

February 2014
FM Translator K242CC
Austin, TX Channel 240D
Allocation Study

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. Since the proposed facility will operate with an ERP of less than 100 watts, there are no spacing requirements to stations which are 53 or 54 channels removed from the proposed operation.

The attached allocation study maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204. Protection of KKMJ-FM is discussed in detail below.

KKMJ-FM 238C1 Austin

The proposed translator transmitter site is located within the 60 dBu protected contour of second-adjacent channel station KKMJ-FM 238C1 Austin. The proposed site is co-located with the KKMJ-FM transmitter site, so these calculations assume a distance of 0.1 km between the two sites. Given the KKMJ-FM antenna's 50 kW ERP, KKMJ-FM places a 143.9 dBu contour at the translator transmitter site. The corresponding interfering contour from the translator is $143.9 + 40 = 183.9$ dBu. Based on a Free Space calculation, the 183.9 dBu contour from the proposed facility extends less than 0.1 meters from the antenna and does not reach ground level. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KKMJ-FM.

SEARCH PARAMETERS

FM Database Date: 140210

Channel: 240A 95.9 MHz
 Latitude: 30 19 23
 Longitude: 97 47 58
 Safety Zone: 50 km
 Job Title: AUSTIN 240

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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KKMJaux LIC	AUSTIN TX	BLH-971002KG	238C1 95.5	30.000 154.0	30-19-23 097-47-58	0.0	0.00 0.00	0 AUX
KKMJ-FM LIC	AUSTIN TX	BLH-980717KH	238C1 95.5	50.000 398.0	30-19-23 097-47-58	0.0	0.00 -75.00	75 SHORT
KKMJaux LIC	AUSTIN TX	BLH-980407KE	238C1 95.5	4.800 398.0	30-19-23 097-47-58	0.0	0.00 0.00	0 AUX
K239BZ CP	SEGUIN TX	BNPFT-30826ACU	239D 95.7	0.250 61.0	29-33-42 097-56-37	189.4	85.54 0.00	0 TRANS
KBGO LIC	WACO TX	BLH-980717KG	239C2 95.7	24.000 154.0	31-30-51 097-11-43	23.4 SS	144.13 38.13	106 CLEAR
KBGOaux LIC	WACO TX	BXLH-50127AFF	239C2 95.7	0.920 134.0	31-30-51 097-11-44	23.4	144.12 0.00	0 AUX
KMPN CP	BURNET TX	BNPED-00226ACK	240A 95.9	1.750 182.0	30-52-24 098-13-58	326.0 SS	73.81 -41.19	115 SHORT
VAC	GIDDINGS TX	RM-9847	240A 95.9	0.000 0.0	30-15-33 097-01-33	95.3	74.76 -40.24	115 SHORT
KHMC LIC	GOLIAD TX	BLH-990125KD	240C3 95.9	25.000 98.0	28-40-57 097-18-50	165.4 SS	187.84 45.84	142 CLEAR
NEW CP	AUSTIN TX	BNPL-31115AEJ	241L1 96.1	0.100 19.8	30-33-21 097-32-34	43.5	35.69 -20.31	56 SHORT
K241BO LIC	BELTON TX	BLFT-81217ABQ	241D 96.1	0.065 167.0	31-02-18 097-28-27	21.3	85.20 0.00	0 TRANS
KAGGaux LIC	MADISONVILLE TX	BXLH-81027ABA	241C2 96.1	0.450 40.0	30-39-09 096-20-17	75.0	144.99 0.00	0 AUX
KAGGaux LIC	MADISONVILLE TX	BXLH-91028AAZ	241C2 96.1	1.000 37.5	30-39-09 096-20-17	75.0	144.99 0.00	0 AUX

SEARCH PARAMETERS

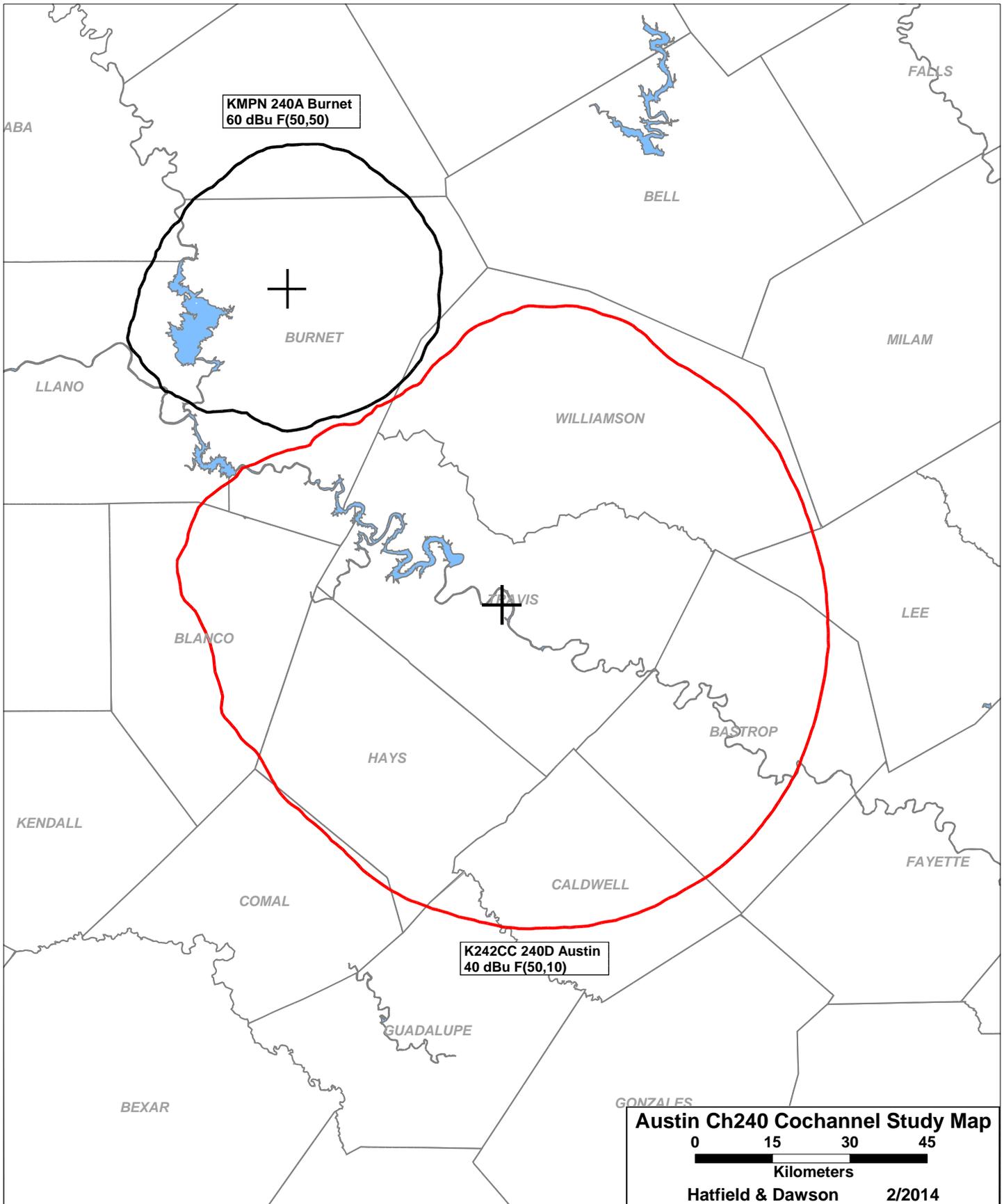
FM Database Date: 140210

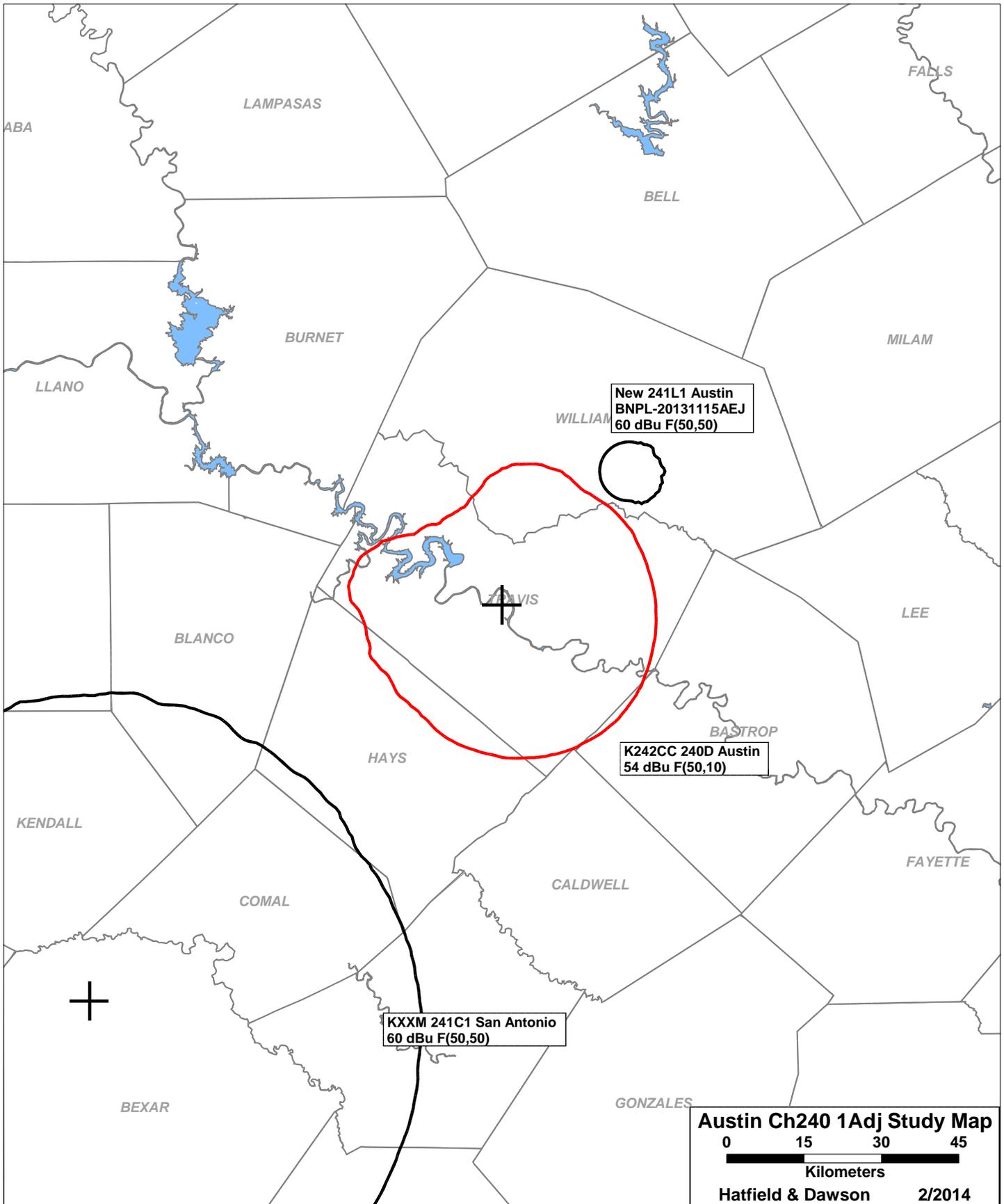
Channel: 240A 95.9 MHz
 Latitude: 30 19 23
 Longitude: 97 47 58
 Safety Zone: 50 km
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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KXXMaux LIC	SAN ANTONIO TX	BXLH-00305AAX	241C1 96.1	1.000 155.0	29-38-01 098-37-54	226.5	110.87 0.00	0 AUX
KXXMaux LIC	SAN ANTONIO TX	BXLH-80925AEW	241C1 96.1	1.000 155.0	29-38-00 098-37-50	226.4	110.81 0.00	0 AUX
KXXM LIC	SAN ANTONIO TX	BLH-00510AVZ	241C1 96.1	100.000 182.0	29-38-01 098-37-54	226.5	110.87 -22.13	133 SHORT
K242CC LIC	AUSTIN TX	BLFT-30725AAW	242D 96.3	0.250 461.0	30-19-23 097-47-58	0.0	0.00 0.00	0 TRANS
NEW CP	GIDDINGS TX	BNPH-20530AAD	242A 96.3	6.000 100.0	30-14-45 097-01-49	96.4	74.50 43.50	31 CLEAR
ADD	LAGO VISTA TX	RM-11374	243C2 96.5	0.000 0.0	30-27-18 097-53-03	331.0	16.74 -38.26	55 SHORT
K293BF LIC	COMANCHE TRAIL TX	BLFT-01012ABY	293D 106.5	0.099 DA 402.0	30-19-23 097-47-58	0.0	0.00 0.00	0 TRANS
KXPW-LP LIC	GEORGETOWN TX	BLL-70305ADA	294L1 106.7	0.012 86.1	30-35-30 097-40-44	21.1	31.95 25.95	6 CLEAR

==== END OF FM SPACING STUDY FOR CHANNEL 240 =====





New 241L1 Austin
BNPL-20131115AEJ
60 dBu F(50,50)

K242CC 240D Austin
54 dBu F(50,10)

KXXM 241C1 San Antonio
60 dBu F(50,50)

Austin Ch240 1Adj Study Map



Hatfield & Dawson 2/2014

February 2014
FM Translator K242CC
Austin, TX Channel 240D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 240D (95.9 MHz) with a maximum lobe effective radiated power of 99 watts. Operation is proposed with a directional antenna to be side-mounted on an existing tower with FCC Antenna Structure Registration Number 1013180.

RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation of K242CC will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Worst-case calculations of the power density produced by the K242CC antenna system have been made assuming that the antenna will radiate 100% straight down to a point 2 meters above ground level (362 meters below the antenna). Under this worst-case assumption, the highest calculated ground level power density from K242CC occurs at the base of the antenna support structure. At

this point the power density is calculated to be $0.1 \mu\text{W}/\text{cm}^2$, which is 0.01% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 0.05% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of K242CC alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.