W249BS Comprehensive Engineering Exhibit
April 2011

W249BS is seeking to relocation to a tower identified by ASR 1037652, utilizing a non-directional antenna. at a location 136 meters above ground level, with 250 watts radiated power.

The facility will be utilized as a "fill-in" translator for primary station WTKS(AM). The 60 dBu service contour of the proposed facility is within both a 2 mV/m contour and a 25 mile radius of this primary station, as demonstrated in Figure 1. The 60 dBu contour of the facility as proposed overlaps the existing licensed facility, as is required for filing a minor modification application, and is demonstrated in Figure 1. Attached as Figure 2 is an allocation spacing report wherein it can be seen that the proposed location is within the protected contour of 2nd adjacent facilities WAEV and WGCO. Demonstrated in Figure 3 the +40 dBu interference level contour to WGCO is the "limiting contour" and does not reach any locations off the support tower, nor does the 130 dBu interfering contour to WAEV, thus this proposal complies with "Living Way", a request for waiver as needed is hereby made. Figure 4 provides a tabulation of signal levels on the ground around the support tower.

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

The proposed antenna system is ERI LPX "Rototiller" 2-Bay, half-wave spaced array, located 136 meters above ground.. For purposes of this analysis the FM Model program has been set to calculate values for a "Rototiller" antenna element, operated with an effective radiated power of 0.250 Kilowatts in the horizontal and the vertical plane. At 2 meters above the surface, at 273 meters from the base of the tower, this proposal will contribute worst case, 0.08 microwatts per square centimeter, or 0.008 percent of the allowable ANSI limit for controlled exposure, and 0.04 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% of the applicable FCC exposure limit at all locations extending out from the base of the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5% of the applicable exposure limit. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.

Figure 1.

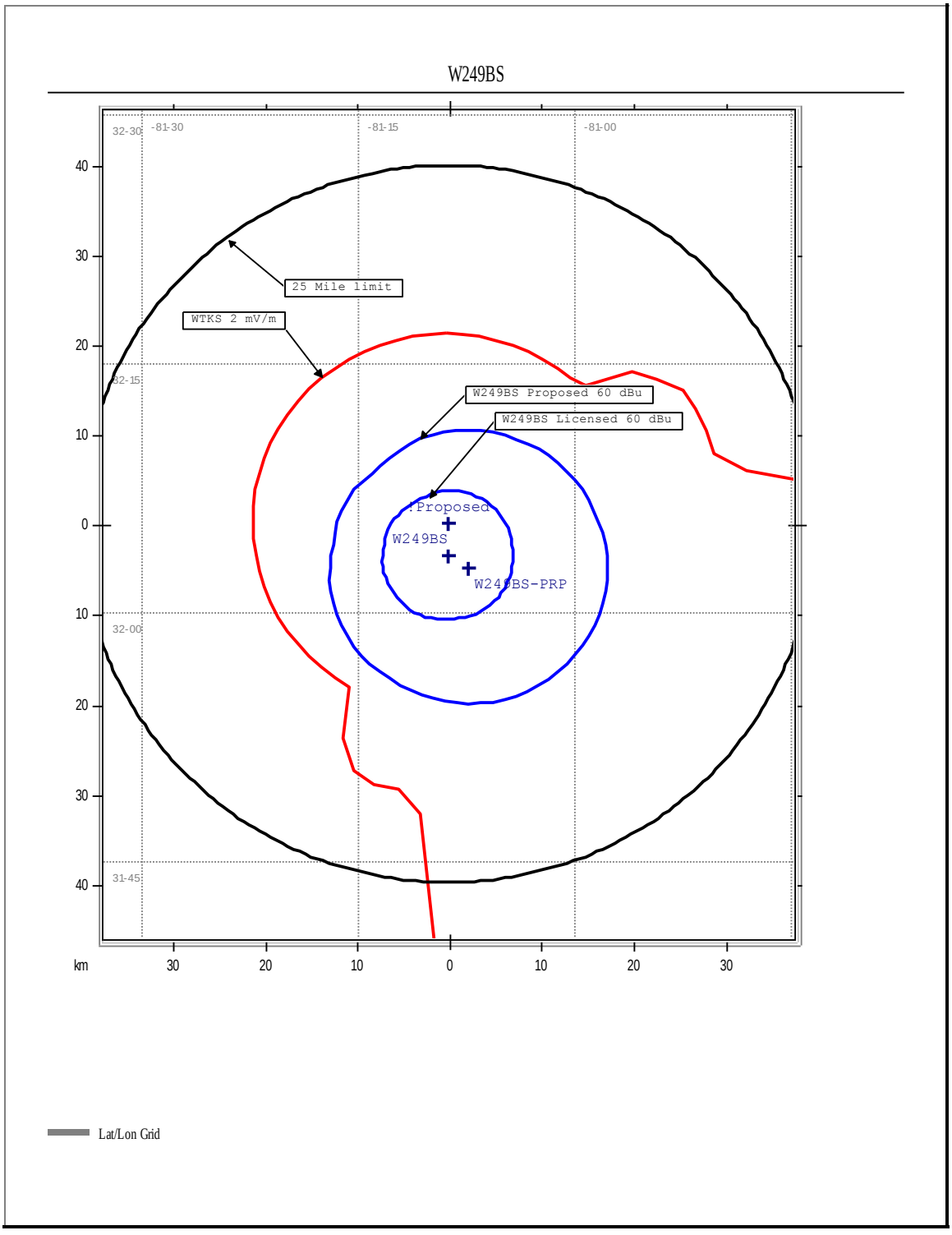
W249BS
32-30
-81-30
-81-15
-81-00
32-15
32-00
31-45
40
30
20
10
0
10
20
30
40
km
25 Mile limit
WTKS 2 mV/m
W249BS Proposed 60 dBu
W249BS Licensed 60 dBu
Proposed
W249BS
W249BS-PRP
Lat/Lon Grid

Figure 2. Spacing Study

Study for 250 Watts 136M AGL 32-02-42.4 N 81-07-21.0 W (NAD 27)								
Callsign	City	Freq	Chanl	ERP_w	Class	Status	Dist_km	Clr
W249BS	SAVANNAH	97.7	249	27	D	LIC	2.63	-71.23 dB
WAEV	SAVANNAH	97.3	247	100000	C0	LIC	20.62	-30.57 dB
WGCO	MIDWAY	98.3	252	100000	C1	LIC	52.99	-8.67 dB
WAEV	SAVANNAH	97.3	247	0	C	USE	20.49	21.69 dB
WIIZ	BLACKVILLE	97.9	250	50000	C2	LIC	121.15	26.71 dB
WYBB	FOLLY BEACH	98.1	251	50000	C2	LIC	121.95	27.19 dB
NEW	JAMES ISLAND	97.7	249	80	D	APP	133.26	29.86 dB
NEW	MONCKS CORNER	97.7	249	250	D	APP	167.08	32.18 dB
NEW	GOOSE CREEK	97.7	249	40	D	APP	142.82	34.82 dB
W248AH	BRUNSWICK	97.5	248	250	D	CP	100.64	34.58 dB

Figure 3.

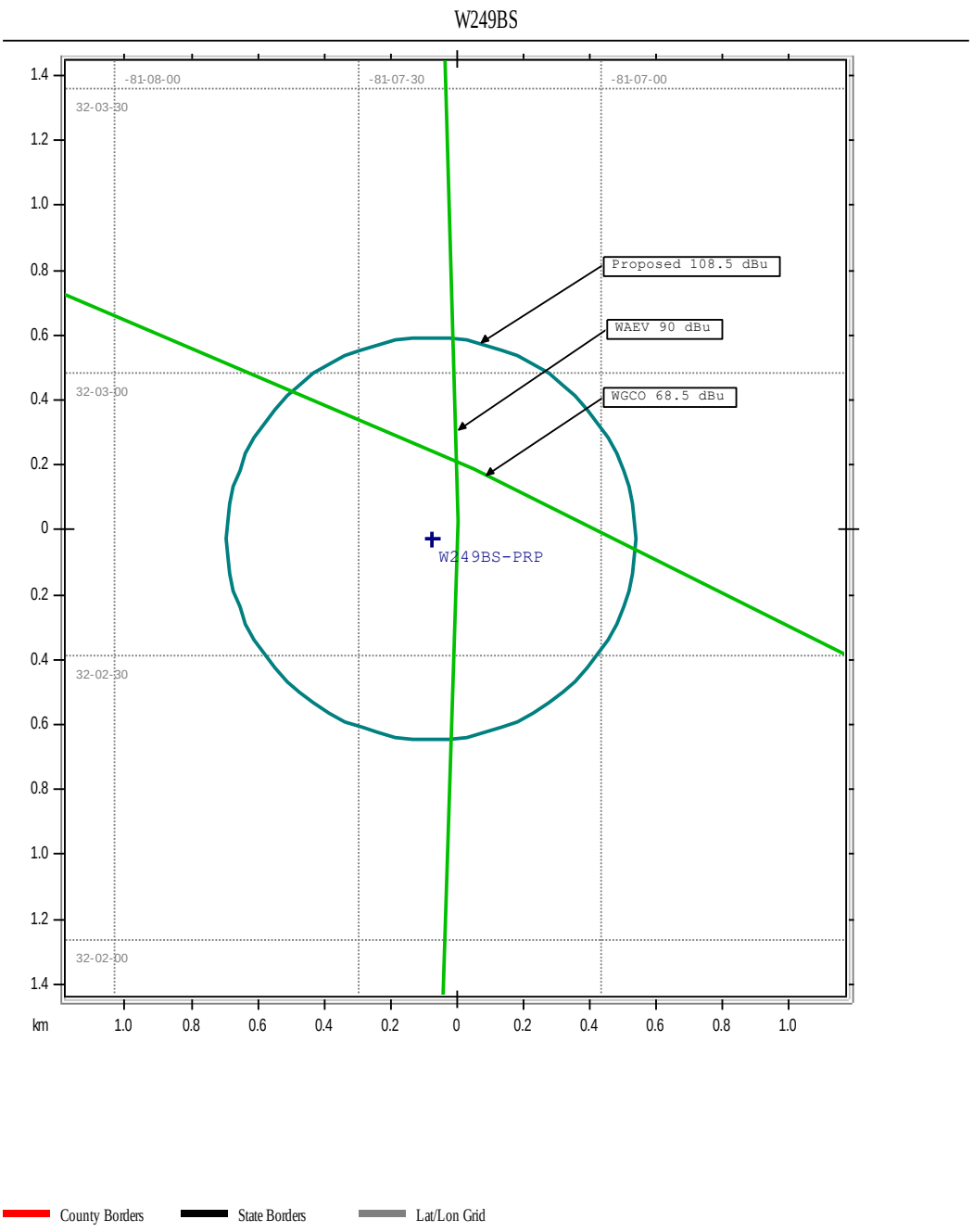
W249BS
-81-08-00
-81-07-30
-81-07-00
32-03-30
32-03-00
32-02-30
32-02-00
Proposed 108.5 dBu
WAEV 90 dBu
WGCO 68.5 dBu
W249BS-PRP
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
km
County Borders
State Borders
Lat/Lon Grid

Figure 4

Proposed Antenna:	ERI LPX	2 bay half wave
Proposed Power:	0.25	kW
Antenna Height AGL:	136	meters
Interference Contour:	108.5	dBu f(50:10)
Artificial Rcv Antenna Height:	2	meters

Fill in "yellow" cells

Distance (Free Space) Equation: =(10^((106.92-[desired dBu]+[ERP in dBk])/20))*1000

Field Strength (dBu) Equation "=106.92-(20*(LOG10[DistMeters]/1000)))+[ERPin dBk]

Depression Angle Below Horizon	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant. to Interf Contour	Distance from Ant. to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant. to Ground Level	Field Strength in dBu @ Ground Level
0°	1.000	0.250	-6.02	416.84 m	infinite	---	infinite	---
-5°	0.984	0.242	-6.16	410.17 m	1537.48 m	97.02 dBu	1560.43 m	96.89 dBu
-10°	0.938	0.220	-6.58	391.00 m	771.68 m	102.59 dBu	783.19 m	102.47 dBu
-15°	0.865	0.187	-7.28	360.57 m	517.74 m	105.36 dBu	525.46 m	105.23 dBu
-20°	0.772	0.149	-8.27	321.80 m	391.79 m	106.79 dBu	397.64 m	106.66 dBu
-25°	0.665	0.111	-9.56	277.20 m	317.07 m	107.33 dBu	321.80 m	107.20 dBu
-30°	0.553	0.076	-11.17	230.51 m	268.00 m	107.19 dBu	272.00 m	107.06 dBu
-35°	0.431	0.046	-13.33	179.66 m	233.62 m	106.22 dBu	237.11 m	106.09 dBu
-40°	0.339	0.029	-15.42	141.31 m	208.47 m	105.12 dBu	211.58 m	104.99 dBu
-45°	0.248	0.015	-18.13	103.38 m	189.50 m	103.24 dBu	192.33 m	103.11 dBu
-50°	0.172	0.007	-21.31	71.70 m	174.92 m	100.75 dBu	177.54 m	100.62 dBu
-55°	0.112	0.003	-25.04	46.69 m	163.58 m	97.61 dBu	166.03 m	97.48 dBu
-60°	0.068	0.001	-29.37	28.35 m	154.73 m	93.76 dBu	157.04 m	93.63 dBu
-65°	0.037	0.000	-34.66	15.42 m	147.85 m	88.87 dBu	150.06 m	88.74 dBu
-70°	0.018	0.000	-40.92	7.50 m	142.60 m	82.92 dBu	144.73 m	82.79 dBu
-75°	0.007	0.000	-49.12	2.92 m	138.73 m	74.96 dBu	140.80 m	74.83 dBu
-80°	0.002	0.000	-60.00	0.83 m	136.07 m	64.24 dBu	138.10 m	64.12 dBu
-85°	0.001	0.000	-66.02	0.42 m	134.51 m	58.32 dBu	136.52 m	58.20 dBu
-90°	0.000	0.000	-86.02	0.04 m	134.00 m	38.36 dBu	136.00 m	38.23 dBu

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