

**Engineering Statement
In Support of a
Application for an Auxiliary Construction Permit
WJOX Aux, Channel 263C1, Northport, Alabama**

March, 2007

General

The purpose of this instant application is to request the addition of an auxiliary antenna to the tower on which the licensed WJOX antenna is located.

Exhibits Explained

Exhibit E, Figure 1 is a map showing the 60 dBu contours of the licensed and proposed auxiliary facilities of WJOX. The terrain/contour study (Exhibit E, Figure 2) displays the terrain data and contour distances in five-degree intervals.

Exhibit E, Figure 3 is a vertical sketch of the proposed antenna supporting structure. The auxiliary antenna is on the same tower (registration number: 1037022) as the licensed antenna. The human exposure exhibit (Exhibit E, Figure 4) shows the power densities and compliance with both controlled and uncontrolled limits.

**Environmental Impact
(No Exhibits)**

A grant of the proposed construction would not constitute a major action as defined in the Commission's Rules and Regulations.

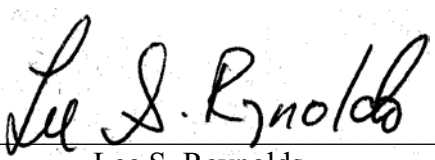
During operation, the facility will produce no chemical or significant thermal pollution, and no ionizing radiation will be generated. Areas of high intensity radiofrequency fields will be confined to the immediate area of the transmitting antenna, far above the ground and away from any human and wildlife population.

The area is not officially designated as a wilderness area or wildlife preserve and is not pending consideration. The area has no significant value in American history, architecture, archaeology, or culture, which is listed in the Register of Historic Places, and it is not eligible for listing. It is not recognized either nationally or locally for special scenic or recreational value.

Conclusion

This statement/application has been prepared by utilizing the latest available information, cross-checked with the Federal Communications Commission and other sources. It is submitted that the engineering data compiled and demonstrated herein for the proposed is in compliance with Commission's Rules and Regulations at the time of this application's filing date.

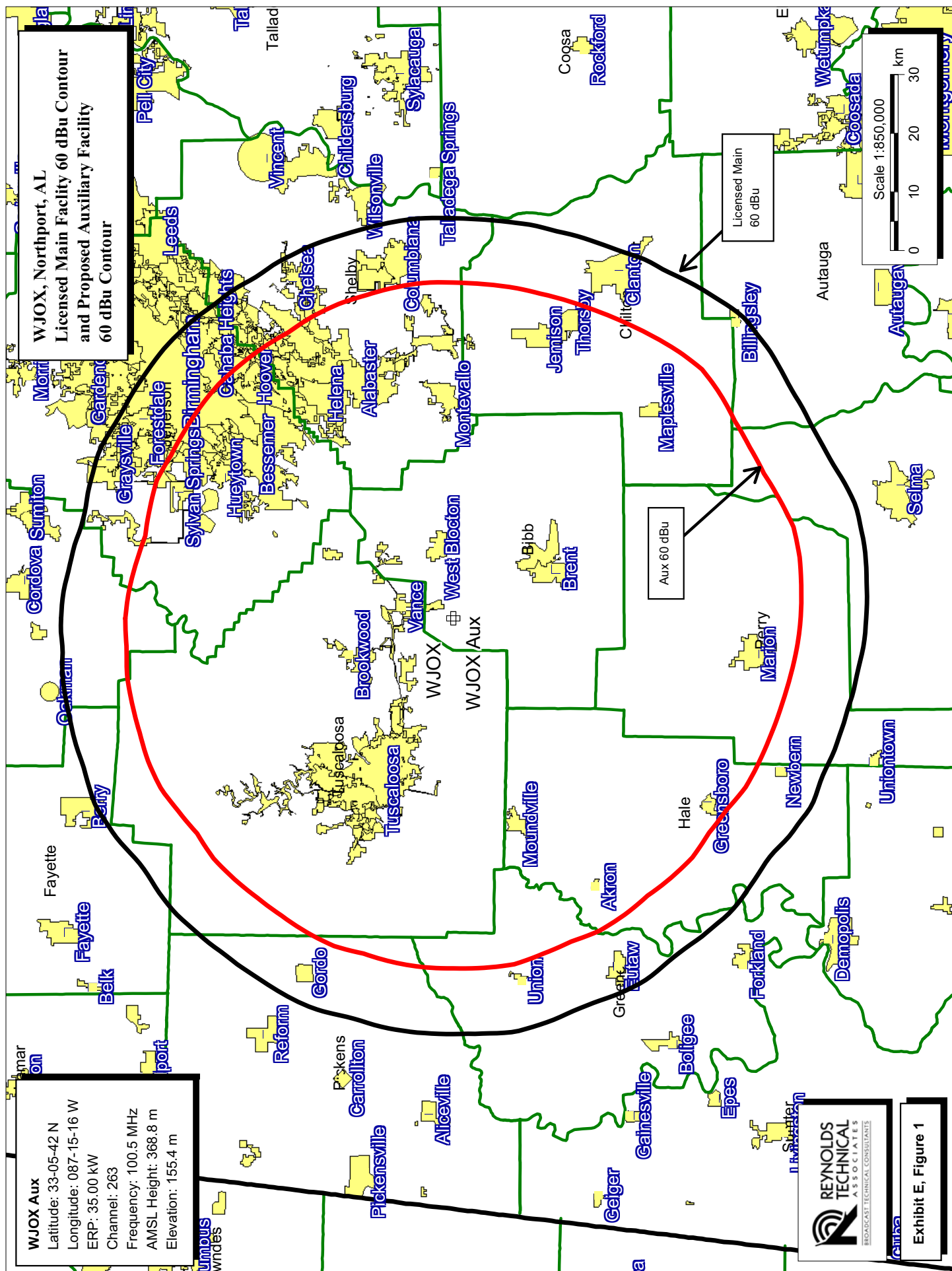
For RTA:



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March 12th, 2007

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Terrain/Contour Study

Reference Coordinates:

North Latitude: 33-05-42

West Longitude: 87-15-16

ERP: 35 kW

Azimuth °T.	Ave. Elev. 3 to 16 km Meters AMSL	Main ERP (dBk)	Aux ERP (dBk)	F(50-50) Distance to Licensed Main 60 dBu Contour (km)	F(50-50) Distance to Aux 60 dBu Contour (km)
0	148.3	19.294	15.441	66.8	55.9
5	153.4	19.294	15.441	66.4	55.4
10	160.7	19.294	15.441	65.8	54.8
15	166.7	19.294	15.441	65.3	54.3
20	158.7	19.294	15.441	65.9	55.0
25	150.1	19.294	15.441	66.6	55.7
30	152.2	19.294	15.441	66.5	55.5
35	148.7	19.294	15.441	66.8	55.8
40	144.4	19.294	15.441	67.1	56.2
45	141.0	19.294	15.441	67.4	56.5
50	141.5	19.294	15.441	67.3	56.4
55	142.2	19.294	15.441	67.3	56.3
60	143.7	19.294	15.441	67.2	56.2
65	137.6	19.294	15.441	67.7	56.7
70	134.2	19.294	15.441	68.0	57.0
75	133.9	19.294	15.441	68.0	57.0
80	131.0	19.294	15.441	68.2	57.2
85	129.3	19.294	15.441	68.4	57.4
90	131.6	19.294	15.441	68.2	57.2
95	132.3	19.294	15.441	68.1	57.1
100	130.7	19.294	15.441	68.2	57.3
105	130.7	19.294	15.441	68.2	57.3
110	127.7	19.294	15.441	68.5	57.5
115	124.1	19.294	15.441	68.8	57.8
120	117.6	19.294	15.441	69.3	58.2
125	110.1	19.294	15.441	69.9	58.8
130	101.0	19.294	15.441	70.7	59.5
135	94.6	19.294	15.441	71.1	60.0
140	102.4	19.294	15.441	70.6	59.4
145	113.4	19.294	15.441	69.7	58.6
150	116.8	19.294	15.441	69.4	58.3
155	115.8	19.294	15.441	69.5	58.4

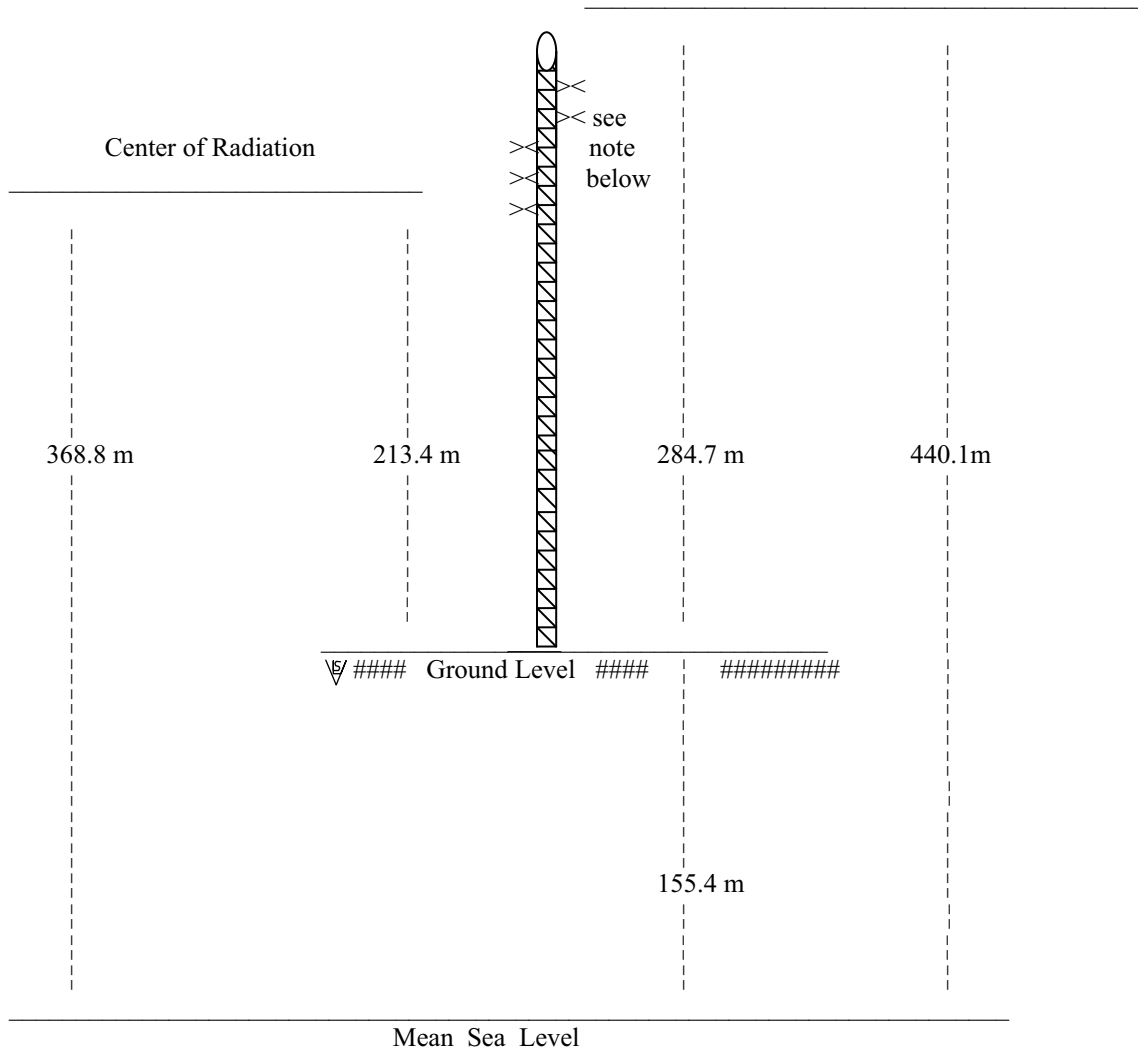
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ERP: 35 kW

Azimuth	Ave. Elev. 3 to 16 km	Main ERP	Aux ERP	F(50-50) Distance to Licensed Main 60 dBu Contour	F(50-50) Distance to Aux 60 dBu Contour
°T.	Meters AMSL	(dBk)	(dBk)	(km)	(km)
160	105.5	19.294	15.441	70.3	59.1
165	94.0	19.294	15.441	71.2	60.0
170	95.2	19.294	15.441	71.1	59.9
175	100.8	19.294	15.441	70.7	59.5
180	105.1	19.294	15.441	70.3	59.2
185	111.1	19.294	15.441	69.9	58.7
190	117.9	19.294	15.441	69.3	58.2
195	123.1	19.294	15.441	68.9	57.8
200	125.9	19.294	15.441	68.6	57.6
205	126.9	19.294	15.441	68.6	57.6
210	127.5	19.294	15.441	68.5	57.5
215	136.2	19.294	15.441	67.8	56.8
220	136.0	19.294	15.441	67.8	56.8
225	126.4	19.294	15.441	68.6	57.6
230	125.1	19.294	15.441	68.7	57.7
235	125.2	19.294	15.441	68.7	57.7
240	116.7	19.294	15.441	69.4	58.3
245	111.0	19.294	15.441	69.9	58.7
250	113.0	19.294	15.441	69.7	58.6
255	105.9	19.294	15.441	70.3	59.1
260	96.5	19.294	15.441	71.0	59.8
265	97.4	19.294	15.441	70.9	59.7
270	99.3	19.294	15.441	70.8	59.6
275	99.1	19.294	15.441	70.8	59.6
280	101.5	19.294	15.441	70.6	59.4
285	106.2	19.294	15.441	70.3	59.1
290	102.3	19.294	15.441	70.6	59.4
295	107.3	19.294	15.441	70.2	59.0
300	114.5	19.294	15.441	69.6	58.5
305	119.2	19.294	15.441	69.2	58.1
310	121.1	19.294	15.441	69.0	58.0
315	123.9	19.294	15.441	68.8	57.8
320	134.5	19.294	15.441	67.9	57.0
325	131.8	19.294	15.441	68.2	57.2
330	126.2	19.294	15.441	68.6	57.6
335	129.1	19.294	15.441	68.4	57.4
340	136.0	19.294	15.441	67.8	56.8
345	139.1	19.294	15.441	67.5	56.6
350	141.5	19.294	15.441	67.3	56.4
355	148.3	19.294	15.441	66.8	55.8

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WJOX Aux Class C1 Tower Vertical Sketch



Proposed Location: 33° 05' 42" N. Lat. 87° 15' 16" W. Long. [NAD 27]

NOT DRAWN TO SCALE

Proposed antenna: 3 element on existing tower 1037022.

Note: Main antenna is a 12 element at 245 m AGL, 400.4 m AMSL

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Human Exposure to Radiofrequency Radiation Study**

WJOX's licensed facility uses an ERI SHPX-12AC-SP (full wave spaced) 12 bay antenna mounted 245 meters above ground level that operates with 85 kilowatts (horizontally & vertically). WJOX has a construction permit for a facility with an antenna to be mounted 275 meters above ground level that will operate with 93 kilowatts (horizontally & vertically). WJOX is proposing to mount a 3-bay antenna 213.4 meters above ground level that will operate as an auxiliary with 35 kilowatts (horizontally & vertically). The power density for the facility was based on FM Model (V2.10b) by using the ERI or Jampro JBCP "Rototiller" (EPA) antenna. For the WJOX construction permit the antenna was assumed to be the ERI SHPX-12-AC-HW. For the proposed auxiliary facility, the power density was determined by using the following formula:

$(33.41 * \text{Total ERP in kW considering the elevation pattern tabulations}) / (\text{COR in meters} - 2 \text{ meter})^2$

<u>CALL</u>	<u>Service</u>	<u>Channel</u>	<u>Freq.</u>	<u>Polarization</u>	<u>Antenna Height* (AGL)</u>	<u>ERP (kW)</u>	<u>Relative Field Factor</u>	<u>Vertical Predicted Power Density (mW/cm²)</u>	<u>FCC Uncontrolled Limit (mW/cm²)</u>	<u>Percent of Uncontrolled Limit</u>
WJOX (lic)	FM	263	100.5	H&V	245	85.000	1.000	0.0044758	0.200	2.2379%
WJOX (aux)	FS	263	100.5	H&V	213.4	35.000	1.000	0.026166	0.200	13.0829%
WJOX (cp)	FM	263	100.5	H&V	275	93.000	1.000	0.0018849	0.200	0.9425%
Total Percentage of ANSI (uncontrolled) value =										16.2633%

* The antenna height indicated above is 2 meters less than the actual antenna height so that the predicted power density considers the 2 meter human height allowance.

WJOX's licensed facility will produce a power density of 4.48 $\mu\text{W}/\text{cm}^2$ at 54 meters from the base of the tower. At 2 meters from the base of the tower, the power density would be 2.89 $\mu\text{W}/\text{cm}^2$. The higher value is used for this study.

The WJOX auxiliary facility will produce a power density of 26.166 $\mu\text{W}/\text{cm}^2$ 2 meters from the base of the tower.

The WJOX construction permit facility will produce a power density of 4.4×10^{-9} $\mu\text{W}/\text{cm}^2$ 2 meters from the base of the tower. At a distance of 382 meters from the base of the tower, the power density will be 0.188 $\mu\text{W}/\text{cm}^2$. The higher value is used for this study.

Although all facilities will not be radiating simultaneously, they were considered to be so for this study (worst-case scenario). The results of the study demonstrate that the power density is 16.2633% of the limit for "uncontrolled" environments and 4.0658% of the limit for "controlled" environments.