

TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
RADIO STATION WZZK-FM
BIRMINGHAM, ALABAMA

JANUARY 11, 2002

CH 284C 100 KW 404 M

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Table of Contents

	Technical Narrative
Figure 1	Proposed Antenna and Supporting Structure
Figure 2	Proposed Transmitter Site Coverage Map
Figure 3	Proposed Transmitter Site Allocation Study
Figure 4	Transmitting Antenna Vertical Plane Patterns and Tabulation

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Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of radio station WZZK-FM assigned to Birmingham, Alabama. WZZK-FM presently is licensed on Channel 284C for an effective radiated power of 100 kilowatts with an antenna height above average terrain of 396 meters.¹ It is proposed to relocate WZZK-FM to a new tower being constructed nearby (0.12 kilometer away) and increase the radiation center height above average terrain to 404 meters.

It is the undersigned's belief, based on a discussion with an FCC Staff Engineer, that WZZK-FM does not need to specify a Class C0 classification even though the proposed antenna height above average terrain is less than 451 meters. This is because the herein application is not part of a Class C0 trigger process and is not requested by the applicant.

¹ See FCC File Number: BLH-19831014AB.

Proposed Transmitter Location

The transmitting facility will be located on a new master FM antenna mounted on a new tower located on Red Mountain in Birmingham, Alabama. The location is uniquely described by the following geographic coordinates:

33° 29' 04" North Latitude
86° 48' 25" West Longitude

A sketch showing the antenna and existing supporting structure is shown on Figure 1.

Interference Concerns

The 115 dBu predicted "blanketing" contour of the proposed station would extend radially 4 kilometers from the transmitting site. The applicant recognizes its responsibility to resolve complaints of interference, including blanketing and receiver-induced interference as required by Sections 73.315(b), 73.316(e) and 73.318.

FCC Predicted Coverage Contours

The predicted coverage contours for the proposed operation were calculated in accordance with the provisions of Section 73.313. Pursuant with current FCC practice, the distances to the contours were calculated without consideration given to terrain roughness correction factors.

The average terrain elevations from 3 to 16 kilometers along eight radials evenly spaced at 45 degree intervals were obtained from a previous co-located WTTO(TV)

application for construction permit. The terrain elevations were then used in combination with the effective radiated power for determining the distances to coverage contours.

Figure 2 is a map showing the predicted coverage contours. As the map illustrates, the FCC predicted 70 dBu contour entirely encompasses the principal community of Birmingham.

Proposed Site Allocation Study

Channel 284C at the proposed site will satisfy the Commission's minimum separation distance requirements, specified in Section 73.207(b) of the Rules, to all assignments as shown in the tabulation provided in Figure 3 except toward the license WSGM(FM) on Channel 284A at Coalmont, Tennessee and the authorized WQSB(FM) on Channel 286C2 at Albertville, Alabama.

Station WSGM(FM) at Coalmont is an "old" 3 kilowatt/100 meter equivalent facility. Therefore, the allocation criteria of Section 73.213(c)(1) are applicable toward WSGM(FM). According to Section 73.213(c)(1), the minimum separation distance between a co-channel Class C station and "old" Class A station, such as WSGM(FM), is 222 kilometers. The actual separation distance between the proposed WZZK-FM and WSGM(FM) is 222.2 kilometers. Therefore, there is no allocation concern toward WSGM(FM).

WZZK-FM is also slightly decreasing the separation distance to WQSB(FM), by 0.02 kilometer. Since the WQSB(FM) decreased separation distance is so minor, it is believed that no Section 73.215 processing from WZZK-FM is required

toward WQSB(FM); furthermore WQSB(FM) is already protecting WZZK-FM via Section 73.215.

Radiofrequency Electromagnetic Field Exposure

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OST Bulletin No. 65, *Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*.² The power density at the base of the tower was calculated using the appropriate procedure contained in Section 2, Supplement A, *Additional Information for Radio and Television Broadcast Stations*, of the Bulletin.

For the calculation, a combined horizontal and vertical polarized effective radiated power of 200 kilowatts is employed with a radiation center of 308 meters above ground level. The master antenna will be a Dielectric TAV-8FMB antenna. As can be seen from Figure 4, the downward relative field value for horizontal depression angles greater than 20° will not exceed 0.2. Therefore, using this downward relative field value of 0.2, it is calculated that the maximum power density at ground level resulting from this facility is less than 0.003 mW/cm². This is less than five percent of the maximum Commission guideline value in an uncontrolled environment for a FM radio station.³

² OET Bulletin 65, Second Edition 97-01, August, 1997.

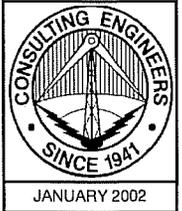
³ The FCC maximum guideline for a FM broadcast station in an uncontrolled environment is 0.2 mW/cm².

When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency electromagnetic will not exceed the FCC guidelines.

Charles A. Cooper

January 11, 2002

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Proposed FM Master Antenna System

Radiation Center
597 m AMSL
(1957 ft AMSL)

625 m AMSL
(2049 ft AMSL)

308 m
(1010 ft)

297 m
(974 ft)

336 m
(1102 ft)

NAD 27
Site Coordinates:

33° 29' 04" N
86° 48' 25" W

289 m AMSL
(947 ft AMSL)

Not to Scale

Tower Reg. No. 1226663

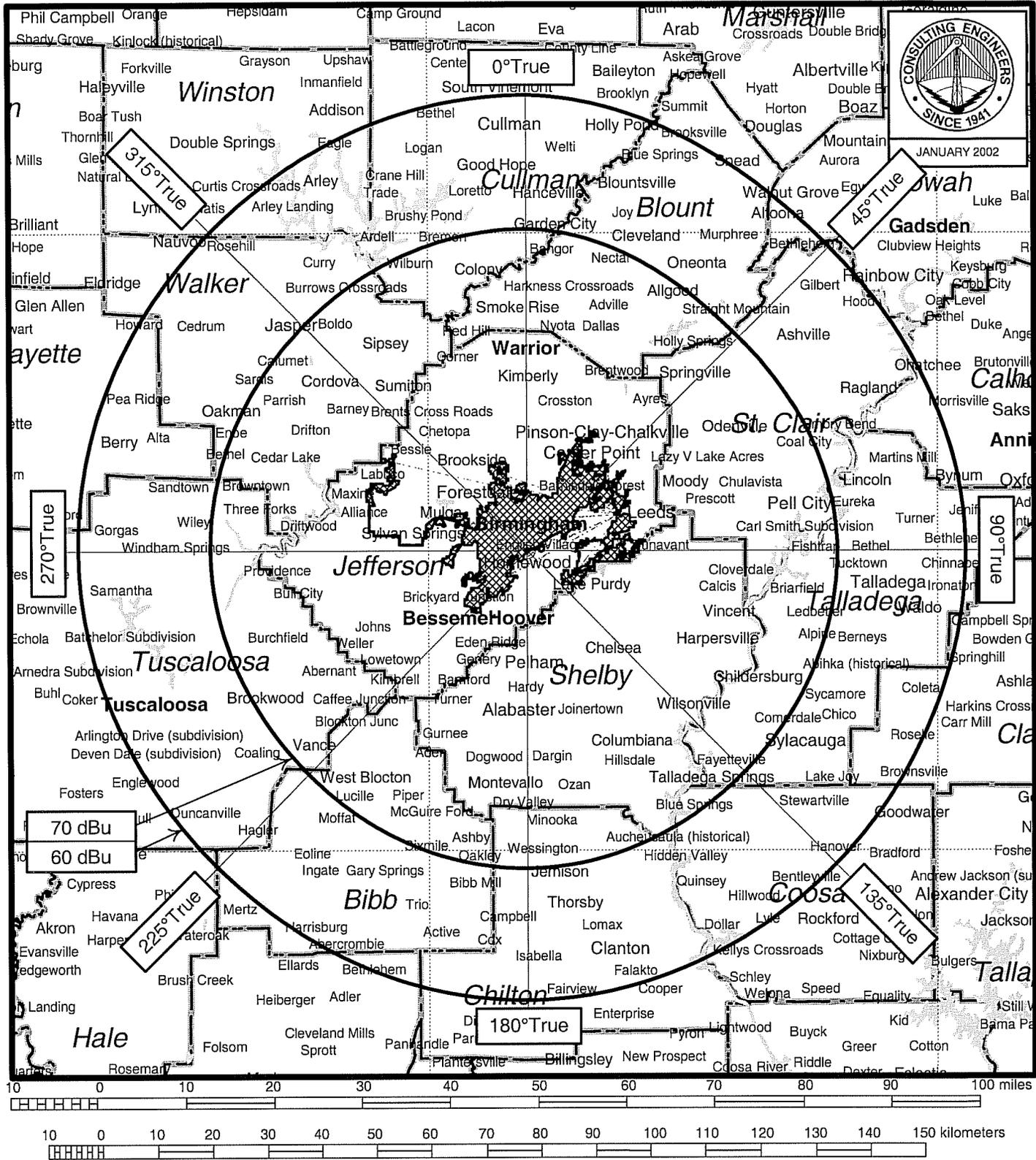
ANTENNA AND SUPPORTING STRUCTURE

RADIO STATION WZZK-FM

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du Treil, Lundin & Rackley, Inc. Sarasota, Florida



FCC PREDICTED COVERAGE CONTOURS

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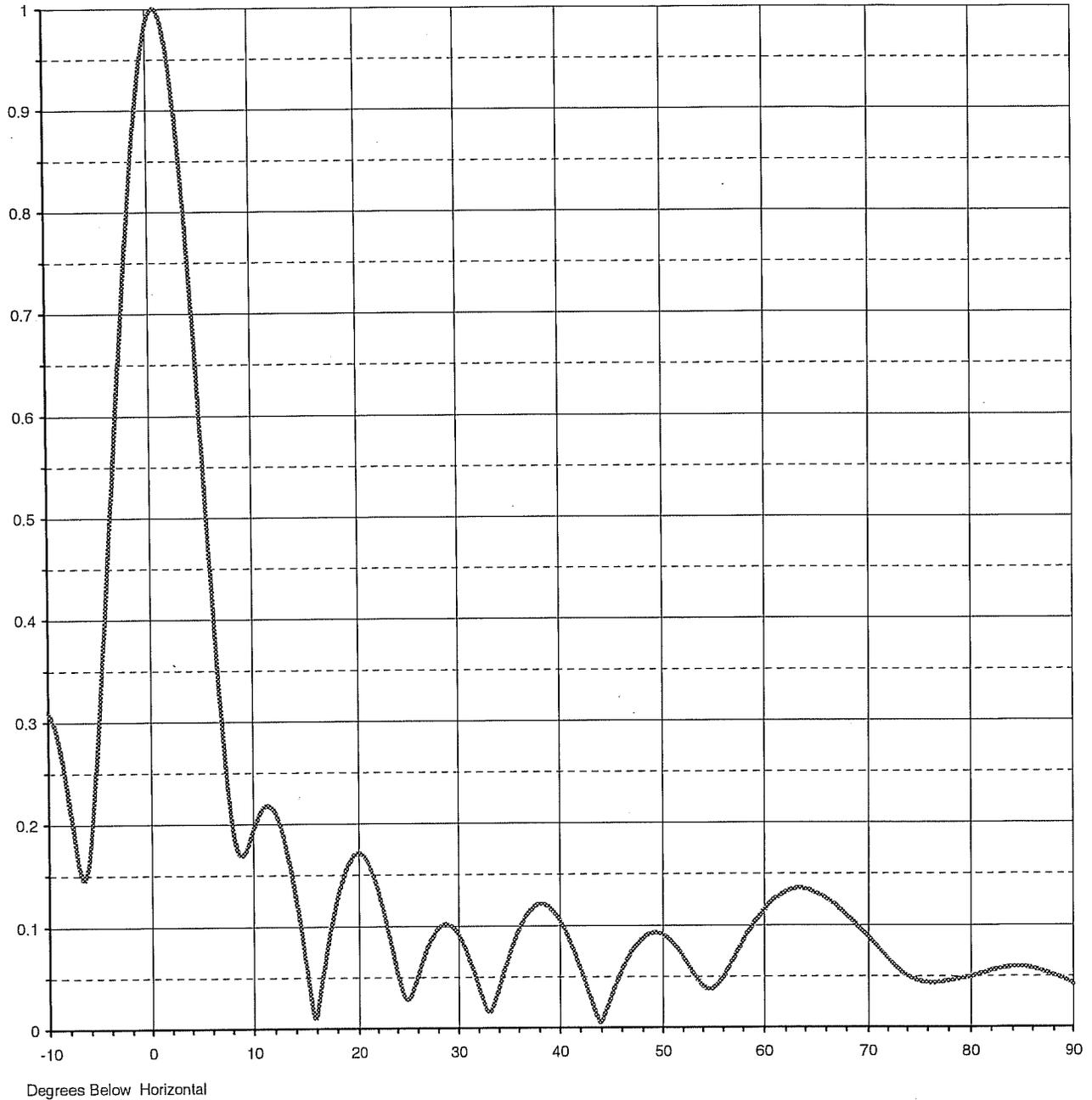
Allocation (Separation) Study

33° 29' 04" North Latitude
 86° 48' 25" West Longitude

Call Id	City St	File Status Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req min
PADD	MOUNDVILLE AL	RM C 10116	282A 104.3			32-58-35 087-46-36		238.2	106.51	95.0
WQZZ 31145	EUTAW AL	BPH APP C 20010402AAI	282 A 104.3	3.700 130	N	32-58-35 087-46-36	N	238.2	106.51	95.0
WQZZ 31145	EUTAW AL	BMLH LIC C 19980806KC	282 A 104.3	4.700 113		32-55-19 087-49-08		236.7	113.11	95.0
961118 84434	STATE COLLE MS	BPH CP C 19961118M7	283 C3 104.5	25.000 100	N	33-24-14 088-55-21	Y	268.0	196.92	176.0
WZZK-F 48724	BIRMINGHAM AL	BLH LIC C 19831014AB	284 C 104.7	100.000 396	N	33-29-02 086-48-21	N	121.0	0.12	
<i>(Applicant's subject station)</i>										
WSGM 14730	COALMONT TN	BLH LIC C 19931201KA	284 A 104.7	1.000 167	Y	35-16-44 085-44-02	N	26.0	222.17	226.0
<i>(WBPT(FM) is decreasing the separation distance to WSGM(FM) at Coalmont, Tennessee by 0.01 kilometer. However, since WSGM(FM) is an "old" Class A station (3 kilowatt/100 meter equivalent), the minimum separation distance is actually 222 kilometers. Therefore, no allocation concern.)</i>										
WFSH-F 56390	ATHENS GA	BLH LIC C 19890707KA	284 C1 104.7	100.000 299	N	33-51-56 083-49-34	N	80.4	279.65	270.0
PADD	PLAINVILLE GA	RM ADD C 10100	285 A 104.9	0.000		34-25-58 085-05-48		55.8	189.88	165.0
WQSB 58945	ALBERTVILLE AL	BPH CP C 20001208ADR	286 C2 105.1	30.000 192	N	34-21-16 086-26-15	Y	19.3	102.37	105.0
<i>(WBPT(FM) is decreasing the separation distance to WQSB(FM) at Albertville, Alabama by only 0.02 kilometer. Therefore, since there is no substantial decrease in the separation distance, no Section 73.215 processing is requested to WQSB(FM).)</i>										
WQSB 58945	ALBERTVILLE AL	BLH LIC C 20010116ADJ	286 C3 105.1	2.700 305	Y	34-09-27 086-02-44	Y	43.0	102.67	96.0

ELEVATION PATTERN

RMS Gain at Main Lobe	3.68	(5.66 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	3.60	(5.56 dB)	Frequency	104.70 MHz
Calculated / Measured	Calculated		Drawing #	08V370075-90



VERTICAL PLANE RELATIVE FIELD PATTERN

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