

du Treil, Lundin & Rackley, Inc.

A Subsidiary of A.D. Ring, P.

TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
RADIO STATION WLCC(FM)
LURAY, VIRGINIA
CH 289A 0.135 KW 626 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of radio station WLCC(FM) at Luray, Virginia. WLCC(FM) presently is licensed on Channel 289A (105.7 Megahertz) with an effective radiated power of 0.44 kilowatt and an antenna height above average terrain of 329 meters. By this instant application, WLCC(FM) proposes to relocate the station to Big Mountain with an effective radiated power of 0.135 kilowatt and an antenna height above average terrain of 626 meters.

The proposal would not be subject to environmental processing in accordance with Section 1.1306. A Federal Aviation Administration (FAA) Determination of No Aeronautical Hazard has been issued for the authorized for the existing structure. The Commission's tower registration number is 1017951. It is believed that this proposal conforms with all applicable rules and regulations of the FCC.

Proposed Transmitter Location

The proposed transmitting facility will consist of a FM antenna side-mounted on a tower located atop of Big Mountain in Page County, Virginia. The tower is also be employed by station WHSV-TV on Channel 3 assigned to Harrisonburg, Virginia. The location is uniquely described by the following geographic coordinates, which were obtained from the Commission's Tower Registration database:

38° 36' 05" North Latitude

78° 37' 57" West Longitude

A map showing the transmitter location is included herein as Figure 1. A sketch showing the proposed antenna and supporting structure is shown on Figure 2.

It is noted that the proposed transmitter location is located within the National Radio Astronomy Observatory at Greenbank, West Virginia radio quiet zone. Pursuant to Section 21.113 of the Commission's Rules, a copy of this technical exhibit is being sent to the Observatory for their review.

Response to Paragraph 14

The 115 dBu predicted "blanketing" contour of the proposed station would extend radially 0.15 kilometer from the transmitting site. The applicant recognizes its responsibility to resolve complaints of blanketing interference as required by Section 73.318.

Coverage Contours

The predicted coverage contours for the proposed operation were calculated in accordance with the provisions of Section 73.313. In accordance 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 the National Geophysical Data Center's (NGDC) 30-second terrain database. An additional radial through the principal community of Luray was also obtained. The terrain elevations were then used in combination with the effective radiated power for determining the distances to coverage contours.

Figure 3 is a tabulation of the average elevations and predicted distances to the coverage contours for the proposed operation. Figure 4 is a map showing the predicted coverage contours. As the map illustrates, the FCC predicted 70 dBu contour only encompasses 37.1 percent of the Luray city limits. However, as demonstrated below, by employing an alternate propagation model, 70 dBu coverage over Luray is indeed predicted. The Luray community limits shown were obtained from the 1990 U.S. Census Topologically Integrated Geographic Encoding and Referencing (TIGER) data files.

Population and Area

The population to be served within the predicted 60 dBu (1 mV/m) contour was determined by a computer program which adds the populations of census enumeration districts having centroids located within the contour. The 1990 U.S. Census was employed. The area within the 60 dBu (1 mV/m) contour was determined by a computer program employing the root mean square method. The predicted 60 dBu (1 mV/m) contour encompasses approximately 2,400 square kilometers within which an estimated 73,900 persons reside.

Allocation Study

Figure 5 is an allocation study for channel 289A at the proposed site. The figure contains a tabulation of actual and required separation distances from other pertinent stations and allotments. The proposed site meets the FCC's minimum separation requirements, specified in Section 73.207(b) of the Commission's Rules, to all assignments.

Prediction of 70 dBu Coverage Over Luray Community

The 70 dBu contour, calculated by employing the FCC propagation curves, is predicted to extend a radial distance of approximately 16.4 kilometers toward the principal community of Luray, Virginia as shown on Figure 4. The community is located beyond the FCC predicted 70 dBu contour but within the FCC predicted 60 dBu contour.

Study of the elevation profiles between the transmitter site and Luray indicates that a higher field strength would be expected over the community than predicted using the FCC propagation curves. In order to verify these enhanced propagation paths, a computer model employing the Longley-Rice method was employed. Using this point-to-point irregular terrain model, data was obtained and plotted on the attached graphs for three radials; a radial directly toward the community and two lateral radials. The graphs, Sheet 1, 2 and 3 of Figure 6, show the calculated fields along the paths from the proposed transmitter site computer at 0.1 mile intervals. The ground elevation along each radial, derived from the U.S.G.S. three-second terrain database, is also shown along the bottom of each graph.

By interpolating the calculated fields, the Longley-Rice predicted 70 dBu contour is actually predicted to extend beyond the FCC predicted 70 dBu coverage contour toward the principal community. The city limits of Luray, the FCC and Longley-Rice predicted contours are shown on Sheet 4 of Figure 6. As can be seen from the map, the Longley-Rice predicted coverage contour encompasses 100 percent of Luray. Therefore, based on the Longley-Rice method and the Commission's policy of requiring that only 80 percent of the principal community be covered, the proposed facility complies with the 70 dBu coverage requirement over the principal community.

Additionally, the Commission's present staff policies, with respect to the application of the Longley-Rice model, are satisfied. As evident within the exhibit, the FCC predicted 60 dBu coverage contour entirely

encompasses the principal community of Luray and the radial distance to the Longley-Rice coverage contours exceeds the distance to the comparable FCC coverage contours by ten percent.

Environmental Considerations

The proposed facility has been evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC Specified Guidelines for Human Exposure to Radiofrequency Radiation." The proposed calculated power density at the base of the tower was calculated using the appropriate equation on Page 8 of the Bulletin.

Using a total effective radiated power of 0.27 kilowatt (horizontal and vertical polarization) and a worst-case relative field value of 1.0, the predicted power density at ground level located below 76 meters the antenna radiation center is 0.002 mV/cm^2 . This is less than one percent of the Commission's guidelines for FM radio stations.

Pursuant to Note 2 in Section 1.1307(b) of the Commission's Rules, the power density contributions of co-located and nearby broadcast stations are not required to be calculated as the proposed WLCC(FM) power density contribution is less than one percent of the guideline value.

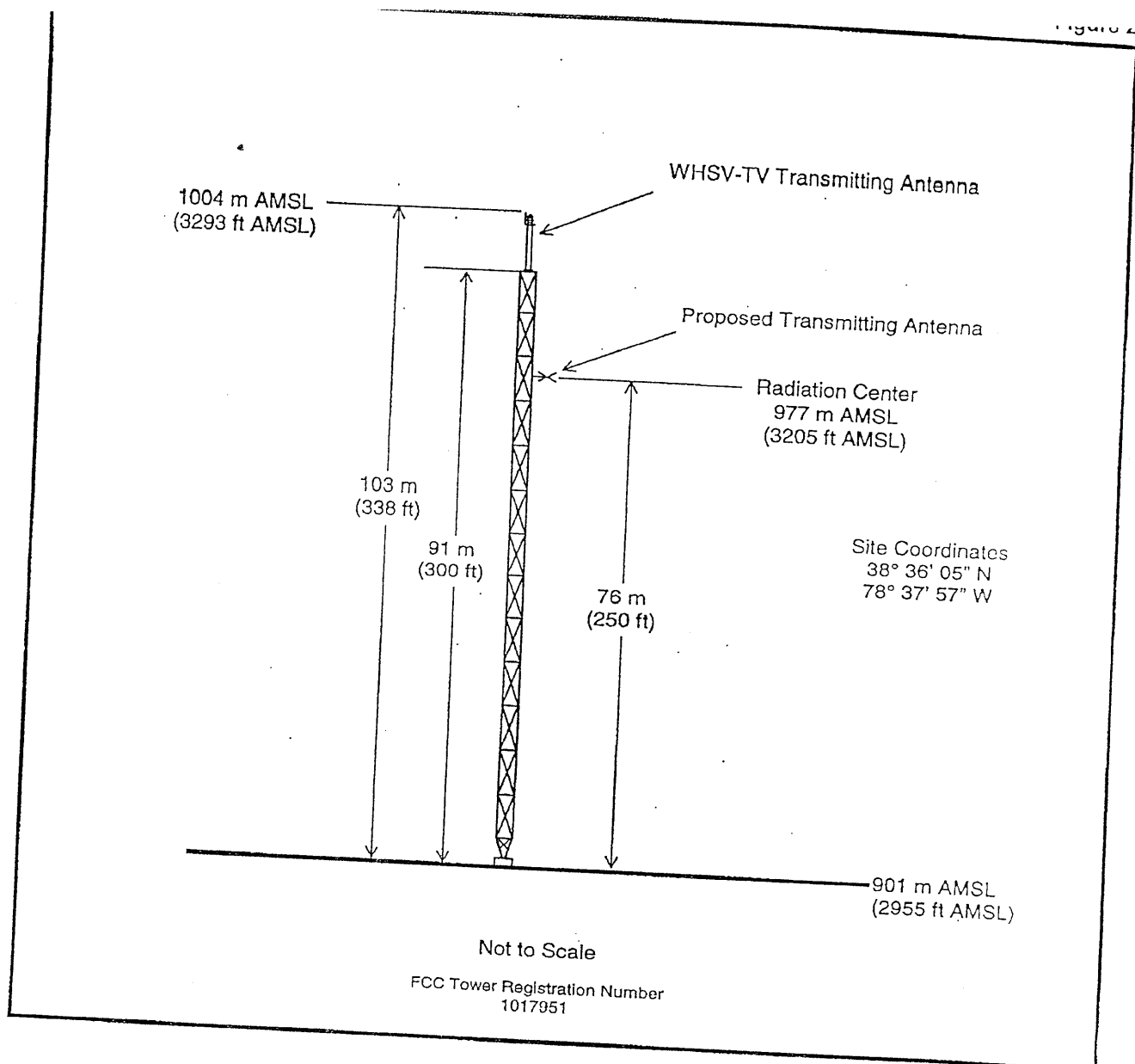
Access to the transmitting site is restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate

measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency radiation will not exceed the FCC guidelines. All co-located stations also will enter into an agreement that stations will reduce or shut down power, as necessary, whenever access by one of the stations is required on the tower.

Charles A. Cooper

July 16, 1997

du Treil, Lundin & Rackley, Inc.
240 North Washington Blvd., Suite 700
Sarasota, Florida 34236
(941) 366-2611



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

COMMONWEALTH AUDIO VISUAL ENTERPRISES, INC.

RADIO STATION WLCC(FM)

LURAY, VIRGINIA

CH 289A 0.135 KW 626 M

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

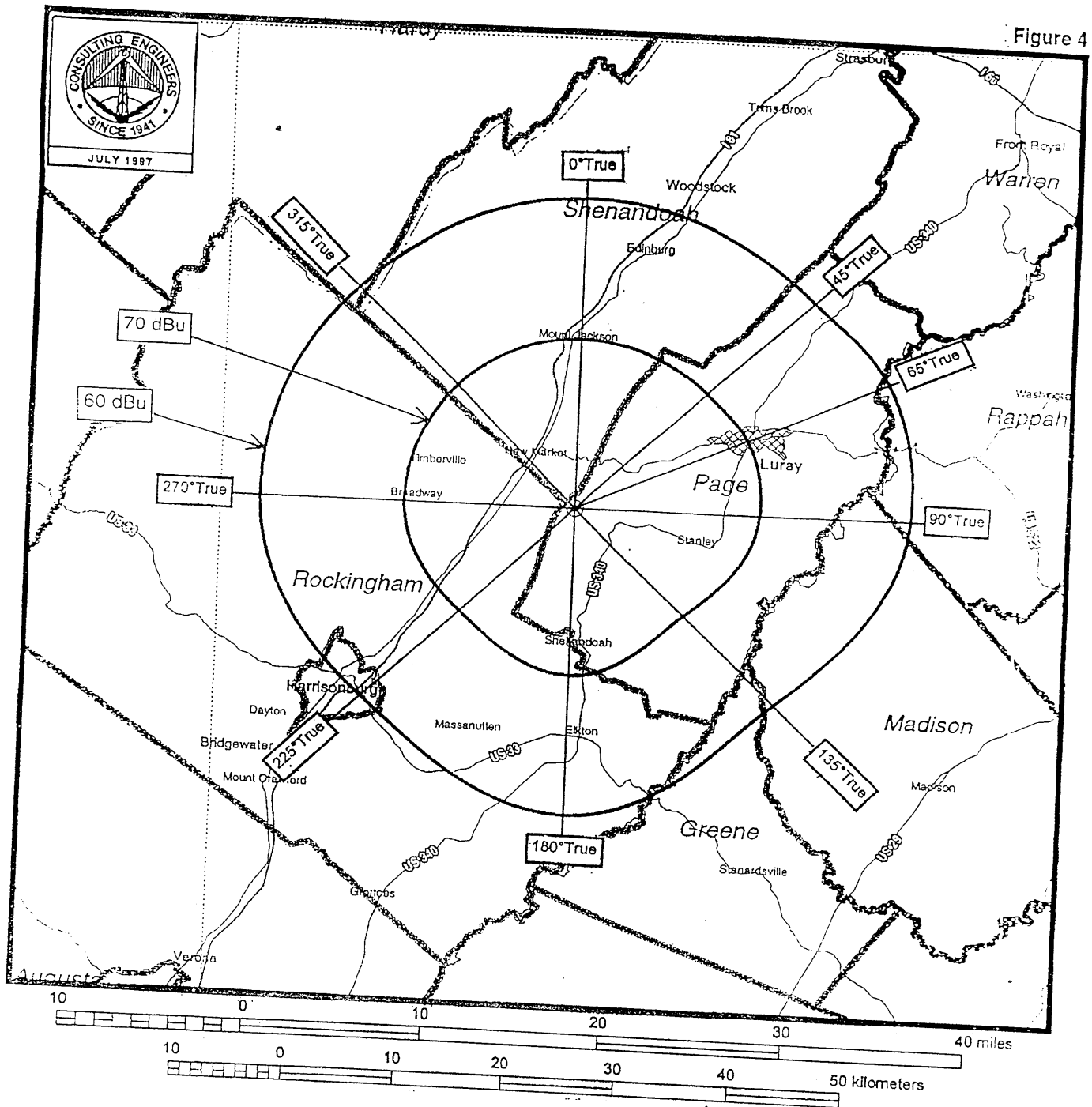
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Distances to FCC Predicted Coverage Contours

Azimuth (° True)	Average Terrain (meters)	Antenna Height Above Average Terrain (meters)	Distances to contours (km)	
			70 dBu	60 dBu
0	312	665	15.9	29.1
45	326	651	15.8	28.8
65*	274	703	16.4	30.0
90	293	684	16.2	29.6
135	461	516	13.8	25.5
180	310	667	16.0	29.2
225	422	555	14.4	26.6
270	346	631	15.5	28.4
315	340	637	15.6	28.5
Average:	351	626		

* Radial through principal community. Not included in average.

Figure 4



FCC PREDICTED COVERAGE CONTOURS
 COMMONWEALTH AUDIO VISUAL ENTERPRISES, INC.
 RADIO STATION WLCC(FM)
 LURAY, VIRGINIA
 CH 289A 0.135 KW 626 M
 du Treil, Lundin & Rackley, Inc. Sarasota, Florida

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Allocation Study

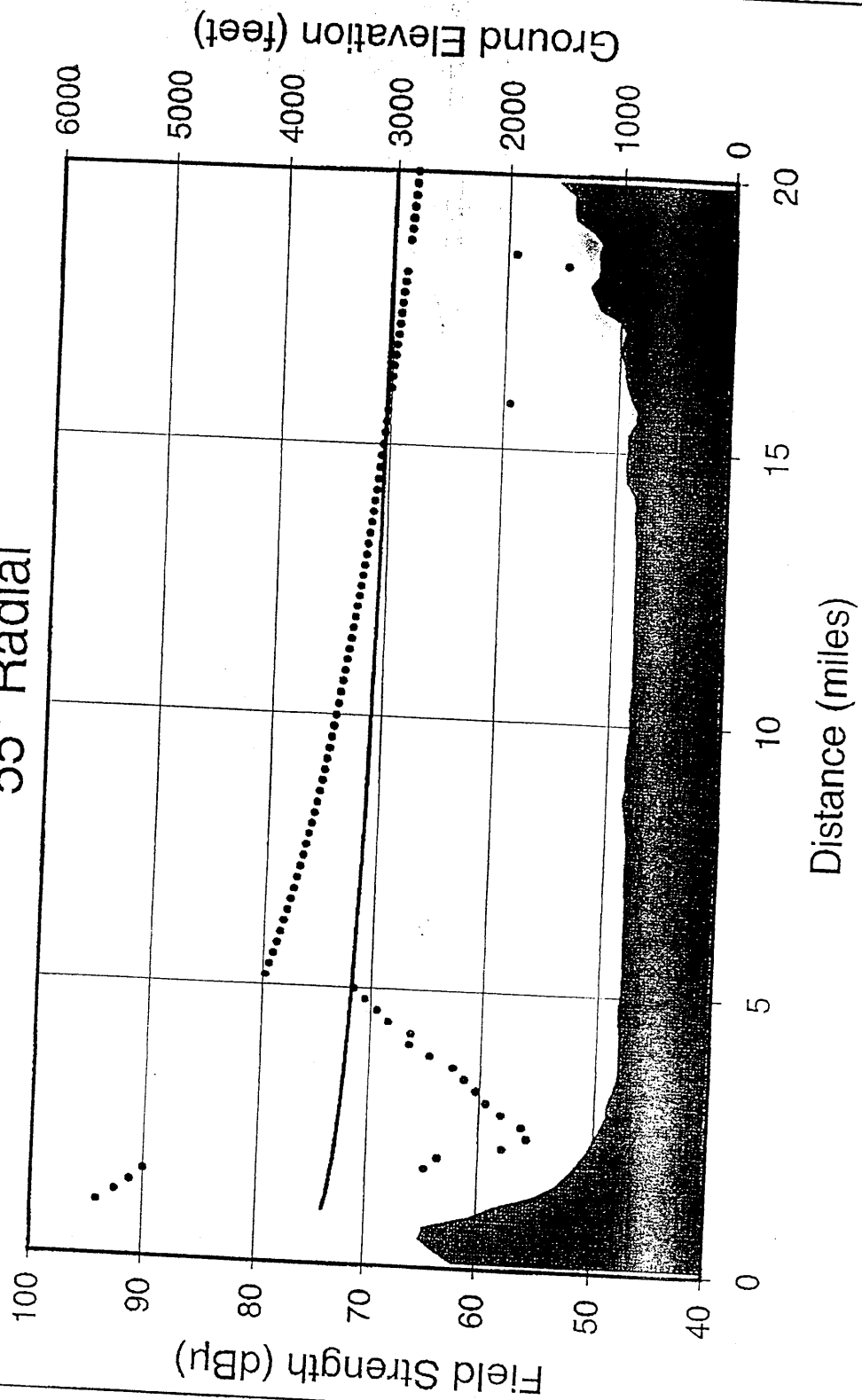
Channel 289A

38° 36" 05" North Latitude
78° 37' 57" West Longitude

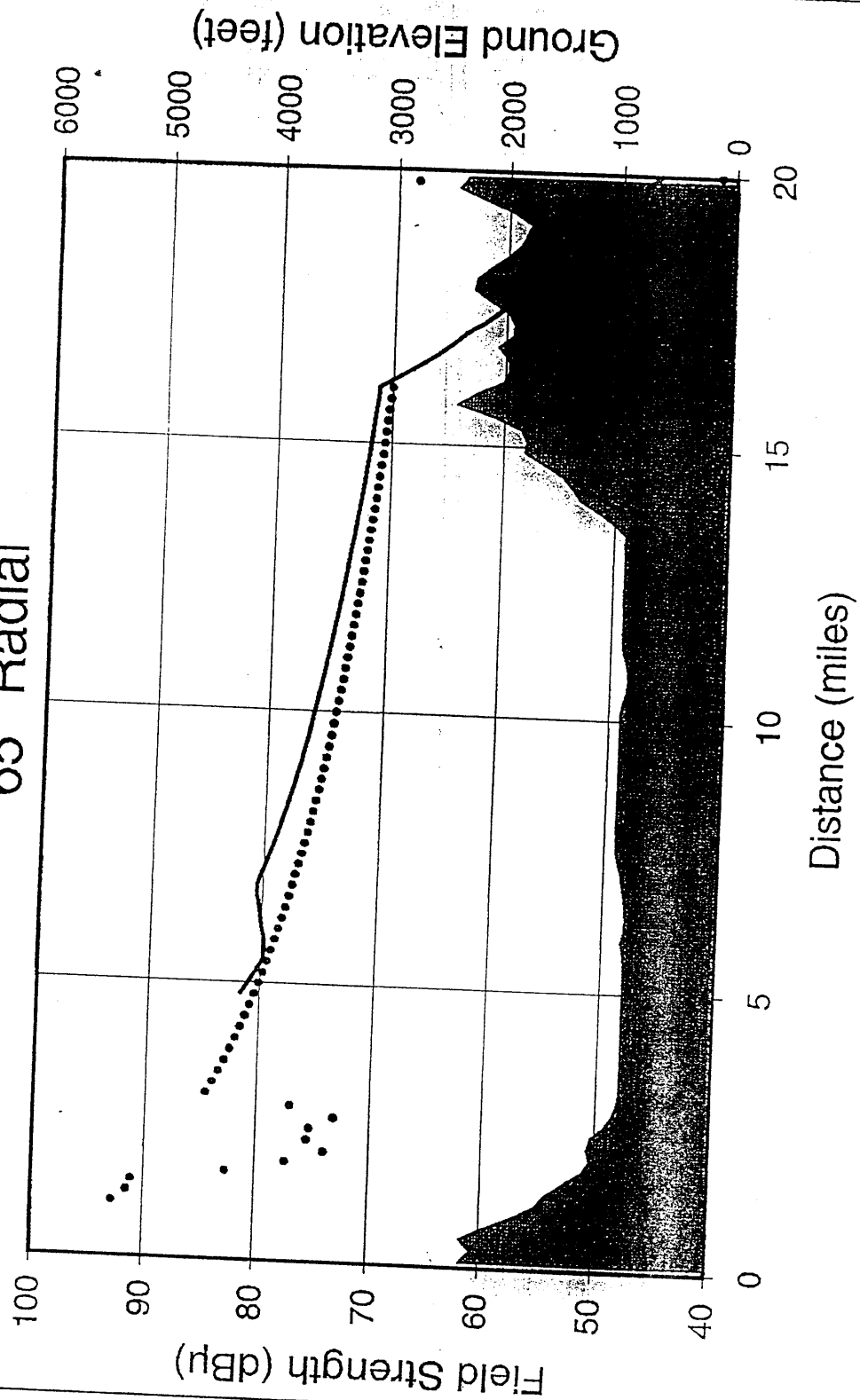
Call Status	City State	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-Tru	Dist. (km)	Req. (km)
WAMMFM LIC	Bridgewater VA	BLH941128KB	286A 105.1	6.0 100.0	38-24-30 78-54-04	227.5 SS	31.76	31
ALC	Dillwyn VA	Docket95-100	287A 105.3		37-35-18 78-37-01	179.3	112.46	31
WAPP LIC	Berryville VA	BLH800506AC	288A 105.5	3.0 91.0	39-07-03 77-58-22	44.7	81.01	72
WLCC LIC	Luray VA	BMLH910314KD	289A 105.7	0.4 329.0	38-30-41 78-29-15	128.4 SS	16.12	115
WQSR LIC	Catonsville MD	BLH880311KE	289B 105.7	50.0 150.0	39-19-26 76-32-56	65.3	197.62	173
WJZW LIC	Woodbridge VA	BLH851021KC	290B 105.9	28.0 198.0	38-52-28 77-13-24	75.6	126.23	113
WJZW APP	Woodbridge VA	BPH961114IB	290B 105.9	25.0 123.0	38-53-12 77-12-05	75.2	128.40	113
WKGO LIC	Cumberland MD	BLH4217	291B 106.1	4.0 427.0	39-34-54 78-53-58	348.1	111.26	69
WBOP CPM	Churchville VA	BMPH900712IC	292B1 106.3	10.0 117.0	38-12-08 79-04-34	221.2 SS	58.87	48

Applicants existing facility

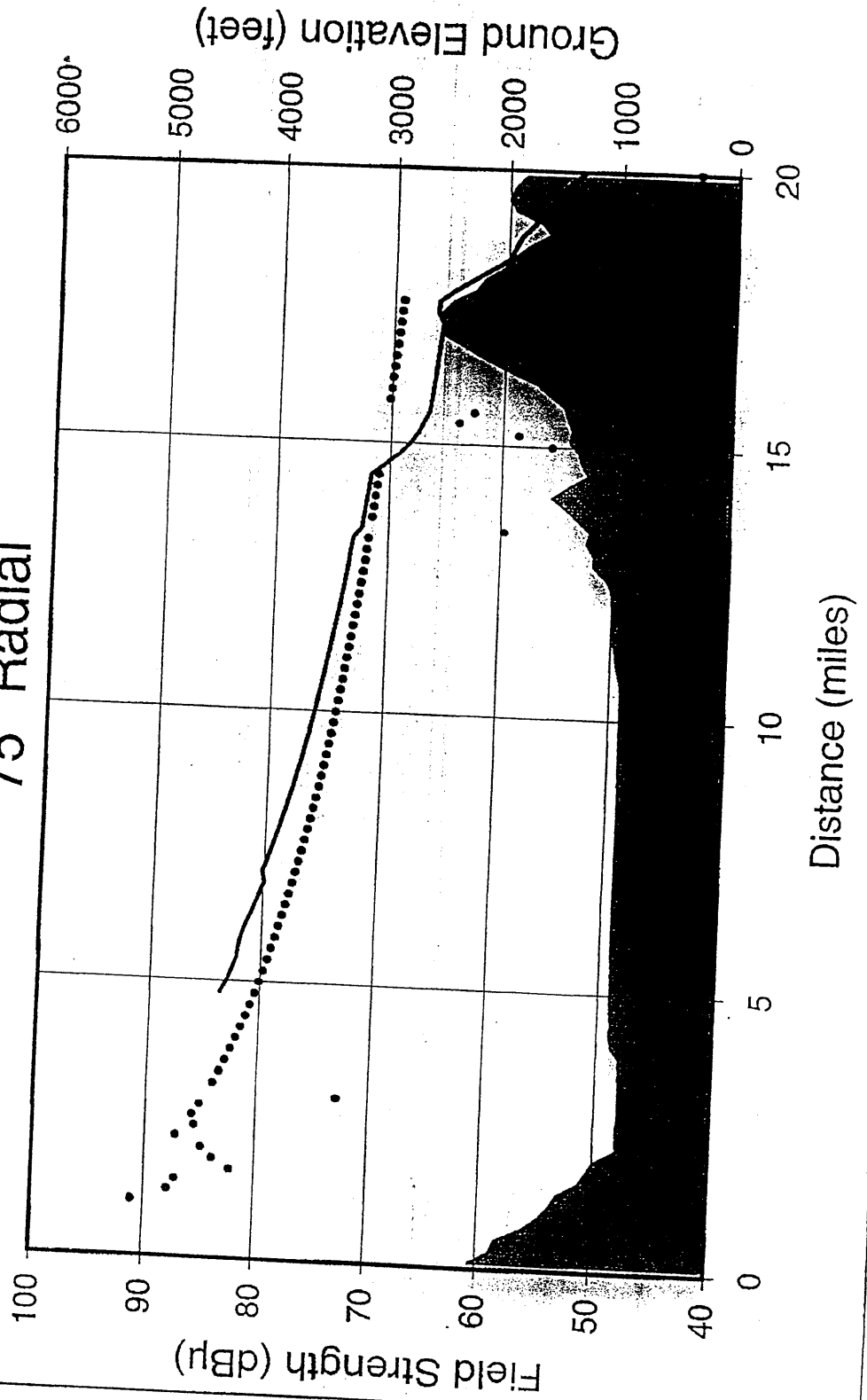
Longley-Rice Field Strength 55° Radial



Longley-Rice Field Strength 65° Radial



Longley-Rice Field Strength 75° Radial





NATIONAL RADIO ASTRONOMY OBSERVATORY

POST OFFICE BOX 2 GREEN BANK, WEST VIRGINIA 24944-0002
TELEPHONE (304) 456-2107 FAX (304) 456-2276

22 October 2001

Jason Cave
Easy Radio, Inc.
Suite B, 130 University Blvd.
Harrisonburg, VA 22801

Re: **FM Broadcast Radio Service**
Easy Radio, Inc.
Harrisonburg, VA
Modification of station WMXH (FM),
105.7 MHz (Channel 289) Class A station
on Big Mountain in Page County, VA,
per your letter dated October 17, 2001.
NRQZ#3796/22OCT01

Dear Mr. Cave,

Neither the National Radio Astronomy Observatory (NRAO), Green Bank, WV, nor the Navy research facility, Sugar Grove, WV, object to the referenced application.

This letter constitutes coordination of assignment in the National Radio Quiet Zone required by FCC Rule 73.1030.

If I can be of further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read 'W. A. Sizemore', is written over a horizontal line.

Wesley A. Sizemore
Scientific Associate

Federal Aviation Administration
Eastern Region, AEA-520
1 Aviation Plaza
Jamaica, NY 11434-4809

AERONAUTICAL STUDY
No: 01-AEA-1736-OE
PRIOR STUDY
No: 01-AEA-0168-OE

ISSUED DATE: 05/04/01

JASON D. CAVE
EASY RADIO, INC.
130 UNIVERSITY BLVD, SUITE B
HARRISONBURG, VA 22801

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Description: DECREASE ANTENNA TOWER HEIGHT 105.7 Mhz/0.135 kW
Cancels and Supersedes Study 01-AEA-0168-OE
Location: NEWPORT VA
Latitude: 38-35-59.00 NAD 83 *NAD27: 38 35 58.6*
Longitude: 078-38-00.00 *78 38 00.9*
Heights: 199 feet above ground level (AGL)
2895 feet above mean sea level (AMSL) *878m = 2880 ft,*

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1K Change 1.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 11/04/02 unless:

- (a) extended, revised or terminated by the issuing office or
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case the determination expires on the date prescribed by the FCC for completion of construction or on the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which

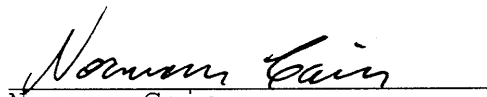
includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, frequency(ies) or use of greater power will void this determination. Any future construction or alteration, including increase in heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at 718-553-4530. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 01-AEA-1736-OE.


Norman Cain
Specialist, Airspace Branch

(DNE)