

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING NETWORK, licensee of Television Station KTBN-DT, Santa Ana, California, in support of its Application for Construction Permit to operate post-transition on Channel 33, its newly authorized allotment channel.

It is important to note that the instant proposal specifies the same facility proposed to the Commission in BPRM-20081031ACN, except that an ERI antenna has been substituted for the originally specified Dielectric antenna. However, the ERI antenna's azimuth pattern is identical to that of the Dielectric model. Therefore, no change in contour distances results from the use of the ERI antenna.

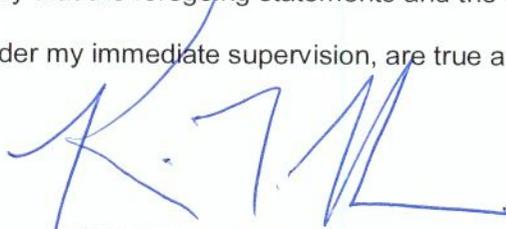
The proposed ERI ESR-8UA-HP2CX-33 directional antenna will be mounted at the 39-meter level of the existing 61-meter tower on which the present KTBN-DT antenna is mounted. Elevation and azimuth pattern data for the proposed antenna are provided in Exhibit B. Exhibit C is a map upon which the predicted service contours are plotted. As shown, the community of Santa Ana is entirely contained within the 48 dBu contour.

It is important to note that, while the proposed effective radiated power of 1000 kw exceeds that allowable in Section 73.622(f)(8)(i) of the Commission's Rules, the coverage of the facility proposed herein does not exceed that of the largest station in the market (KTLA-DT, Channel 31 in Los Angeles, California), as allowed in Section 73.622(f)(5) of the Rules. The area within the noise-limited service contour of the KTLA-DT allotment facility is 54,140 square kilometers, whereas that of proposed KTBN-DT is only 41,456 square kilometers.

Exhibit D is an interference study, which concludes that the proposed facility meets the requirements of Section 73.623(c)(2) of the Rules with respect to post-transition DTV stations

and Class A LPTV facilities. A cell size of 1.0 kilometer and an increment spacing of 0.1 kilometer were used in this analysis. A power density study is provided in Exhibit E.

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.

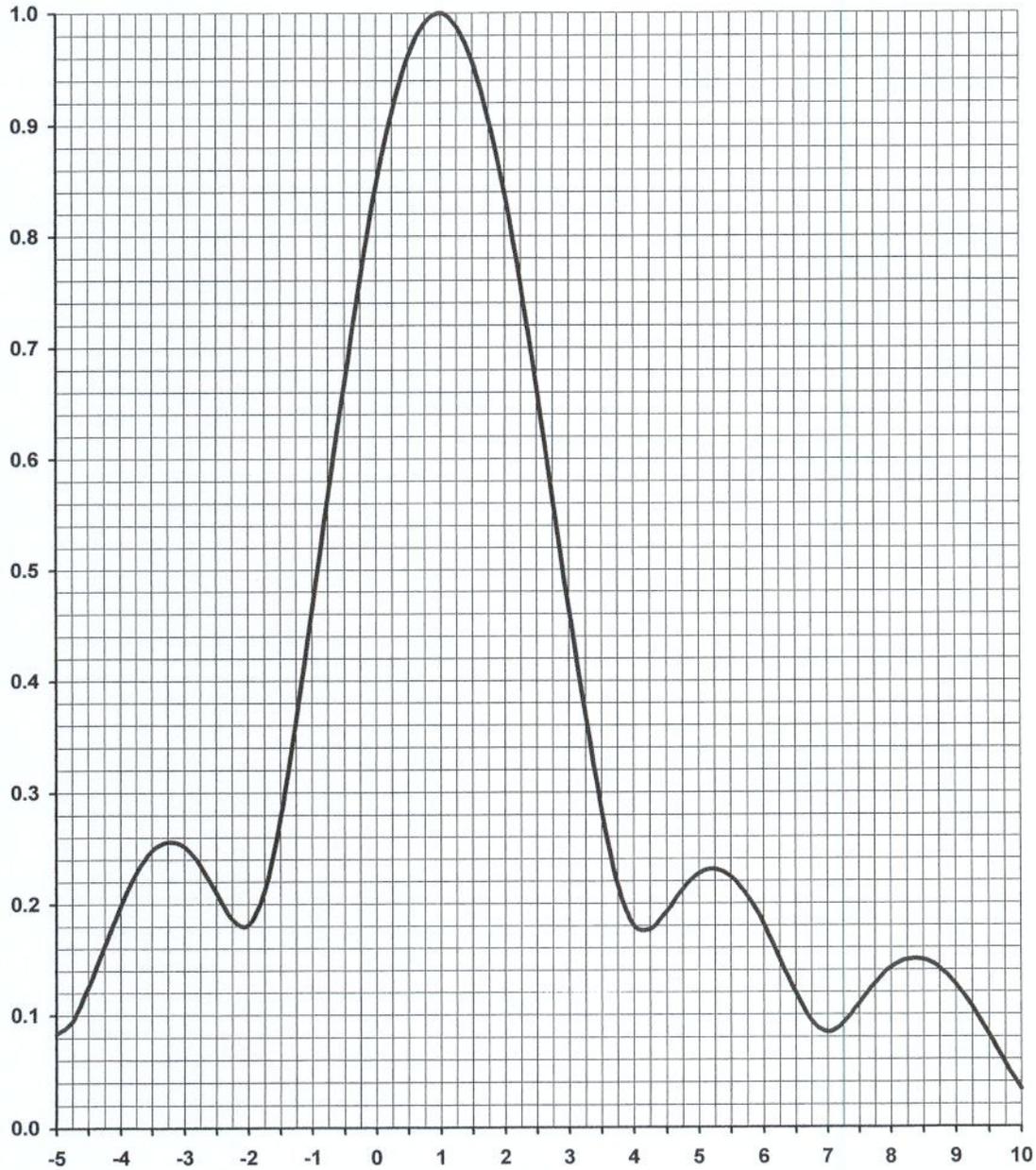


KEVIN T. FISHER

February 9, 2009

ELEVATION PATTERN

TYPE:	<u>ESR-8H4-CH33</u>		Frequency:	<u>33 (DTV)</u>
Directivity:	<u>Numeric</u>	<u>dBd</u>	Location:	<u>Santa Ana, CA</u>
Main Lobe:	<u>17.18</u>	<u>12.35</u>	Beam Tilt:	<u>1.00</u>
Horizontal:	<u>12.27</u>	<u>10.89</u>	Polarization:	<u>Horizontal</u>



ELECTRONICS RESEARCH, INC. **ERI**

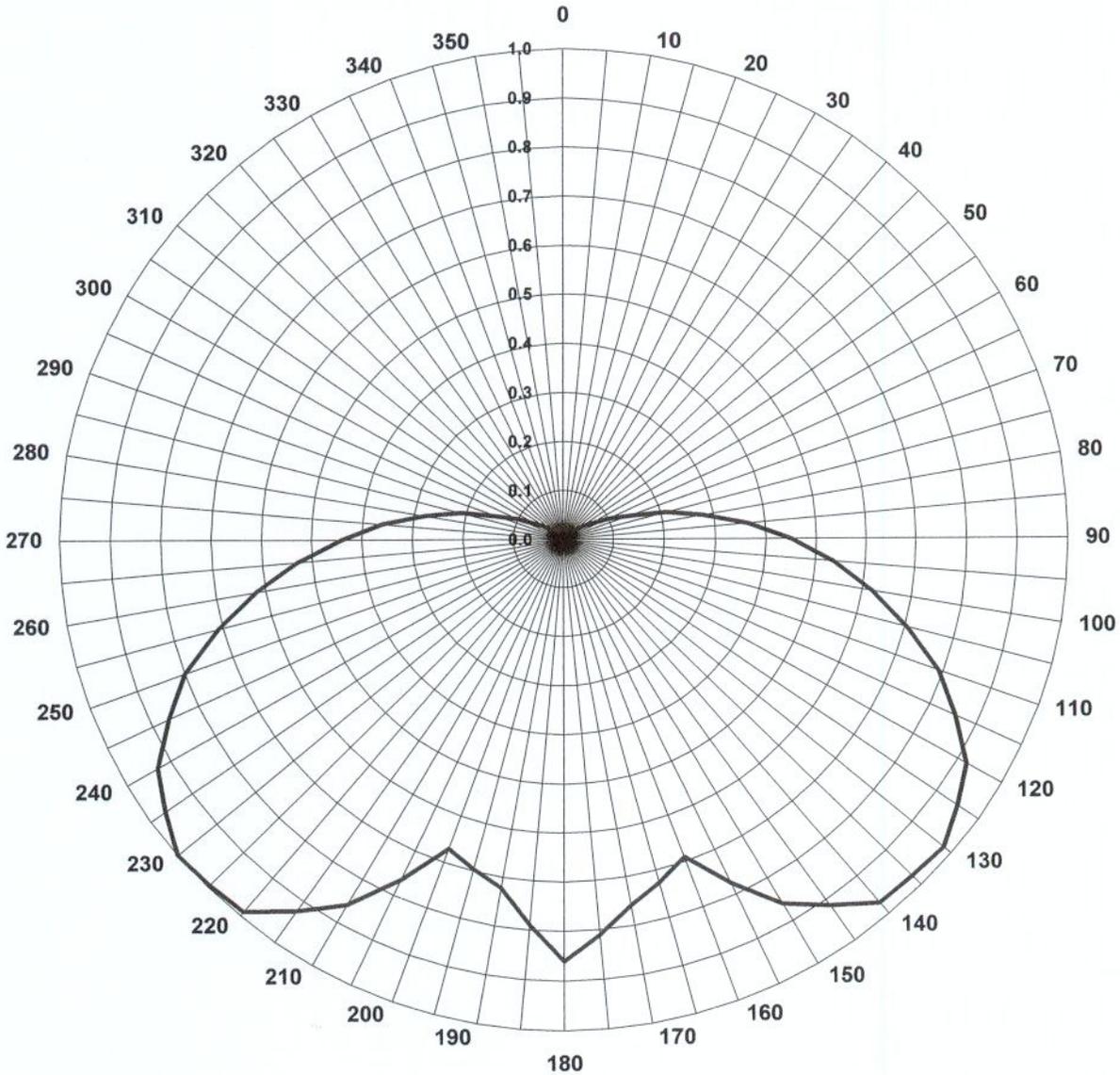
EXHIBIT B-1
ANTENNA ELEVATION PATTERN
PROPOSED KTBN-DT
CHANNEL 33 – SANTA ANA, CALIFORNIA
 SMITH AND FISHER

AZIMUTH PATTERN

TYPE: CH33HAZ-CX
Numeric 2.91 dB 4.63
Directivity:
Peak(s) at:

Frequency: 33 (DTV)
Location: Santa Ana, CA
Polarization: Horizontal

Note: Pattern shape and directivity may vary with channel and mounting configuration.



ELECTRONICS RESEARCH, INC. **ERI**

EXHIBIT B-2
ANTENNA AZIMUTH PATTERN
PROPOSED KTBN-DT
CHANNEL 33 – SANTA ANA, CALIFORNIA
SMITH AND FISHER

ANTENNA RELATIVE FIELD VALUES
PROPOSED KTBN-DT
CHANNEL 33 - SANTA ANA, CALIFORNIA

<u>Azimuth</u> <u>(° T)</u>	<u>Relative</u> <u>Field</u>	<u>ERP</u> <u>(dbk)</u>	<u>Azimuth</u> <u>(° T)</u>	<u>Relative</u> <u>Field</u>	<u>ERP</u> <u>(dbk)</u>
0	0.03	-0.5	180	0.86	28.7
10	0.02	-4.0	190	0.72	27.1
20	0.02	-4.0	200	0.67	26.5
30	0.03	-0.5	210	0.86	28.7
40	0.03	-0.5	220	0.99	29.9
50	0.03	-0.5	230	1.00	30.0
60	0.06	5.6	240	0.93	29.4
70	0.14	12.9	250	0.80	28.1
80	0.28	18.9	260	0.62	25.8
90	0.45	23.1	270	0.44	22.9
100	0.62	25.8	280	0.28	18.9
110	0.79	28.0	290	0.14	12.9
120	0.92	29.3	300	0.06	5.6
130	0.98	29.8	310	0.03	-0.5
140	0.97	29.7	320	0.03	-0.5
150	0.86	28.7	330	0.02	-4.0
160	0.69	26.8	340	0.02	-4.0
170	0.76	27.6	350	0.03	-0.5

CONTOUR POPULATION

48 DBU : 15,518,511

41 DBU : 16,406,072

Smith and Fisher



EXHIBIT C

PREDICTED SERVICE CONTOURS

**PROPOSED KTBN-DT
CHANNEL 33 - SANTA ANA, CALIFORNIA**

SMITH AND FISHER

LONGLEY-RICE INTERFERENCE STUDY
PROPOSED KTBN-DT
CHANNEL 33 – SANTA ANA, CALIFORNIA

We have determined that the KTBN-DT operation proposed herein meets the FCC's recently adopted interference standards with respect to various co-channel and adjacent-channel digital television facilities, as they will exist on or before June 12, 2009, the date by which all full-power stations must operate with the parameters adopted in the Commission's DTV Table of Allotments.

In evaluating the interference effect of this proposal, we have relied upon the same Longley-Rice-based software that the Commission employs in its studies. In this specific study, a cell size of 1 kilometer and an increment spacing of 0.1 kilometer along each azimuth were used. Attached, as Exhibit D-2, is a summary printout of the results from our study. It concludes that the proposed KTBN-DT facility on Channel 33 contributes no more than 0.5 percent interference to the service population of any potentially affected post-transition DTV station or Class A LPTV station. Therefore, this proposal meets the FCC's *de minimis* interference standards for DTV operations.

Summary Study

Percent allowed new interference: 0.500
 Percent allowed new interference to Class A: 0.500
 Census data selected 2000
 Post Transition Data Base Selected ./data_files/pt_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 11-26-2008 Time: 10:45:27

Record Selected for Analysis

KTBN-D.P USERRECORD-01 SANTA ANA CA US
 Channel 33 ERP 1000. kW HAAT 892. m RCAMSL 01765 m
 Latitude 034-13-27 Longitude 0118-03-44
 Status APP Zone 2 Border
 Dir Antenna Make usr Model USRPAT01 Beam tilt N Ref Azimuth 0.
 Last update Cutoff date Docket
 Comments
 Applicant

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 0.10 km

Facility does not meet maximum height/power limits
 Channel 33 ERP = 1000.00 HAAT = 892.

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	0.900	418.6	58.3
45.0	0.900	360.5	55.8
90.0	202.500	576.7	104.9
135.0	868.544	1372.3	150.2
180.0	666.336	1481.0	149.5
225.0	899.575	1416.1	152.0
270.0	186.651	969.5	118.8
315.0	0.900	539.4	62.3

Evaluation toward Class A Stations

Station inside contour of Class A station
 KNET-LP 25 LOS ANGELES CA ESTA 20070216ABK

Station inside contour of Class A station
 KNET-LP 25 LOS ANGELES CA BLTTA 20060925AGZ

Station inside contour of Class A station
 KNET-LP 25 LOS ANGELES CA BPTTA 20070202ABA

Contour overlap to Class A station

KDFX-CA 33 INDIO/PALM SPRINGS CA BLTTA 20030313ALZ
 Offset Proposed Offset Class A - Required D/U ratio: 34.0

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

KTBN-D.P 33 SANTA ANA CA USERRECORD01

and station

SHORT TO: KPXN 30 SAN BERNARDINO CA BLCT 19940124KF
 034-11-15 0117-41-58
 Req. separation => 24.1 <= 96.6 Actual separation 33.7 Short 62.9(
 9.6) km

SHORT TO: KBAK-TV 33 BAKERSFIELD CA BLCDT 20060628ABK
 035-27-11 0118-35-25
 Req. separation 223.7 Actual separation 144.6 Short 79.1 km

SHORT TO: KBAK-TV 33 BAKERSFIELD CA DTVPLN DTVP1208
 35 -27-11 118 -35-25
 Req. separation 223.7 Actual separation 144.6 Short 79.1 km

SHORT TO: KTBN-DR 33 SANTA ANA CA BPRM 20081031ACN
 034-13-27 0118-03-44
 Req. separation 223.7 Actual separation 0.0 Short 223.7 km

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is within the Mexican coordination distance
 Distance to border = 207.0km

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
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33 KTBN-D.P SANTA ANA CA USERRECORD01

Stations Potentially Affected by Proposed Station

Chan No.	Call	City/State	Dist (km)	Status	Application	Ref.
19	KBBV-CA	BAKERSFIELD CA	144.8	LIC	BLTTA	-
20030710	ABR					
19	KBBV-CA	BAKERSFIELD CA	144.8	APP	BSTA	-
20080923	ABJ					
25	KNET-LP	LOS ANGELES CA	1.2	APP	BSTA	-
20070216	ABK					
25	KNET-LP	LOS ANGELES CA	1.3	LIC	BLTTA	-
20060925	AGZ					
25	KNET-LP	LOS ANGELES CA	1.2	APP	BPTTA	-
20070202	ABA					
25	KSKP-CA	OXNARD CA	89.0	LIC	BLTTA	-
20030507	ACF					
31	KBTF-CA	BAKERSFIELD CA	145.0	LIC	BLTTA	-
20041126	ACC					
32	KDOC-TV	ANAHEIM CA	0.4	LIC	BLCDDT	-
20060626	ACV					
32	KDOC-TV	ANAHEIM CA	0.4	PLN	DTVPLN	-
DTVP1171						
32	KDOC-TV	ANAHEIM CA	0.4	CP MOD	BMPCDDT	-
20040323	ATA					
33	KBAK-TV	BAKERSFIELD CA	144.8	LIC	BLCDDT	-
20060628	ABK					
33	KBAK-TV	BAKERSFIELD CA	144.8	PLN	DTVPLN	-
DTVP1208						
33	KDFX-CA	INDIO/PALM SPRINGS CA	155.2	LIC	BLTTA	-
20030313	ALZ					
34	KMEX-TV	LOS ANGELES CA	0.5	CP	BPCDDT	-
20080228	ABI					
34	KMEX-TV	LOS ANGELES CA	0.5	PLN	DTVPLN	-
DTVP1240						
34	KMEX-TV	LOS ANGELES CA	0.5	APP	BMPCDDT	-
20080620	AGO					

Study of this proposal found the following interference problem(s):

NONE.

POWER DENSITY CALCULATION
PROPOSED KTBN-DT
CHANNEL 33 – SANTA ANA, CALIFORNIA

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, an antenna radiation center 39 meters above ground, and the elevation pattern of the ERI antenna, maximum power density two meters above ground of 0.29 mw/cm^2 is calculated to occur 21 meters south, southeast and southwest of the base of the tower. Since this is only 76 percent of the 0.38 mw/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 33 (584-590 MHz), a grant of this proposal may be considered a minor environmental action with respect to public and occupational ground-level exposure to nonionizing electromagnetic radiation. If necessary, the station will conduct power density measurements at the site in order to ensure compliance with the Commission's RF exposure guidelines.

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 nonionizing radiation.