

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY CHRISTIAN CENTER OF SANTA ANA, INC., licensee of digital Television Station KTBN-TV, Channel 33 in Santa Ana, California, in support of this amendment to its pending Application for Construction Permit to specify a new transmitting antenna (LMS-0000144774). It is proposed herein to specify a slightly different antenna azimuth pattern in order to eliminate additional predicted interference to a Mexican television facility. No change in transmitter site, effective radiated power or antenna height is specified herein.

It is now proposed to mount an RFS SAA28-KTBN-E400-ES5R-33 elliptically-polarized directional antenna at the 39-meter level of the existing 61-meter communications tower on which the licensed KTBN-TV antenna is located in the Mt. Wilson antenna farm. The proposed effective radiated power for the facility is 1000 kW in the horizontal plane and 300 kW in the vertical plane.

It is important to note that the proposed effective radiated power in the horizontal plane is identical to that of the presently licensed KTBN-TV facility. While this facility exceeds the FCC's maximum power/height limitations for UHF digital television stations that are located in Zone 2 of the United States, the Commission allows stations to exceed these limits as long as the coverage area of the station does not exceed the coverage area of the largest station in the same market. In this case, the largest station in the Los Angeles, California, television market is KBEH-DT, Channel 4 in Garden Grove, California. The total area within the licensed KBEH-DT predicted 28 dBu service contour is 65,413 km². The area within the KTBN-TV facility proposed

EXHIBIT A

herein is only 49,207 km². Therefore, this proposal meets the Commission's Rules with regard to the Largest Station in the Market exception to the power/height limitations.

Exhibit B is a map upon which the newly proposed predicted service contours are plotted. Antenna elevation and azimuth pattern data for the proposed RFS SAA28-KTBN-E400-ES5R-33 antenna are provided in Exhibit C.

Included as Exhibit D, is a summary report from a TVStudy interference analysis for the proposed facility. Our study employed a cell size of 1.0 kilometer and an increment spacing of 0.1 kilometer. The results indicate that the proposed KTBN-TV facility meets the Commission's interference requirements to all full-power and low-power co-channel and adjacent-channel television facilities. In addition, the facility proposed herein does not cause any additional interference to XHCTTI-DT, Channel 33 in Tijuana, Mexico, greater than that from licensed KTBN-TV (BLCDT-20091019ABG).

A detailed power density calculation is attached hereto as Exhibit E.

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, due to the diminutive height of the existing tower (61 meters) and its proximity to the nearest airport runway, FCC Antenna Structure Registration is not required. This conclusion is supported by the Commission's TOWAIR software.

EXHIBIT A

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher". The signature is written in a cursive style with a large initial "K" and a distinct "F" at the end.

KEVIN T. FISHER

June 16, 2021

CONTOUR POPULATION
2018 U.S. CENSUS ESTIMATE
CITY-GRADE (48 DBU) : 18,170,907 (6,212,945 HH)
NOISE-LIMITED : 18,849,377 (6,491,328 HH)

Smith and Fisher, LLC

**NOISE-LIMITED
 FCC CONTOUR**

**CITY-GRADE
 FCC CONTOUR**

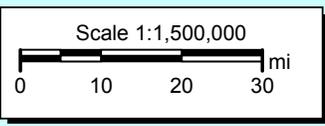
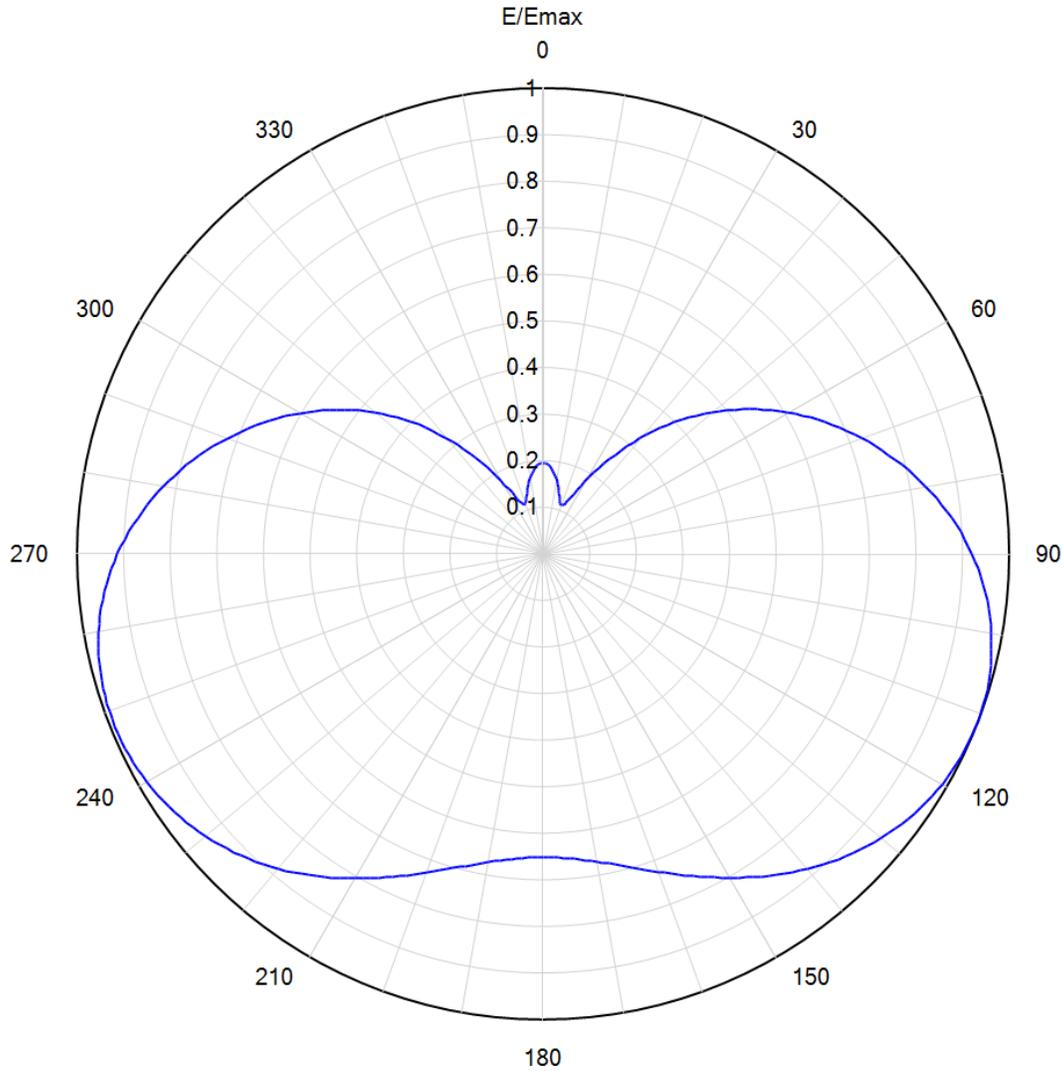


EXHIBIT B
PREDICTED SERVICE CONTOURS
PROPOSED KTBN-TV
CH. 33 - SANTA ANA, CALIFORNIA
[AMENDMENT TO LMS-000144774]



EXHIBIT C

Azimuth Pattern



Model:	SAA28-KTBN-E400-ES5R-33	Polarization:	<u>Horizontal</u>
Location:	Santa Ana, CA	Frequency:	587.00 MHz
Customer:	Trinity Broadcasting Network	Directivity:	1.9 (2.89 dB)
Date:	June 15, 2021	Elevation Angle:	1.00 degrees
Rotation Angle:	180 degrees	Horizontal Unit Pattern:	
Note: Pattern Tolerance +/-5% of Emax		File =	KTBN-HRP-W-SUPPRESSION.pat



Model: **SAA28-KTBN-E400-ES5R-33**
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 Customer: **Trinity Broadcasting Network**
 Date: **June 15, 2021**

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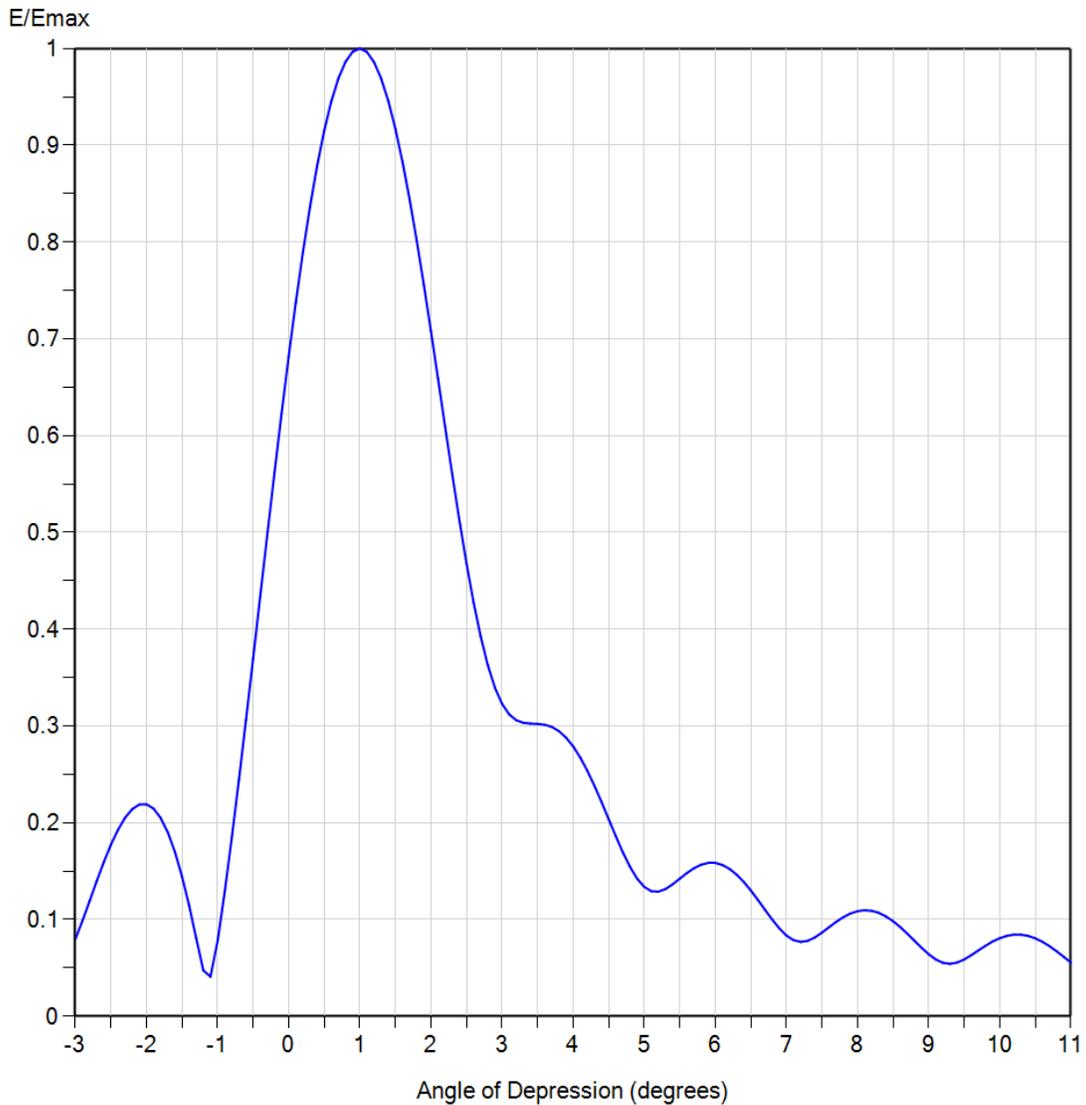
TABULATED AZIMUTH PATTERN

Angl	Field														
0	0.194	45	0.399	90	0.920	135	0.918	180	0.652	225	0.916	270	0.913	315	0.400
1	0.194	46	0.414	91	0.927	136	0.912	181	0.652	226	0.922	271	0.906	316	0.386
2	0.193	47	0.429	92	0.934	137	0.905	182	0.653	227	0.928	272	0.899	317	0.371
3	0.191	48	0.444	93	0.941	138	0.898	183	0.654	228	0.934	273	0.891	318	0.356
4	0.189	49	0.458	94	0.947	139	0.890	184	0.655	229	0.939	274	0.883	319	0.341
5	0.186	50	0.472	95	0.953	140	0.883	185	0.657	230	0.944	275	0.874	320	0.326
6	0.183	51	0.487	96	0.958	141	0.875	186	0.659	231	0.949	276	0.866	321	0.311
7	0.179	52	0.501	97	0.963	142	0.868	187	0.662	232	0.954	277	0.857	322	0.296
8	0.174	53	0.514	98	0.968	143	0.860	188	0.665	233	0.958	278	0.847	323	0.281
9	0.169	54	0.528	99	0.973	144	0.852	189	0.669	234	0.962	279	0.838	324	0.266
10	0.164	55	0.541	100	0.977	145	0.844	190	0.672	235	0.966	280	0.828	325	0.251
11	0.158	56	0.555	101	0.981	146	0.836	191	0.677	236	0.969	281	0.819	326	0.236
12	0.152	57	0.568	102	0.984	147	0.828	192	0.681	237	0.973	282	0.809	327	0.222
13	0.146	58	0.581	103	0.987	148	0.820	193	0.686	238	0.976	283	0.798	328	0.208
14	0.139	59	0.594	104	0.990	149	0.812	194	0.691	239	0.979	284	0.788	329	0.195
15	0.133	60	0.606	105	0.992	150	0.803	195	0.697	240	0.981	285	0.777	330	0.182
16	0.127	61	0.619	106	0.995	151	0.795	196	0.702	241	0.983	286	0.767	331	0.169
17	0.122	62	0.631	107	0.996	152	0.787	197	0.709	242	0.985	287	0.756	332	0.158
18	0.117	63	0.644	108	0.998	153	0.779	198	0.715	243	0.987	288	0.745	333	0.147
19	0.114	64	0.656	109	0.999	154	0.771	199	0.722	244	0.988	289	0.734	334	0.138
20	0.112	65	0.668	110	1.000	155	0.764	200	0.728	245	0.989	290	0.722	335	0.130
21	0.111	66	0.680	111	1.000	156	0.756	201	0.736	246	0.990	291	0.711	336	0.123
22	0.112	67	0.692	112	1.000	157	0.748	202	0.743	247	0.991	292	0.700	337	0.118
23	0.115	68	0.703	113	1.000	158	0.741	203	0.750	248	0.991	293	0.688	338	0.115
24	0.120	69	0.715	114	0.999	159	0.734	204	0.758	249	0.991	294	0.676	339	0.114
25	0.126	70	0.727	115	0.998	160	0.727	205	0.766	250	0.990	295	0.664	340	0.114
26	0.134	71	0.738	116	0.997	161	0.720	206	0.773	251	0.989	296	0.653	341	0.116
27	0.144	72	0.749	117	0.996	162	0.714	207	0.781	252	0.988	297	0.640	342	0.119
28	0.154	73	0.760	118	0.994	163	0.707	208	0.789	253	0.987	298	0.628	343	0.123
29	0.166	74	0.771	119	0.992	164	0.701	209	0.797	254	0.985	299	0.616	344	0.128
30	0.178	75	0.782	120	0.989	165	0.696	210	0.806	255	0.983	300	0.604	345	0.134
31	0.191	76	0.793	121	0.986	166	0.690	211	0.814	256	0.981	301	0.591	346	0.140
32	0.205	77	0.803	122	0.983	167	0.685	212	0.822	257	0.978	302	0.578	347	0.146
33	0.219	78	0.814	123	0.980	168	0.680	213	0.830	258	0.975	303	0.566	348	0.152
34	0.233	79	0.824	124	0.976	169	0.676	214	0.838	259	0.972	304	0.553	349	0.158
35	0.248	80	0.834	125	0.972	170	0.672	215	0.845	260	0.968	305	0.540	350	0.164
36	0.263	81	0.843	126	0.968	171	0.668	216	0.853	261	0.964	306	0.526	351	0.169
37	0.278	82	0.853	127	0.964	172	0.665	217	0.861	262	0.960	307	0.513	352	0.174
38	0.293	83	0.862	128	0.959	173	0.662	218	0.868	263	0.955	308	0.499	353	0.179
39	0.308	84	0.871	129	0.954	174	0.659	219	0.876	264	0.950	309	0.486	354	0.183
40	0.324	85	0.880	130	0.948	175	0.657	220	0.883	265	0.945	310	0.472	355	0.186
41	0.339	86	0.889	131	0.943	176	0.655	221	0.890	266	0.939	311	0.458	356	0.189
42	0.354	87	0.897	132	0.937	177	0.654	222	0.897	267	0.933	312	0.444	357	0.191
43	0.369	88	0.905	133	0.931	178	0.653	223	0.904	268	0.927	313	0.429	358	0.193
44	0.384	89	0.913	134	0.925	179	0.652	224	0.910	269	0.920	314	0.415	359	0.194



EXHIBIT C

Elevation Pattern

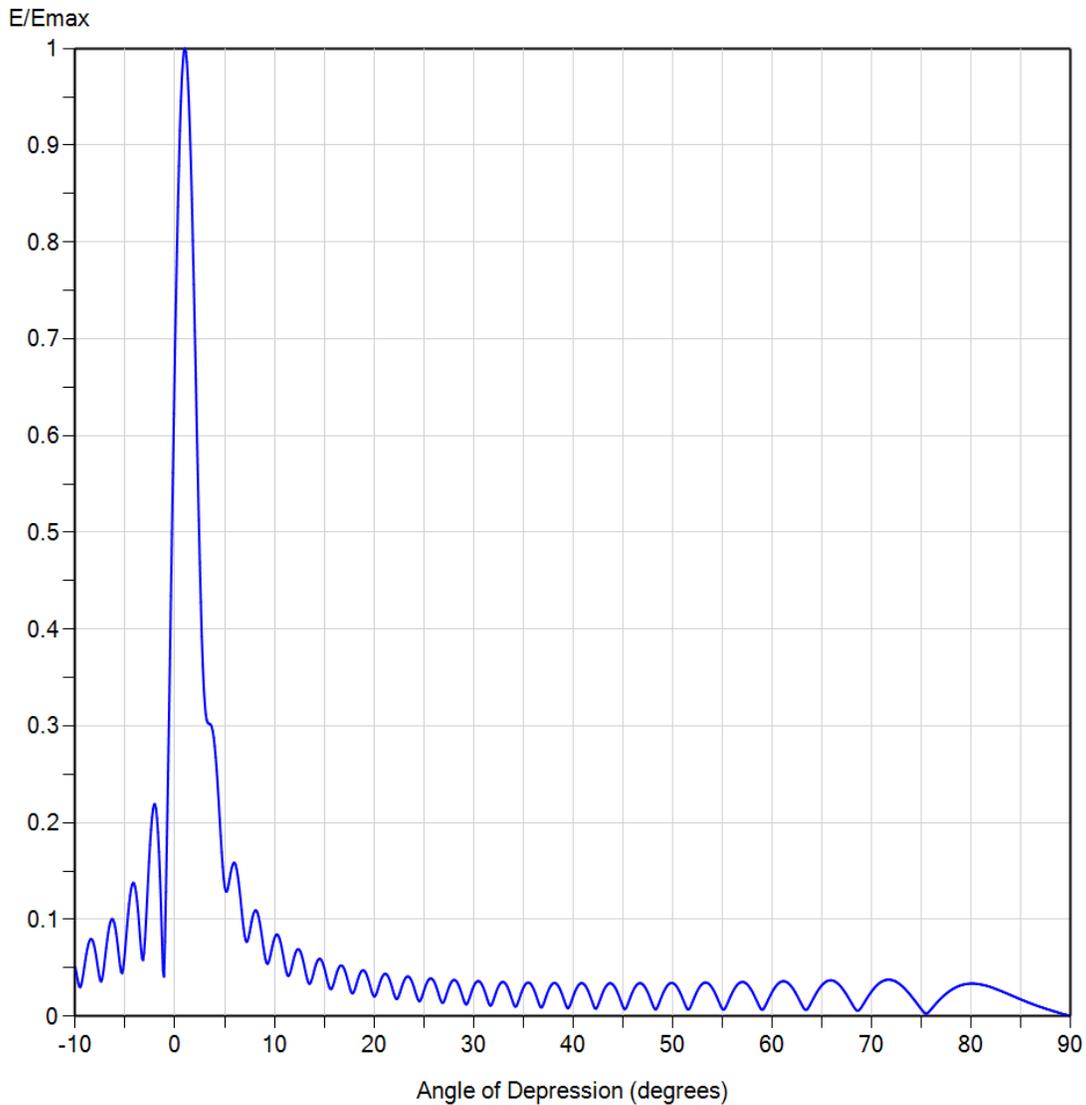


Model:	SAA28-KTBN-E400-ES5R-33	Frequency:	587.00 MHz
Polarization:	<u>Horizontal</u>	Directivity (Main Lobe):	28.8 (14.60 dBd)
Location:	Santa Ana, CA	Directivity (At Horizon):	13.4 (11.27 dBd)
Customer:	Trinity Broadcasting Network	Beam Tilt:	1.00 degrees
Date:	June 15, 2021	Azimuth Angle:	112 degrees



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TVSTUDY INTERFERENCE ANALYSIS RESULTS
PROPOSED KTBN-TV
CHANNEL 33 – SANTA ANA, CALIFORNIA
[AMENDMENT TO LMS-0000144774]

Study created: 2021.06.16 08:21:23

Study build station data: LMS TV 2021-06-14
Proposal: KTBN-TV D33 DT APP SANTA ANA, CA
File number: BLANK0000144774
Facility ID: 67884
Station data: User record
Record ID: 1071
Country: U.S.
Zone: II

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	KNLA-CD	D32	DC	LIC	LOS ANGELES, CA	BLANK0000068695	1.2 km
Yes	KBAK-TV	D33	DT	LIC	BAKERSFIELD, CA	BLCDT20060628ABK	144.8
Yes	KDFX-CD	D33	DC	LIC	INDIO/PALM SPRINGS, CA	BLANK0000075037	155.2
Yes	KMEX-DT	D34	DT	CP	LOS ANGELES, CA	BLANK0000035668	0.5
Yes	KMEX-DT	D34	DT	LIC	LOS ANGELES, CA	BLCDT20121203ASI	0.5
No	KTAS	D34	DT	LIC	SAN LUIS OBISPO, CA	BLCDT20070222AAX	268.3

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D33
Latitude: 34 13 27.00 N (NAD83)
Longitude: 118 3 47.20 W
Height AMSL: 1765.0 m
HAAT: 875.0 m
Peak ERP: 1000 Kw
Antenna: RFS 0.0 deg
Elev Pattn: Generic
Elec Tilt: 1.00

SMITH AND FISHER

40.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	37.6 kW	361.7 m	78.5 km
45.0	158	361.3	88.5
90.0	846	586.6	119.1
135.0	838	1370.0	150.8
180.0	425	1471.2	144.5
225.0	834	1417.8	152.1
270.0	834	967.8	135.8
315.0	159	557.8	102.5

Database HAAT does not agree with computed HAAT

Database HAAT: 875 m Computed HAAT: 887 m

ERP exceeds maximum

ERP: 1000 kW ERP maximum: 167 kW

Distance to Canadian border: 1620.7 km

**Proposal is within coordination distance of Mexican border

Distance to Mexican border: 190.0 km

Conditions at FCC monitoring station: Livermore CA

Bearing: 320.6 degrees Distance: 511.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 56.2 degrees Distance: 1308.1 km

Study cell size: 1.00 km

Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

No IX check failures found.

POWER DENSITY CALCULATION

PROPOSED KTVB-TV
CHANNEL 33 – SANTA ANA, CALIFORNIA
[AMENDMENT TO LMS-0000144774]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Santa Ana facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1000 kW (H) and 300 kW (V), an antenna radiation center 39 meters above ground, and the specific elevation pattern of the proposed RFS SAA28-KTVB-E400-ES5R-33 antenna, maximum power density two meters above ground of 0.041 mW/cm² is calculated to occur 12.4 meters southeast and southwest of the base of the tower. Since this value is only 10.5 percent of the 0.39 mW/cm² reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 33 (584-590 MHz), and only 2.5% of the occupational exposure limit at this frequency, a grant of this proposal may be considered a minor environmental action with respect to public and occupational ground-level exposure to non-ionizing electromagnetic radiation. Should the Commission deem it necessary, the licensee will conduct a power density survey in the vicinity of the transmitter site upon completion of the installation of the new antenna.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.