

TECHNICAL SUMMARY
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
LMS FILE NO. 0000120844
FM TRANSLATOR STATION K242DE
AUSTIN, TEXAS
CHANNEL 242 (96.3 MHZ) 0.25 KW (ND)

1. **Application Purpose:** It is proposed to modify the K242DE construction permit (LMS File No. 0000120844) to increase antenna height and change from a directional antenna (DA) to a nondirectional (ND) antenna operation.

2. **Contingent Applications:** This application is contingent on applications being concurrently filed by co-owned FM stations KGID, channel 242A, Giddling, TX and KTHER, channel 242C3, Llano, TX.

3. **Fill-in Translator Coverage & Minor Change Compliance:** The proposal will be a fill-in translator for AM station KTSN on 1490 kHz at Austin, Texas (Facility ID 41211). Figure 1 is a map demonstrating that the proposed 60 dBu contour is within a 25 mile circle from the KTSN transmitter site as required for fill-in compliance. In addition, the proposal will comply with the FCC's minor change rules as the proposed 60 dBu contour overlaps the licensed 60 dBu contour as depicted on Figure 1.

4. **Section 74.1204 compliance:** Figure 2 is an allocation study for channel 242 based on Section 74.1204. Figure 2 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (465 meters) and ERP (0.25 kW) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. Figure 3, Sheet 1-3, demonstrates that the proposal complies with the contour overlap provisions of Section 73.1204 of the FCC rules, except with respect to stations K240EL and KHFI-FM discussed below.

It is noted that the proposed operation also does not comply with the contour overlap provisions of Section 73.1204 with respect to the licensed CP operations of KGID and the licensed operation of KTHER. However, as noted above, KGID and KTHER are concurrently filing applications which will eliminate the contour overlap as shown on Figure 3.

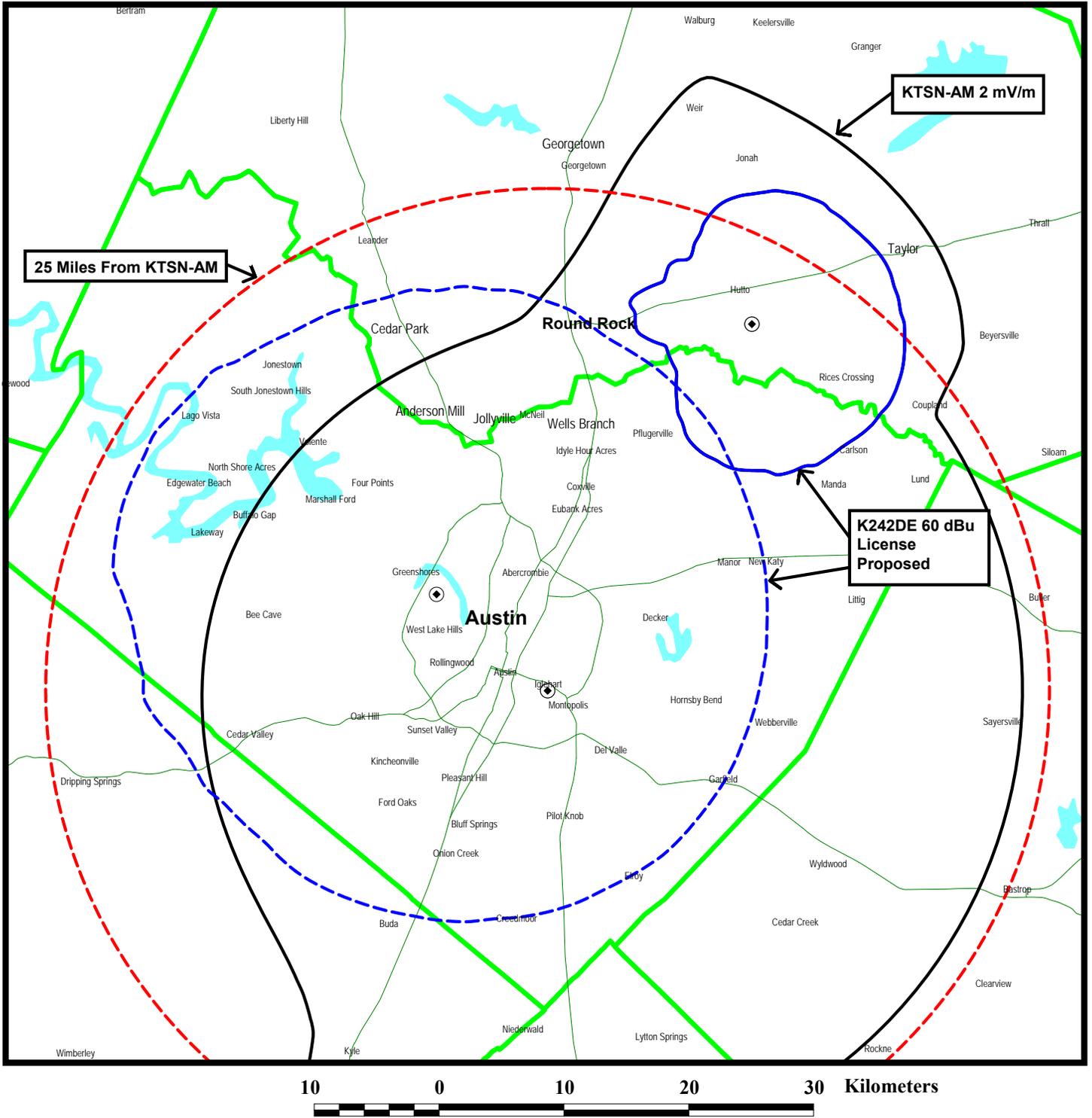
The proposal does not comply with the contour overlap provisions of Section 73.1204 of the FCC rules with respect to second lower adjacent channel station K240EL (Ch. 240/95.9 MHz, Austin, Texas) and second upper adjacent channel station KHFI-FM (Ch. 244C1/96.7 MHz, Georgetown, Texas). However, based on the undesired-to-desired (U/D) signal strength interference ratio methodology, which is permitted by the FCC (per Living Way Ministries, Inc., 17 FCC Rcd 17054, 17056, 2002), it has been determined that no actual interference

would occur due to lack of population under Section 74.1204(d). Specifically, K242DE, operating with a ND antenna maximum ERP of 0.25 kW, will be co-located with K240EL which operates with a DA maximum ERP of 0.099 kW. Furthermore, the maximum ERP for the proposed K242DE ND operation is 250 Watts (23.98 dBW) whereas the DA pattern minimum for the K240EL DA is 33 Watts (15.18 dBW). Therefore, the maximum difference in ERP between the proposed K242DE DA and the K240EL DA would only be 8.8 dB, which is significantly less than the 40 dB U/D ratio contained in Section 74.1204 of the FCC's rules. Therefore, it is apparent that there would be no location where the proposed K242DE operation would cause predicted interference to K240EL. In addition, the calculated KHFI-FM f(50,50) field strength at the proposed site is 143 dBu. Using the 40 dB U/D ratio contained in Section 74.1204 of the FCC rules, the proposed f(50,10) interfering signal is 183 dBu. The proposed antenna will be located 363.6 meters (1193 feet) above ground level on the tower. Assuming free-space propagation and a vertical plane relative field of 1.0 (worst case assumption), the interfering 183 dBu signal will extend only 0.1 meter from the transmitting antenna. Thus, the proposed K242DE interfering signal to KHFI-FM will not reach ground level and, therefore, will contain no population. Therefore, the proposal complies with the lack of population criteria under Section 74.1204(d).

5. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the existing ERI master antenna is located 331 meters above ground level. The total ERP is 0.5 kW (horizontal and vertical polarization). Presuming a worst-case vertical plane relative field of 1.0 and an antenna height of 363.6 meters above ground level, the maximum power density at 2 meters above ground level at the base of the tower will be 0.13 uw/cm^2 which is only 0.07% of the FCC's recommended limit of 200 uw/cm^2 for FM frequencies for an uncontrolled environment. Therefore, it is believed that the proposed operation is in full compliance with the FCC's requirements with regard to RFR exposure.

The transmitting site will be appropriately fenced and marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

Figure 1



AM FILL-IN COMPLIANCE MAP

**FM TRANSLATOR STATION K242DE
AUSTIN, TEXAS
CH 242 (96.3 MHz) 0.25 KW (ND)**

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

FM Contour Study LMS

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



Channel: 242 Coordinates: 030-19-23.8 097-47-59.5 (NAD 83) ERP: 0.25 kW Max. HAAT: 465 m Considering Only Interference Caused

Comment: Proposed K242DE

Call sign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
K240EL	240	FX	L2C	95.9	AUSTIN	TX	US	C	30-19-23.7	0.01	21.94	-21.93
156299	BLANK	BLFT-20170324A	D	DRI			0.099		097-47-59	103.05	SHORT	/1
K240EL 60.0 dBu desired distance: 20.8 km Proposed 100.0 dBu undesired distance: 1.1 km												
K241DA	241	FX	L2C	96.1	AUSTIN	TX	US	C	30-31-04.7	33.25	56.24	-22.99
201312	BLANK	BLFT-20180706A	D	NDI			0.25		097-32-12	49.31	SHORT	/2
K241DA 60.0 dBu desired distance: 12.9 km Proposed 54.0 dBu undesired distance: 43.3 km												
KXXM	241	FM	L2C	96.1	SAN ANTONIO	TX	US	C	29-38-01.8	110.86	112.13	-1.27
28668	BLANK	BLH-20100510A\	C1	NDI			100	182	098-37-55.1	226.48	SHORT	/3
KXXM 60.0 dBu desired distance: 68.8 km Proposed 54.0 dBu undesired distance: 43.3 km												
K241DA	242	FX	MOD	96.3	AUSTIN	TX	US	C	30-19-23.8	0	114.9	-114.9
201312	BLANK	0000120844	D	DRI			0.25		097-47-59.5	0	SHORT	/2
K241DA 60.0 dBu desired distance: 31.7 km Proposed 40.0 dBu undesired distance: 83.2 km												
K241DA	242	FX	MOD	96.3	AUSTIN	TX	US	C	30-31-04.7	33.25	95.69	-62.44
201312	BLANK	BPFT-20190711A	D	DRI			0.215		097-32-12	49.31	SHORT	/2
K241DA 60.0 dBu desired distance: 12.5 km Proposed 40.0 dBu undesired distance: 83.2 km												
KGID	242	FM	L2C	96.3	GIDDINGS	TX	US	C	30-11-38.9	75.27	111.7	-36.43
190454	BLANK	BLH-20170130A\	A	NDI			4	101	097-01-55.2	100.82	SHORT	/4
KGID 60.0 dBu desired distance: 28.5 km Proposed 40.0 dBu undesired distance: 83.2 km												
KGID	242	FM	MOD	96.3	GIDDINGS	TX	US	C	30-11-38.9	75.27	111.52	-36.25
190454	BLANK	0000125589	A	DRI			6	100	097-01-55.2	100.82	SHORT	/4
KGID 60.0 dBu desired distance: 28.3 km Proposed 40.0 dBu undesired distance: 83.2 km												
KTHE	242	FM	L2C	96.3	LLANO	TX	US	C	30-58-50.6	112.01	129.09	-17.08
198631	BLANK	BLH-20190604A\	C3	NDI			25	94	098-41-14.1	310.96	SHORT	/4
KTHE 60.0 dBu desired distance: 45.9 km Proposed 40.0 dBu undesired distance: 83.2 km												
KJHV-LP	242	FL	L2C	96.3	KILLEEN	TX	US	C	31-07-24.6	89.31	88.79	0.52
135336	BLANK	BLL-20050204AA	LP1	NDI			0.049	42	097-41-31	6.59	CLOSE	
KJHV-LP 60.0 dBu desired distance: 5.6 km Proposed 40.0 dBu undesired distance: 83.2 km												
KHFI-FM	244	FM	L2C	96.7	GEORGETOWN	TX	US	C	30-19-20.7	0.15	77.69	-77.54
11948	BLANK	BLH-19891227KE	C1	NDI			100	290	097-48-04	231.41	SHORT	/1
KHFI-FM 60.0 dBu desired distance: 76.6 km Proposed 100.0 dBu undesired distance: 1.1 km												



FM Contour Study LMS

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

Channel: 242 **Coordinates:** 030-19-23.8 097-47-59.5 (NAD 83) **ERP:** 0.25 kW **Max. HAAT:** 465 m **Considering Only Interference Caused**

Comment: Proposed K242DE

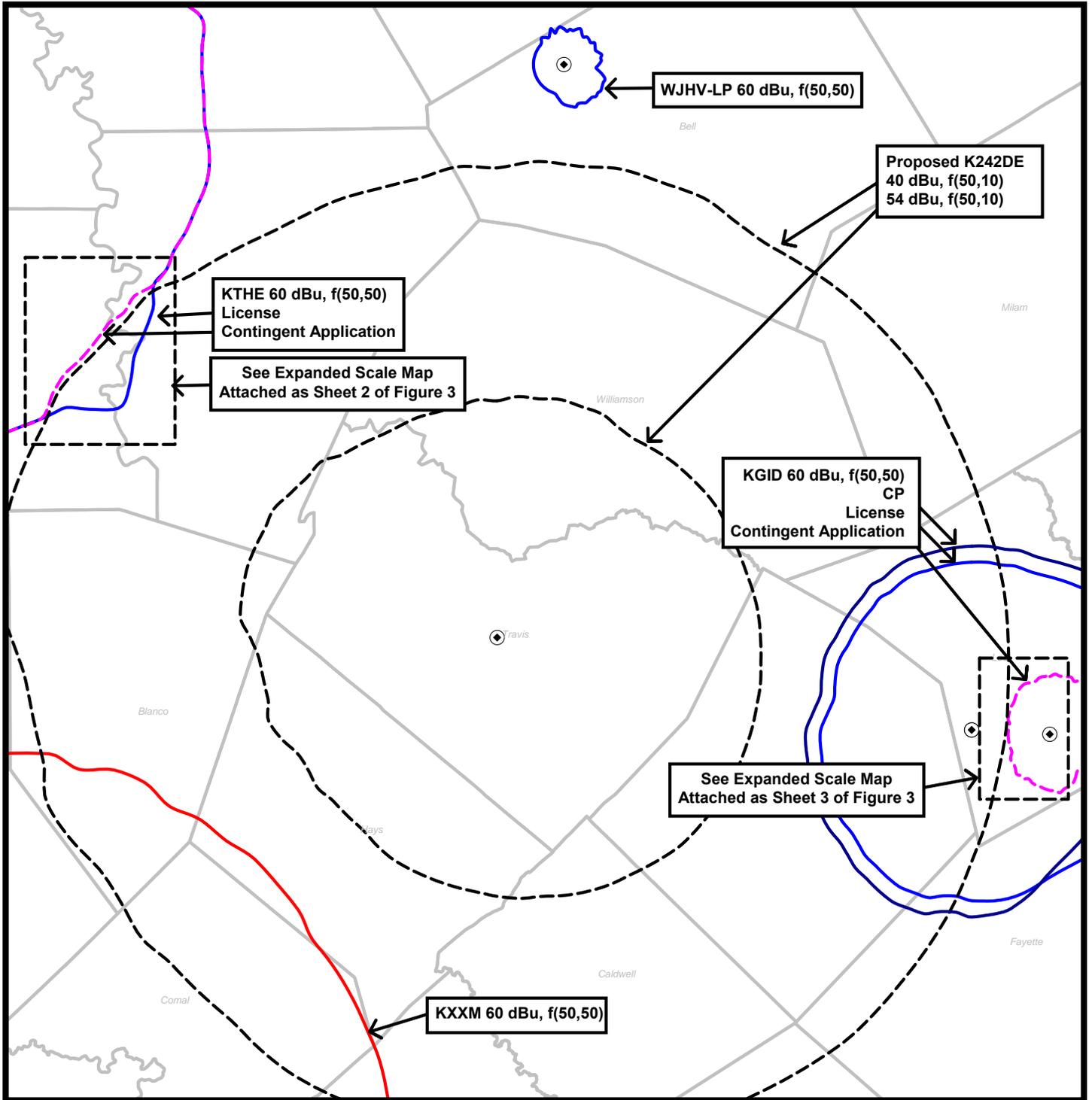
Callsign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
KLZT	296	FM	MOD	107.1	BASTROP	TX	US	C	30-07-17.8	30.8	15	15.8
9973	BLANK	BMLH-20140326	C2	NDI			49	152	097-34-47.5	136.64	CLOSE	

/1 There will be overlap normally prohibited by Section 74.1204(a). However, based on the U/D signal strength ratio method, which is permitted by the FCC per Living Way Ministries, it has been determined that no actual interference would occur due to lack of population under Section 74.1204(d). See Technical Narrative.

/2 Current KGID authorization.

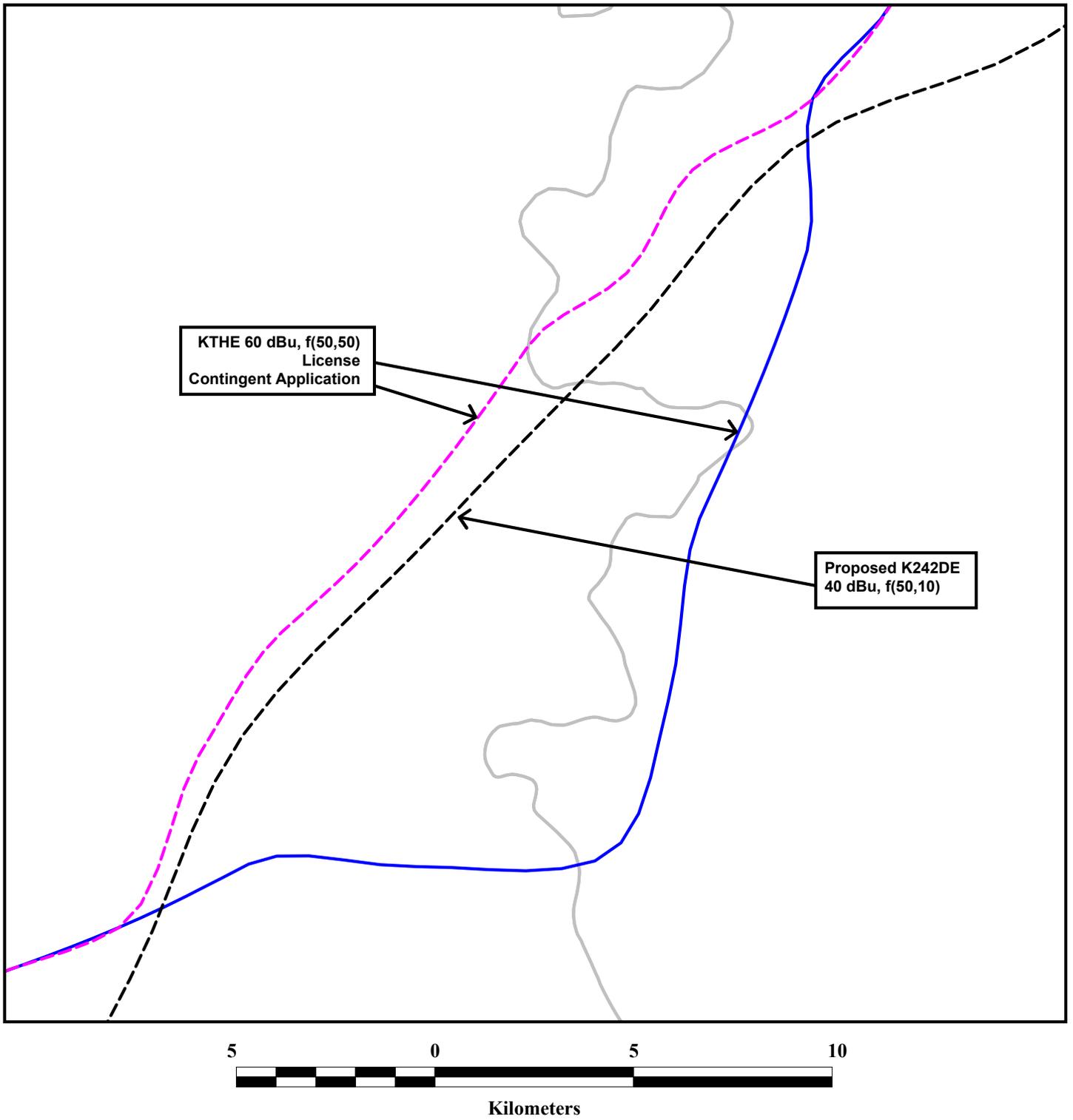
/3 Proposal complies with the contour overlap provisions of Section 74.1204(a). See Figure 3, Sheet 1.

/4 The proposed operation also does not comply with the contour overlap provisions of Section 73.1204 with respect to the licensed CP operations of KGID and the licensed operation of KTHER. However, as noted in the Technical Narrative, KGID and KTHER are concurrently filing applications which will eliminate the contour overlap as shown on Figure 3, Sheet 2 and 3.



COMPLIANCE WITH SECTION 74.1204
FM TRANSLATOR STATION K242DE
AUSTIN, TEXAS
CH 242 (96.3 MHz) 0.25 KW (ND)

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**COMPLIANCE WITH SECTION 74.1204
[Expanded Scale Map]**

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