending that survey measurements in general are not accurate (a proposition that would cause most real property records in this country to be called into question), Mr. Smith's measurements must be deemed accurate.

In addition to the facts presented by the Engineering Statement, the following should be noted:

WGGC(FM) concedes by its silence in its October 16, 1997 letter that if it is operating beneath 300 meters HAAT, it must be downgraded. No where in the October 16, 1997 WGGC(FM) response does WGGC(FM) take issue with the proposition that if it is operating at more than 4 meters beneath the statutory minimum, it must be downgraded. Therefore, WGGC(FM) appears to have conceded this point and will presumably cooperate with the FCC in correctly classifying its facility.

A station operating outside of its licensed parameters raises a significant public interest question. WGGC(FM)'s construction and operation of its facility at a height above average terrain different than its licensed values contravenes the Commission's scheme of regulation and is antithetical to the orderly functioning of the Commission's processes. WGGC(FM) made an informed choice to attempt to build its facility at a height only one meter above the minimum height established for Class C stations. [WGGC(FM) chose to build its facility at 301 meters height above average terrain, one meter above the minimum of 300 meters height above average terrain established for Class C stations]. WGGC(FM)'s consultant, Paul Dean Ford, states that he was aware that his tower crew located the top antenna bay "at a slightly lower height ... due to strobe lighting at the top of the tower which was not accounted for previously". See Statement of Paul Dean Ford, page 3, attached to the WGGC Letter. With this admission, any sympathy for the position in which WGGC(FM) finds itself should evaporate. It should come as little surprise to WGGC(FM) that WGGC(FM) is operating with an antenna height

above average terrain below licensed values and below the Class C minimum height.

The use of a tape measure is not an accurate method of verifying the height of an existing tower. WGGC(FM) places great reliance upon a measurement of its tower height above ground made by a Tim Harrington with a tape measure on Sunday morning, October 12, 1997. WGGC(FM) does not identify the qualifications of Mr. Harrington to make the measurement. Mr. Harrington's one-page statement is not on letterhead, gives no address or phone number and gives no description of the procedure by which the measurement was made. Mr. Harrington's measurement simply cannot be credited in this proceeding. Attached is an October 21, 1997 letter from World Tower Company, Inc., Mayfield, Kentucky, a tower company of a national reputation, stating that the use of a tape measure is not an accurate method of measuring the height of an existing tower. World Tower Company, Inc. recommends the use of a qualified person with proper instrumentation to survey the tower to obtain accurate information.

WGGC(FM) should be downgraded retroactive to April 24, 1990. Since April 24, 1990, the date that the WGGC(FM) license was granted, WGGC(FM) has been operating at below the Class C minimum height above average terrain. In BC Docket 80-90, the Commission modified its class definitions and specified a minimum transmitting antenna height above average terrain ("HAAT") of 300 meters (984 feet) and a minimum effective radiated power ("ERP") of 100 kilowatts for Class C facilities, among other things. See Modification of FM Broadcast Station Rules to Increase the Availability of Commercial FM Broadcast Assignments, 94 FCC 2d 152 (1983), recon. granted in part, 97 FCC 2d 279 (1984). To provide existing Class C stations operating with less than minimum facilities with an opportunity to meet these requirements, the Commission granted a three year upgrade period within which to upgrade. To avoid reclassification, licensees of Class C stations operating with less than minimum facilities were to submit applications for appropriate minimum facilities by March 1, 1987.

WGGC(FM) currently operates with an effective radiated power of 100 kilowatts at an antenna height above average terrain of 295.17 meters (968.4 feet). WGGC(FM) must be downgraded to a Class C1 station retroactive to the date of licensing, April 24, 1990. See e.g. Crain Broadcasting, Inc., 8 FCC Rcd 4406 (1993) (station downgraded from Class C to Class C1 where FAA and other governmental restrictions and scarcity of land in the area prohibited the station from constructing a tower structure sufficient to meet the Commission's minimum Class C facility requirements). When WGGC(FM) filed its application in FCC File No.

BLH-890725KD, it should have specified an accurate antenna center height above average terrain of 295 meters (rounded from 295.17 meters). Had it done so, the Commission would not have maintained WGGC(FM) as a Class C station. Rather, WGGC(FM) would have been downgraded to Channel 236C1.[2/]

Conclusion. WGGC(FM) is a Class C1 facility and the Commission's records should reflect such. WGGC(FM) itself chose to build its facility at what it thought was 1 meter above the minimum for Class C facilities. That it failed to do so and instead build its facility below the minimum for Class C facilities is of no consequence except for the fact that the FCC's records should correctly reflect the actual parameters of the WGGC(FM) facility which will result in WGGC(FM) being reclassified as a Class C1 station retroactive to April 24, 1990. With WGGC(FM) reclassified as a Class C1 station, the Thunderbolt Broadcasting Company WCDZ(FM) application may then be granted.

Respectfully submitted,

THUNDERBOLT BROADCASTING COMPANY

By: _____
John F. Garziglia
Its Attorney

[2/] As a practical matter, assuming that WGGC(FM) filed its license application in FCC File No. BPH-890725KD specifying the correct height of 295 meters, the Commission would not have granted the application as it specified Class C facilities with an antenna height below the Class C minimum facilities. See Revision of Section 73.3573(a)(1) of the Commission's Rules, 4 FCC Rcd 2413 (1989). Rather, the Commission would have required the submission of a correct application, specifying Class C1 facilities with the antenna height of 295 meters. WGGC(FM) should not benefit from its failure to submit its correct antenna height on its certified license application. Therefore, WGGC(FM) should be downgraded to Channel 236C1 retroactively to April 24, 1990.

WORLD TOWER
COMPANY, INC

P.O. Box 405
2578 State Route 45N
Mayfield, KY 42066
502-247-3642
FAX: 502-247-0909
E-mail: worldtow@ldd.net

10/21/96

Paul Tinkle
Thunderbolt Broadcasting
P.O. Box 318
Martin, TN 38237

Paul,

As per your request, we do not consider using a tape measure an accurate method of verifying the height of the existing tower and antenna center of radiation at Meador, Kentucky. We would, however, recommend using a qualified person with proper instrumentation to survey the tower to obtain accurate information.

If you would like for us to provide you with someone to perform the survey, or if you have any other questions, please let me know.

Thanks!

Doug Walker
President
DW/ts

EXHIBIT E
ENGINEERING STATEMENT RE:
REPLY TO RESPONSE OF WGGC(FM)
IN OPPOSITION TO DOWNGRADE TO CLASS C1
WCDZ(FM) 25.0kW 100M AAT CH.236C3
DRESDEN, TENNESSEE

INDEX

FIGURES

Prepared by
Lohnes and Culver Washington, D.C.
November, 1997

EXHIBIT E
ENGINEERING STATEMENT RE:
REPLY TO RESPONSE OF WGGC(FM)
IN OPPOSITION TO DOWNGRADE TO CLASS C1
WCDZ(FM) 25.0kW 100M AAT CH.236C3
DRESDEN, TENNESSEE

INTRODUCTION

This engineering statement was prepared on behalf of Thunderbolt Broadcasting Company (TBC), licensee of FM Broadcast Station WCDZ(FM) at Dresden, Tennessee. It supplies technical information in further support to the pending application to increase those facilities. Specifically, it forms a reply to the response of Heritage Communications, Inc. (HCI) opposing the TBC proposed downgrade of WGGC from Class C to Class C1.

In its response to the previous TBC FCC filing, revealing the inadequate height of WGGC to achieve minimum Class C facilities, HCI defended its position and technical facility parameters in many respects. It posed a defense of its coordinates, the site elevation and the height of the tower; all of which were not challenged, nor are they germane to the situation at hand. It posed a defense to the germane points of the situation, the TBC method and purpose of determining the precise antenna center height above mean sea level and the height of the average terrain above mean sea level. The background of the antenna height issues will be outlined below with specific HCI responses and replies by TBC as appropriate.

BACKGROUND - WGGC(FM) FACILITIES INVESTIGATION

WGGC(FM) operates with a reported ERP of 100 kW at a reported antenna height of 988 feet (301 meters) Above Average Terrain (AAT) and 1598 feet Above Mean Sea Level (AMSL). Inspection of the average elevation within 3 to 16 kilometers of the WGGC(FM) transmitter site was conducted and reported for TBC using the manual method described in Sections 73.312 and 73.313 of the FCC Rules. To reiterate that process, topographic maps as specified in Section 73.312 were obtained and the topographic data was retrieved from those maps and averaged as described in the methods of Section 73.313. The resulting precise average terrain was found to be and reported as 618.45 feet AMSL, 8.45 feet more than reported to the FCC by HCI.

REPLY TO HCI REGARDING AVERAGE ELEVATION

HCI faults the determination of average terrain by use of the standard manual method by stating that the FCC recognizes many methods by which that data may be determined, including computer generated data. HCI closes its rejection of the manual method by relying on the presumption that the FCC Rules imply that, "No indication is made that an applicant might be subject to review at a later time..." HCI further relies upon the statement of an assumed FCC Policy that, "...the topographic data would be subject to dispute only until a CP was granted by the Commission". Neither the application filed by WGGC, nor the original construction permit are in dispute. TBC is, however, describing the result of that process and the facility that was built.

HCI relied on an application using alternative, but not definitively accurate, elevation data. The physical placement of the antenna is lower on the tower and at variance with the permitted height (See HCI response statement of Paul Dean Ford at page 3). A variety of other typical as built variances, including possibilities such as site grading, may have affected the ultimate antenna height. As a result of all this, while trying to maintain just minimum Class C antenna height, the antenna height as actually built is quite a bit below minimum permissible height.

Section 73.310 of the FCC Rules contains the technical definition and describes the method by which the antenna Height Above Average Terrain (HAAT) is determined. In pertinent part it describes the method of determining the average elevation of the 8 cardinal directions from the antenna site starting from true north.

Section 73.312(d) of the FCC Rules clearly allows, in lieu of detailed topograhic maps, for the use of a computer method, among others, to determine average terrain elevation but with the limiting clause, "except in cases of dispute". The pertinent part of Section 73.312(d) clearly says, "In lieu of maps, the average terrain elevation may be computer generated except in cases of dispute, using elevations from a 30 second, point or better topographic data file." Setting the place for this limiting clause is the directive at the beginning of Section 73.312, defining Topographic data, at subsection (a), stating that, "...the elevation or contour intervals shall be taken from United States Geological Survey Topographic Quadrangle Maps,..."(emphases added). This entire

section of the Rules deals solely with topographic data, with the clear direction that the data extracted from topographic quadrangle maps shall be used, but that upon discretion other data may be used, except in cases of dispute.

HCI next implies, through a laborious discussion of the 10 foot and 20 foot contour intervals on the various topographic maps, that the resolution of the average terrain determined by the manual method can be no better than, "+/- 10 or more feet". They state that, "Some of their data would be +/- 10 feet while other data would be +/- 20 feet." HCI further implies the method used by TBC to calculate the average terrain by stating that, "Additional error would occur from measurement of contour distances from the tower and planimeter accuracy of the area under the curve on the plotted data." HCI is implying that the method detailed in Section 73.313(d) dealing with Prediction of Coverage is used wherein profile elevation graphs are plotted at distance points determined by each contour profile and the average elevation is determined from planimetric measurement of the area under the curve (average) of that graph. The alternative method, described at the end of 73.313(d)(3), is one which provides a more efficient and more accurate determination of average terrain heights, has been the standard method employed by engineering firms for decades and is ignored by HCI. That section states in pertinent part that the average elevation, "...may be obtained by averaging a large number of equally spaced points, or by obtaining the median elevation..." (emphasis added). This method is applied directly to the profile data taken from the topographic maps at uniform distance intervals along each radial. This method

eliminates several intermediate steps and elements of potential error, like the measurement of many distances to succeeding contour intervals, measuring the area under the graph curve or reading the plotted elevation from the curves and determining the average of median values.

HCI objects that the average terrain determination appears to be overly precise by saying, "They have specified elevation to the nearest one-hundredth (0.01) of a foot." This objection appears to be based on the following statements describing the use of topographic maps with finite contour intervals, either 10 feet or 20 feet for the various maps. HCI states that from the calculated elevation, "...of 618 feet +/- 10 or more feet, the originally filed data of 609.7 feet can be considered accurate, even using their data."

The fundamental HCI lack of understanding of arithmetic implied by this objection must be corrected. First, the elevations were not specified to the nearest 0.01 foot, the average elevation was. The map elevation contours are printed every 10 or 20 feet of elevation and frequently labeled with the elevation they represent. The terrain is generally gently rolling without major steps in elevation for each uniform distance out along a radial. Occasional bench mark or road elevations are presented on the maps to the nearest foot of elevation and are used to guide the determination of correct elevations. Uniform distance steps were chosen so as to yield more than 50 elevation sample points along each radial. Interpolation between adjacent elevation contours

was easily implemented and was used to yield a tabulation of elevation values to the nearest whole foot. The mathematical average value of the numerous points, more than 50 for each of eight radials, produces a resulting number to many significant digits. For the number of data points involved, a difference of one foot higher or lower in one point yields a difference in the average of slightly more than 0.002 foot. A total difference of 10 feet, for all points added together, yields 0.02. For the sake of sanity, and knowing that other measurements made of the WGGC tower would be made with approximately the same precision, the results were rounded to two decimal places. This precision of the average elevation is well supported by the volume of topographic data used, the step size of the contours, the interpolation between those contours and the result of averaging many such points.

The average terrain elevation at the WGGC antenna site is 618.45 feet AMSL.

BACKGROUND - TOWER SURVEY

The WGGC(FM) tower was inspected by a registered professional engineer and registered land surveyor in May 1997 to determine various heights of the antenna site, tower structure and FM antenna relative to mean sea level. The height of the antenna structure to the top of the lightning rod, an easily identified point, was determined to be 965.6 feet AGL and 1642.5 feet AMSL. The ends of the antenna system top and bottom points was surveyed at 1633.3 and 1526.8 feet respectively AMSL. The resulting antenna physical center was then calculated to be 1580.05 feet AMSL.

REPLY TO HCI SURVEY OBJECTION

HCI objects to the TBC determination of the length of the antenna as yielding 106.5 feet as opposed to the length presented by HCI of 87.12 feet. The length then presented by TBC was the overall length of the antenna system including top and bottom feed lines, not length between radiating elements. HCI presents no information relating to their physical measurement of the elevation of the center of the antenna. The WGGC antenna is center fed and generally symmetrical about its center. The original TBC measurement of the antenna structure visible from the original survey point, the top and bottom of the feed line, were done to determine this physical center.

HCI objects to the use of an optical triangulation survey of known accuracy in favor of a direct measurement of unknown accuracy. The HCI measurement presented in opposition to the TBC measurement, was made using a tape measure held by a person climbing the tower. HCI offers no supporting information on the accuracy of that method, the manner in which the tape was secured to the tower, the way in which it was moved and realigned with its former position to measure the next span of the tape, the total length of the tape and hence the potential maximum span length and minimum number of such spans measured, whether the measurement was made in daylight or at night, the number of people assisting in the measurement, whether WGGC was shut down and hence whether the top of the tower area was measured, and finally the inherent accuracy of the tape that was used and allowance for factors such as stretch, misalignment, bowing with wind, slippage, etc. The result presented by HCI is not of

the center height of the antenna but rather the height of the top element of the antenna below the tower top.

HCI then presents a statement of the antenna manufacturer in the form of a fax and drawing containing the statement, "Your element spacing was verified on Drawing No. L-50184 to be 116.164" for your CFM HP-10". The copy of the drawing attached to that fax shows elements 5 and 6 of the 10 bay antenna, the two elements at the center feed point of the antenna, with a dimension line labeled 116.164" and the words "element spacing". The full antenna drawing is not offered nor is the original available for inspection. This spacing is curious in that it is not a standard spacing for an FM antenna, neither full wavelength spacing nor one of the several common reduced wavelength spacings. Full wavelength at the WGGC frequency would require a spacing of 124.11 inches or 10.34 feet. The WGGC antenna uses 0.936 wavelength interbay spacing and no explanation is made regarding this unusual spacing.

Attached to this statement as Figure 1, is a copy of a letter report by Dennis D. Smith, P.E., P.L.S. presenting the results of a second survey of the tower. The purpose of this survey, as described in instructions to Mr. Smith, was to confirm and supplement the measurements made in May 1997. None of the specific objections or claims made by HCI were made known to Mr. Smith at that time. As described in his letter the surveyor was denied access to the original survey sites. Choosing alternate sites and reconstructing the entire survey, Mr. Smith reports his findings.

In response to earlier HCI objections, a description of the survey instrument and expected accuracy was requested of Mr. Smith. At the distances involved from the observation point to the tower the inherent instrument and methodology accuracy was reported as plus or minus 0.01 foot. The lack of a precision survey target attached to the tower was expected to reduce the accuracy by an order of magnitude to plus or minus 0.10 foot.

As supplemental information Mr. Smith was asked for the elevation of each of the ten antenna rings of the WGGC antenna. The rings were well visible to the surveyor in this second survey and the survey measurements were made to the viewpoint of the junction of the interbay line and the horizontal element feed lines, "the horizontal 'T' to each ring" as reported by Mr. Smith. Those heights are reported in the letter along with the calculated spacing (height difference) between rings. Those nine interbay dimensions, when expressed to the nearest 1/10 foot, as are the heights, lie between 10.3 and 10.4 feet. The difference in elevation between the upper and lower rings divided by the number of interbay spaces yields 10.34 feet, precisely 1.00 wavelengths at the WGGC frequency.

The resulting center of the antenna, equally spaced between the upper and lower elements, is located at an elevation of 1586.85 feet AMSL. This height, though different from that presented originally still represents the physical vertical center of the antenna, now defined by the actual radiating elements from the second survey point of

view and by definition the radiation center of the antenna. From an average terrain of 618.45 feet AMSL, this radiation center elevation yields an antenna height of 968.4 feet (295.17 meters) AAT. The WGGC antenna is 5.83 meters below its authorized height and 4.83 meters below the minimum Class C antenna height specified in Section 73.211(2) of the FCC Rules. There is no allowance for heights less than 300 meters in that section of the Rules and as a result WGGC must be classified as Class C1 rather than Class C.

Section 73.1690 of the Rules deals with modification of existing facilities; those modifications which are prohibited, those modifications which must be permitted only upon authorization by filing a construction permit application and those modifications which are permitted without advance notification but require filing a license application or informal notification of such modification. At Section 73.1690(c)(1) the Rules have permitted replacement of an existing antenna with another, provided that the resulting antenna radiation center is within 2 meters of that specified in the station authorization. This section has been recently modified to allow for replacement heights of +2 to -4 meters relative to authorized height. The WGGC antenna is not within 2 meters nor is it within 4 meters of the minimum Class C height, let alone the authorized height. This deficiency did not result as a result of the replacement of an antenna but rather the imprecise installation of the original antenna. WGGC does not meet the minimum height requirements of Class C and thus must be classified as C1.

CONCLUSION

WGGC sought to build a facility, by applying under Form 301 for authorization to construct and Form 302 to licensing its facility, to achieve minimum Class C status within the FCC Rules. Class C status requires a minimum height of 300 meters above average terrain and no less. The actions of imprecisely determining average terrain elevation, of installing the antenna lower on the tower than authorized and perhaps other actions, such as grading the transmitter site, all conspired to yield an actual height below Class C minimum. Failing to allow a sufficient buffer height, WGGC is 5.83 meters below its authorized height and 4.83 meters below the statutory minimum Class C height and must be classified as Class C1. There is an allowance for modified facilities to rebuild within a defined distance of authorized height. This allowance is intended only as an expedient to facilitate replacement of an antenna to meet the statutory requirement of not changing the station authorized facilities. Even if WGGC had rebuilt its antenna, it is still beyond this allowance, still below the minimum Class C height and still must be classified as Class C1.

Reclassifying WGGC to Class C1 would have no real impact on WGGC if the changes contemplated by TBC at WCDZ are made as specified in its pending application. WCDZ would specify its present site, still short spaced with another station. The WCDZ Class C3 allocation area would allow processing under Section 73.215 of the Rules. As a 73.215 station, WCDZ need only be protected to its notified service contour and WGGC could return to Class C with full power and at any antenna