TECHNICAL EXHIBIT
APPLICATION FOR LICENSE
MAIN FACILITY
RADIO STATION WYAY
GAINESVILLE, GEORGIA
CH 294C 77 KW 505 M

Technical Statement

This Technical Exhibit, of which this statement is part, was prepared on behalf of radio station WYAY on Channel 294C at Gainesville, Georgia. WYAY has authorization to construct a new main facility.[1] By this instant application, station licensure is requested.

In compliance with special operating condition 3 of the WYAY construction permit, intermodulation measurements have been made by Peter Eckmann Broadcast Consultants, Inc. and are included herewith. In addition, in compliance with special operating condition 4, a license application has been filed for the WYAY auxiliary facility to reduce ERP to 19 kilowatts (BXMLH-20051102AAH).

Figure 1 is a tabulation of the RF transmission system.

Longley-Rice/PTP Coverage of WYAY main studio

The WYAY main studio is located 58.8 kilometers from the WYAY authorized transmitter site at a bearing of 273.4° true. The authorized WYAY 70 dBu contour, calculated by employing the FCC's propagation curves, is predicted to extend a radial distance of 58.3 kilometers toward the WYAY

[1] See FCC Construction Permit BMPH-20050923AAD.

studio as shown on Figure 3. Thus, the main studio is located slightly (0.5 km) beyond the FCC predicted 70 dBu contour.

Therefore, both the Longley-Rice prediction method[2] and the FCC's supplemental point-to-point ("PTP") prediction method, as set forth in the Notice of Proposed Rule Making in MM Docket No. 98-93 ("Docket 98-93"), were used as more precise alternatives to the Commission's standard prediction method to determine the location of WYAY's authorized 70 dBu contour.

A study of 3 radials (272° true, 273° true, and 274° true) between the authorized WYAY transmitter site and the WYAY studio, indicate that a higher field strength is expected over the WYAY studio if the Longley-Rice method is employed. Using this alternate method, data was obtained and plotted on the attached graphs, provided as Sheets 1, 2, and 3 of Figure 2. The following parameters were employed in the calculations:

Model	Point-to-point irregular
Location Variability	50%
Time Variability	50%
Situation Variability	50%
Frequency	106.7 MHz
Polarization	Horizontal
Conductivity	0.005 S/m
Dielectric Constant	15.0
Transmitter Antenna Height AMSL	772 m
Transmitting Antenna	Nondirectional
Maximum Effective Radiated Power	77000 W
Receive Antenna Height	9.1 m

[2] Rice, P.L., A.G. Longley, K.A. Norton, and A.P. Barsis, "Transmission Loss Predictions for Tropospheric Communication Circuits," Technical Note 101 (Issued May 7, 1965, Revised January 1, 1967) National Bureau of Standards, Boulder, Colorado.

See also Longley, A.G., and P.L. Rice, "Prediction of Tropospheric Radio transmission Loss Over Irregular Terrain: A Computer Method-1969,"" ESSA Technical Report ERL-ITS 67, Institute for Telecommunications Sciences, Boulder, Colorado, July 1968.

Specifically, the Longley-Rice prediction method, otherwise known as Tech Note 101, was applied in this case as a more precise alternative to the Commission's standard method.[3] The model analyzes the terrain along the entire path under study and determines if an obstruction should be considered a "knife-edge" or "rounded obstacle". A 3-second digitized terrain database is employed in the calculations. The program also determines whether "smooth earth" or "free space" calculations are appropriate for unobstructed paths. This is considered a more "real world" depiction of coverage.

Based on the Longley-Rice method, the 70 dBu contour is predicted to extend at least 64 kilometers along these three bearings (272, 273, and 274) and therefore entirely encompasses the WYAY main studio.

For the PTP method, the program developed by the FCC's Office of Engineering Technology (OET) and Mass Media Bureau (MMDB) was used to determine the distances to the 70

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[3]Rice, P. L., A. G. Longley, K. A. Norton, and A. P. Barsis, "Transmission Loss Predictions for Tropospheric Communication Circuits," Technical Note 101 (Issued May 7, 1965, Revised January 1, 1967) National Bureau of Standards, Boulder, Colorado.

See also Longley, A. G., and P. L. Rice, "Prediction of Tropospheric Radio Transmission Loss Over Irregular Terrain; A Computer Method-1969," ESSA Technical Report ERL-ITS 67, Institute for Telecommunications Sciences, Boulder, Colorado, July 1968.

The propagation analysis over irregular terrain described in the above documents has been developed into a computer model. The program is available through the Institute for Telecommunications Sciences (ITS) of the national Institute for Science and Technology (NIST). The ITS program is call the Communications System Performance Model (CSPM). The model analyzes the terrain along the entire path under study, not just from 3.2 to 16.1 kilometers as in the Commission's standard prediction method, and determines if an obstruction should be considered a "knife edge" or a "rounded obstacle". A 3-second digitized terrain database is employed in the calculations. The program also determines whether "smooth earth" or "free space" calculations are appropriate for unobstructed paths. The CSPM results are objective, quantifiable and repeatable with user input basic parameters (coordinates, frequency, ERP and transmit and receive antenna height).

dBu contour along the 72 equally spaced radials from 0° clockwise to 355° true. The 70 dBu contour based on the PTP method is depicted by a red line on Figure 3. As shown on Figure 3, the 70 dBu contour based on the PTP method also encompasses the WYAY main studio location.

It is noted that the WYAY licensed facility employed the use of the Longley-Rice Predicted method to show compliance with the studio requirement of Section 73.1125. Therefore it is believed a precedence exists for use of the Longley-Rice model. In addition, the WYAY authorized construction permit site is located 2.5 kilometers closer to the main studio site, and the authorized 70 dBu contour is also located closer to the main studio than the licensed 70 dBu contour.

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November 15, 2005

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Figure 1

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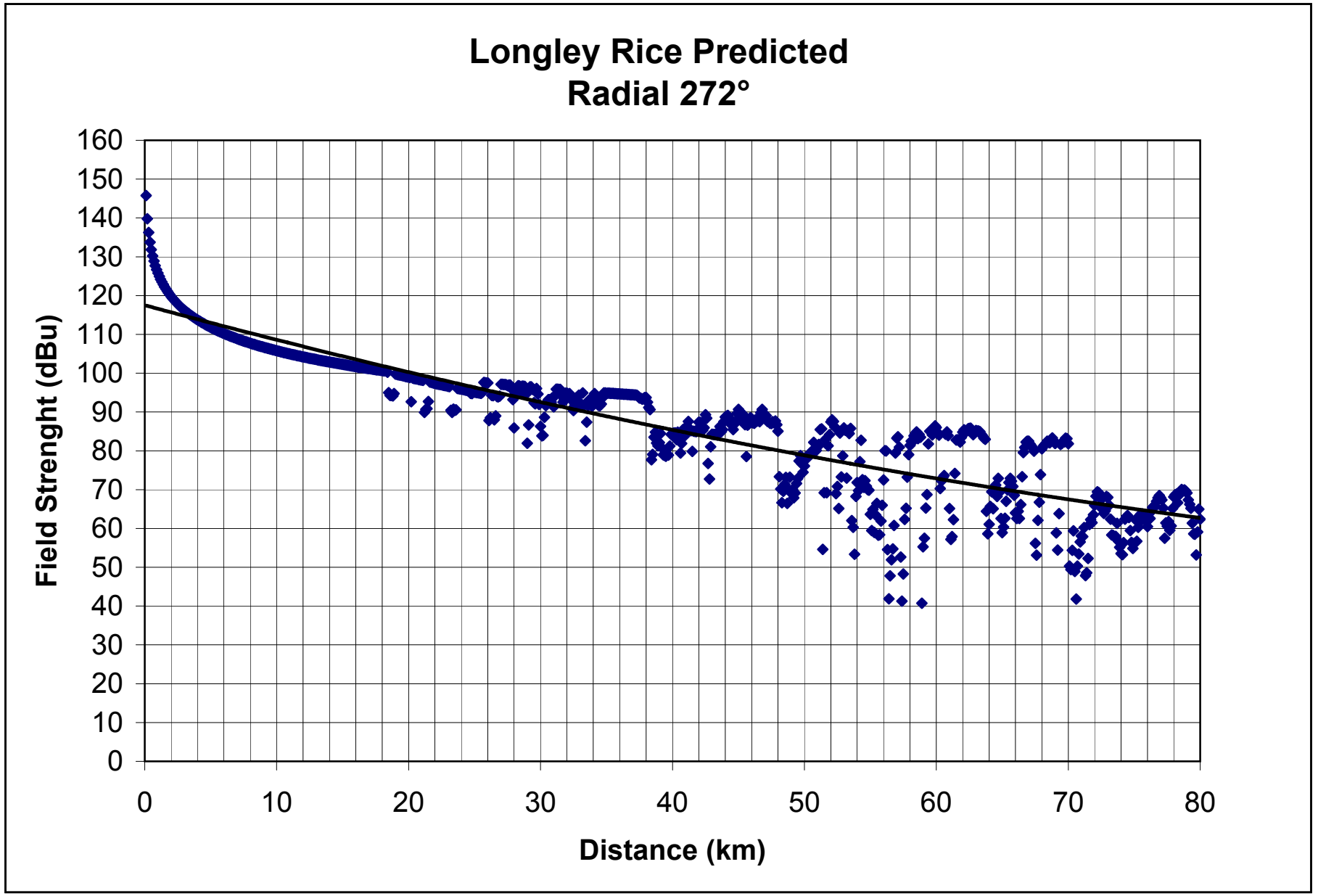
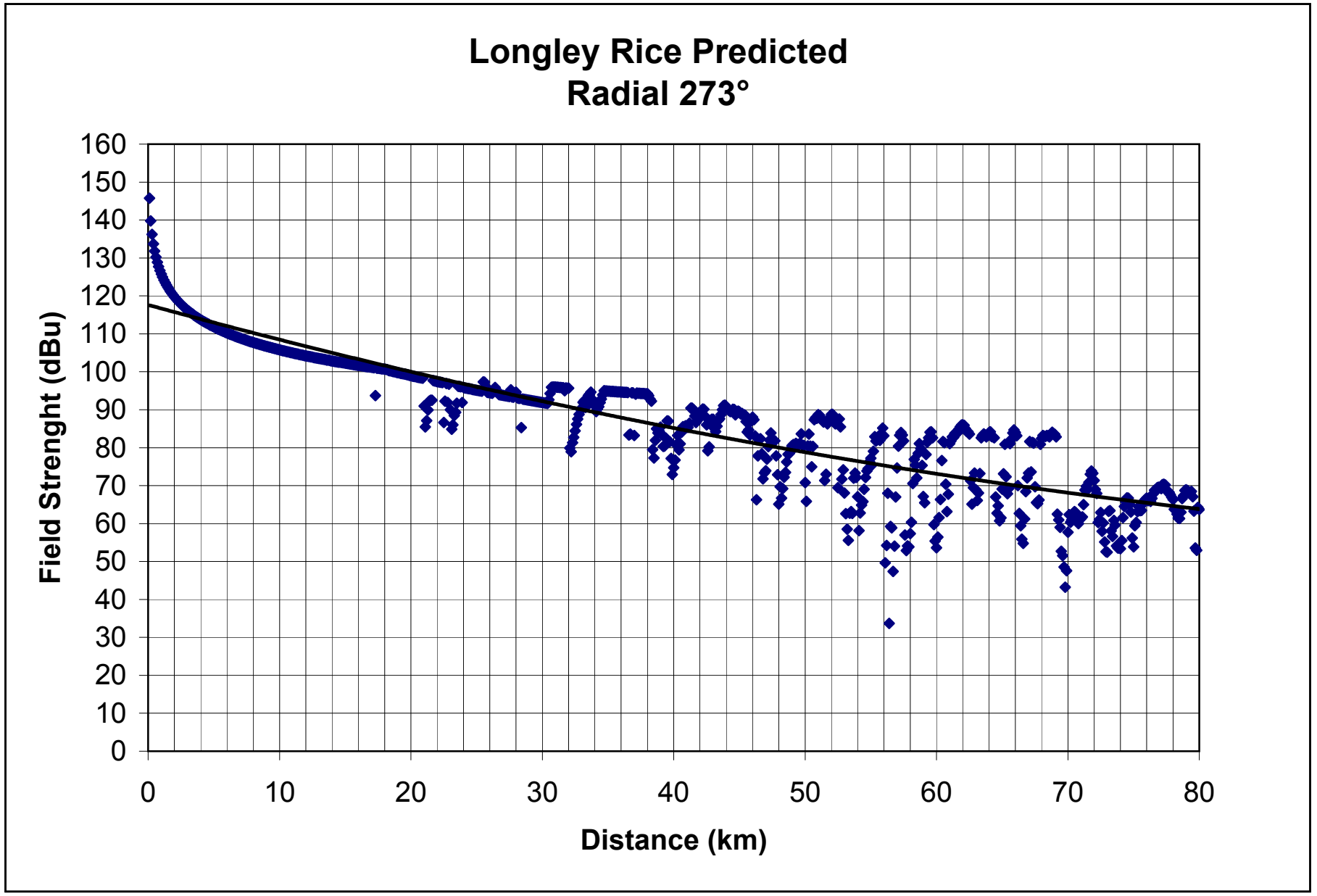
WYAY RF Transmission System Specifications

Description	System
Transmitter Power Output (30.6 kW):	14.86 dBk
Combiner loss/Insertion loss	0.2 dB
Transmission Line Loss (6" Rigid) 1,904 feet:	1.0 dB
Shively 6814-BB-6R-PS Antenna Gain (3.3) Power Gain):	5.2 dB
Effective Radiated Power (77 kW):	18.86 dBk


Longley Rice Predicted
Radial 272°
Field Strenght (dBu)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
Distance (km)


Longley Rice Predicted
Radial 273°
Field Strenght (dBu)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
Distance (km)

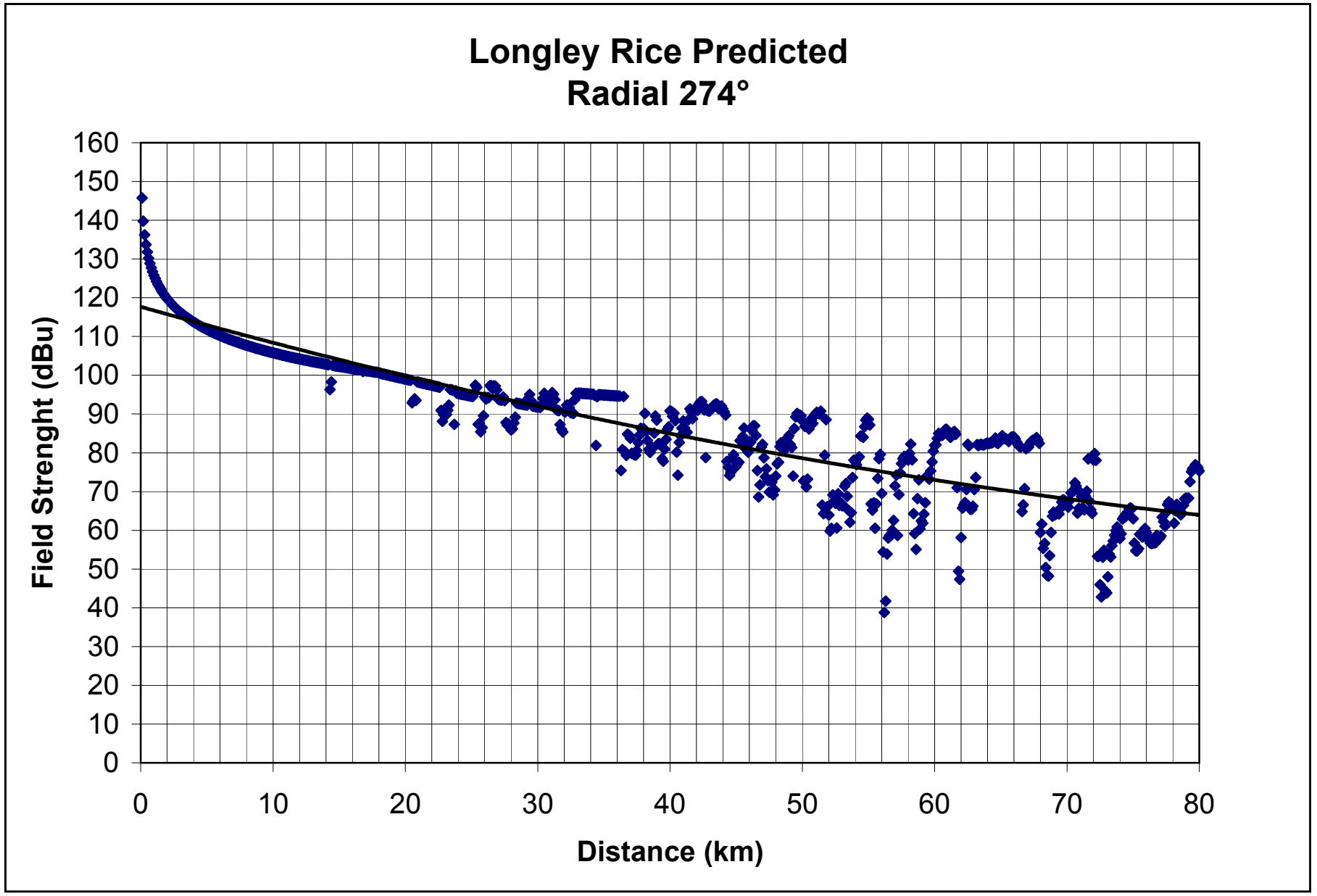
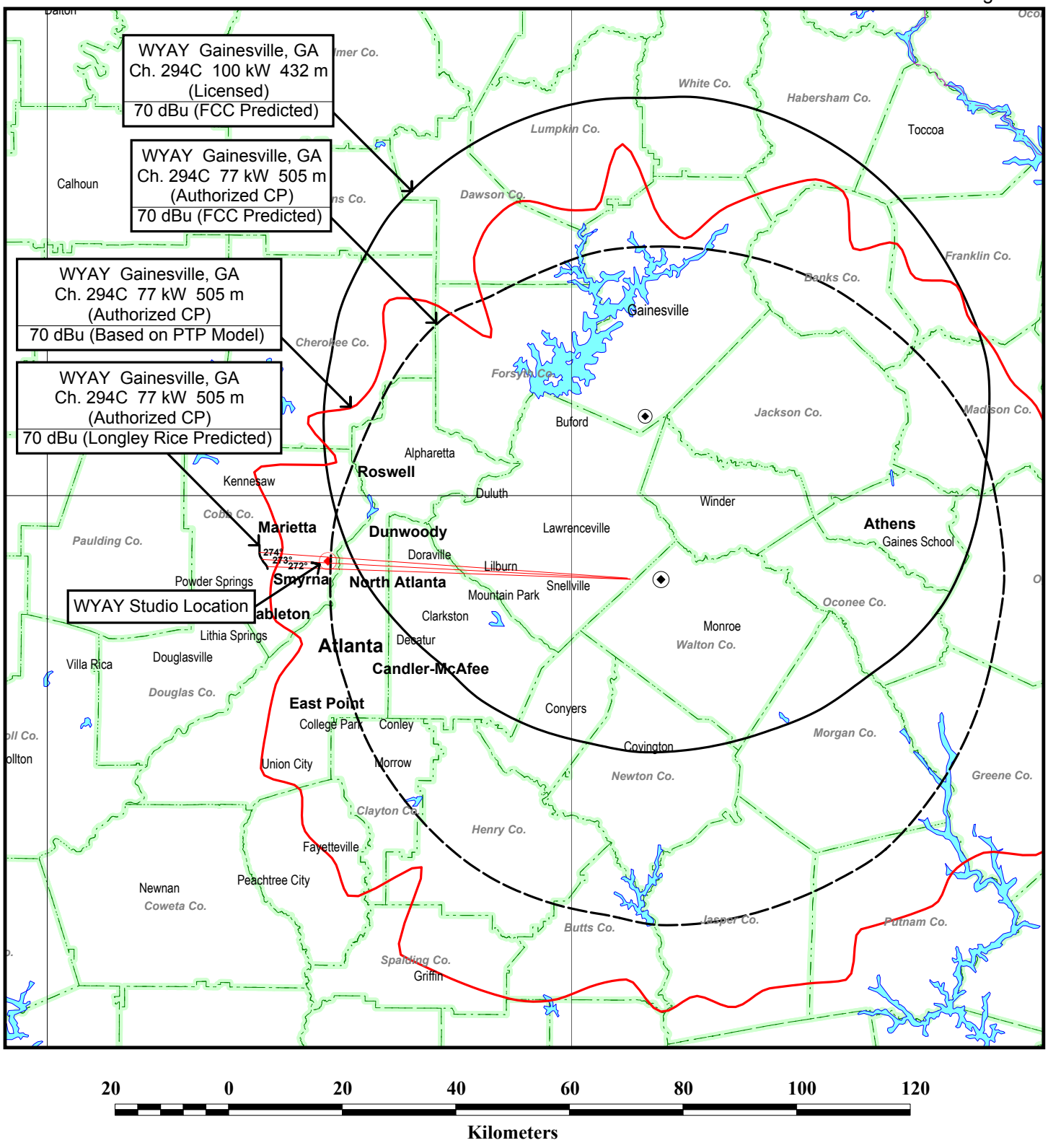

Longley Rice Predicted
Radial 274°
Field Strenght (dBu)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
Distance (km)

Figure 3



COMPLIANCE WITH SECTION 73.1125

FM STATION WYAY
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du Treil, Lundin & Rackley, Inc. Sarasota, Florida