

Section III - Engineering (Digital)

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel: 18
2. Translator Input Channel No. 9

3. Station proposed to be rebroadcast:

Call Sign KIXE-DT	City Redding	State California	Channel 9
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4. Antenna Location Coordinates: (NAD 27)

39 ° 57 29 ☒ N ☐ S Latitude  
121 ° 42 49 ☐ E ☒ W Longitude

5. Antenna Structure Registration Number: 1258123

☐ Not applicable

See Explanation  
in Exhibit No.

☐ FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 1065.3 meters
7. Overall Tower Height Above Ground Level: 152.4 meters
8. Height of Radiation Center Above Ground Level: 101 meters
9. Maximum Effective Radiated Power (ERP): 4.0 kW
10. Transmitter Output Power: 0.5 kW

11. a. Transmitting Antenna: ☐ Nondirectional ☐ Directional ☒ Directional composite

Manufacturer Scala	Model K723147
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- b. Electrical Beam Tilt: \_\_\_\_\_ degrees ☒ Not applicable

c. Directional Antenna Relative Field Values:

Rotation: 145 ° ☐ No rotation ☐ N/A (Nondirectional)

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	0.461	60	0.799	120	0.798	180	0.461	240	0.135	300	0.134
10	0.623	70	0.744	130	0.926	190	0.309	250	0.066	310	0.145
20	0.808	80	0.862	140	1.000	200	0.175	260	0.058	320	0.072
30	0.947	90	0.947	150	0.948	210	0.051	270	0.098	330	0.050
40	0.999	100	0.863	160	0.806	220	0.072	280	0.058	340	0.175
50	0.929	110	0.745	170	0.623	230	0.145	290	0.066	350	0.309
Additional Azimuths											

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

12. Out-of-Channel Emission Mask: Simple ☐ Stringent ☒

**CERTIFICATION**

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030. ☒ Yes ☐ No See Explanation in Exhibit No. D

14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance. An Exhibit is required. ☒ Yes ☐ No See Explanation in Exhibit No. E

Exhibit No.  
E

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

15. **Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:

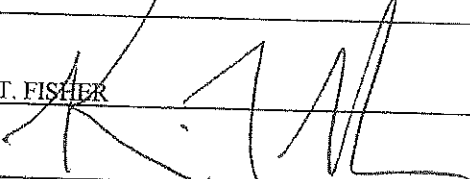
- ☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.
- ☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of

**PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.**

16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

- ☐ Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees,
- ☐ Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreement(s) with 700 MHz public safety regional planning committee(s) and state frequency administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.
- ☐ Pursuant to Section 74.786(e), an applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name KEVIN T. FISHER		Relationship to Applicant (e.g., Consulting Engineer) ENGINEERING CONSULTANT	
Signature 		Date May 12, 2009	
Mailing Address SMITH AND FISHER, 2237 Tackett's Mill Drive, Suite A			
City Lake Ridge		State or Country (if foreign address) Virginia	ZIP Code 22192
Telephone Number (include area code) (703) 494-2101		E-Mail Address (if available) kevin@smithandfisher.com	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of NORTHERN CALIFORNIA EDUCATIONAL TELEVISION ASSOCIATION, INC., licensee of Television Station KIXE-DT, Channel 9 in Redding, California, in support of this request for Special Temporary Authority to operate a new digital translator on Channel 18 in Chico, California.

Analog KIXE-TV operated on Channel 9 and digital KIXE-DT operated on Channel 18 (under Special Temporary Authority) until recently. In early September 2008, the station ceased operating these stations and began post-transition digital only operation on Channel 9 with KIXE-DT. During the ensuing months, the station began receiving reports that its reception in the Chico/Paradise area was "spotty" at best and significantly worse than that enjoyed by viewers of the analog Channel 9 signal. This phenomenon is probably due to the digital coverage "cliff effect" as well as the nearly 10 dB disparity between the former analog power level (115 kw) and new digital power level (15 kw). Therefore, the purpose of this translator proposal is to provide an adequate digital signal to those that live in the new "loss area".

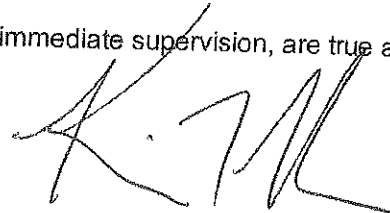
It is proposed to mount a portion of the Channel 18 STA directional antenna at the 101-meter level of an existing 152-meter communications tower near Chico. Exhibit B is a map upon which the translator's predicted service contour is plotted in relation to the licensed KIXE-DT contour on Channel 9. Although the translator contour exceeds that of KIXE-DT in certain directions, this extension is a result of employing the STA antenna and cannot be avoided without significantly limiting the translator's signal level in these areas.

EXHIBIT A

Operating parameters for the proposed facility are tabulated in Exhibit C. An interference study (run with a cell size of 1.0 kilometer and increment spacing of 0.1 kilometer) is provided in Exhibit D, and a power density calculation follows as Exhibit E.

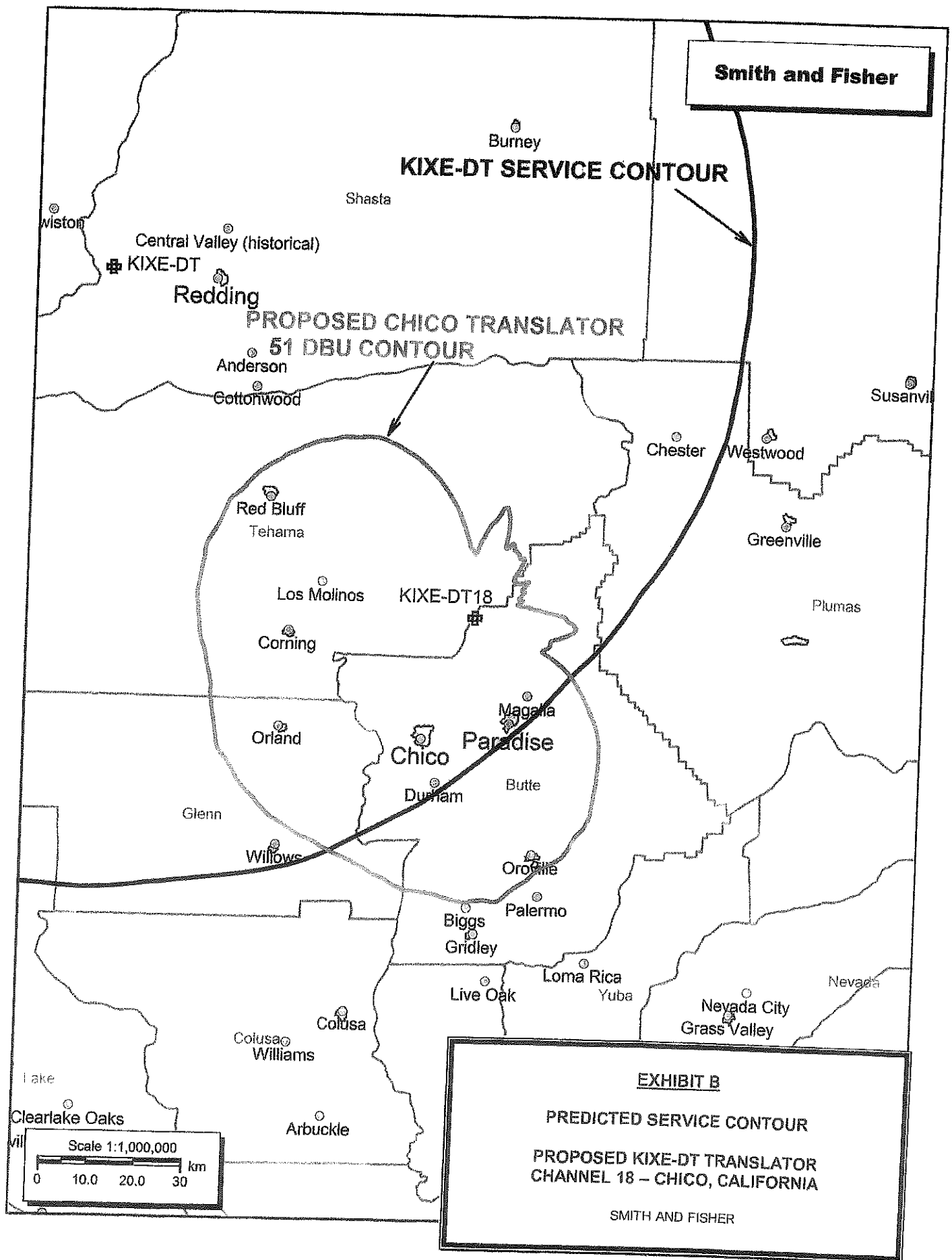
Because no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. The FCC issued Antenna Structure Registration Number 1258123 to this tower.

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

May 12, 2009



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EXHIBIT C

## PROPOSED OPERATING PARAMETERS

PROPOSED KIXE-DT TRANSLATOR  
CHANNEL 18 – CHICO, CALIFORNIA

Transmitter Power Output:	0.5 kw
Transmission Line Efficiency:	66.0%
Antenna Power Gain – Toward Horizon:	12.16
Antenna Power Gain – Main Lobe:	12.16
Effective Radiated Power – Toward Horizon:	4.0 kw
Effective Radiated Power – Main Lobe:	4.0 kw
Transmitter Make and Model:	Type-accepted
Transmission Line Make and Model:	Andrew HJ7-50A
Size and Type:	1-5/8" air heliax
Length:	380 feet
Antenna Make and Model:	Scala K723147
Orientation	235° T*
Beam Tilt	none
Radiation Center Above Ground:	101 meters
Radiation Center Above Mean Sea Level:	1166 meters

\*line of symmetry

LONGLEY-RICE INTERFERENCE STUDY  
PROPOSED KIXE-DT TRANSLATOR  
CHANNEL 18 – CHICO, CALIFORNIA

We conducted a detailed interference study using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to all facilities of concern. The software utilizes a 1-square kilometer cell size, calculates signal strength at 0.1 kilometer increments along each radial studied, and employs the 1990 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within the protected contour of the station under study where interference from another source (other than the proposed translator) already is predicted to exist (also known as "masking"). The results of this study are provided in Exhibit E-2. It concludes that the facility proposed herein causes no significant new interference to any of the potentially affected stations.

As a result, it is believed that the proposed Chico translator facility complies with the requirements of Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030 of the Commission's Rules.



## Summary Study

1990 Census data selected

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 05-06-2009 Time: 13:22:51

Record Selected for Analysis

KIXE-DT1 USERRECORD-01 CHICO CA US  
 Channel 18 ERP 4. kW HAAT 424. m RCAMSL 01166 m STRINGENT MASK  
 Latitude 039-57-29 Longitude 0121-42-49  
 Status APP Zone 2 Border  
 Dir Antenna Make usr Model USRPAT01 Beam tilt N Ref Azimuth  
 145.  
 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

Not full service station

Facility meets maximum power limit

Azimuth (Deg)	ERP (kW)	HAAT (m)	51.0 dBu F(50,90) (km)
0.0	0.015	165.7	13.5
45.0	0.013	115.3	11.0
90.0	0.078	145.4	19.5
135.0	0.382	375.4	38.3
180.0	3.787	641.8	59.4
225.0	2.972	744.8	59.9
270.0	2.972	699.3	59.0
315.0	1.553	506.3	50.9

Contour Overlap to Proposed Station

Station  
 KXVU-LP 17 CHICO CA BLTTL20060303AAJ

Station inside contour of Digital LPTV station  
 KIXE-DT1 18 CHICO CA USERRECORD01

Station  
 K19FY 19 CHICO CA BLTT20060109ABD

Station inside contour of Digital LPTV station  
 KIXE-DT1 18 CHICO CA USERRECORD01

Contour Overlap Evaluation to Proposed Station Complete

## LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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## Start of Interference Analysis

Channel	Proposed Station		
18	Call City/State	ARN	
	KIXE-DT1 CHICO CA	USERRECORD01	

## Stations Potentially Affected by Proposed Station

Chan No.	Call	City/State	Dist(km)	Status	Application	Ref.
15	K15HV-D	CHICO CA	28.9	CP	BDISTTL	-
20061208AAE						
15	K15FJ	LAKEPORT CA	140.6	LIC	BLTTL	-
20011115ACR						
15	K15CX	OROVILLE CA	56.2	LIC	BLTTL	-
20020613AAH						
15	KMUM-CA	SACRAMENTO CA	140.4	LIC	BLTTL	-
19981016JH						
16	K16CX	GRASS VALLEY CA	105.6	LIC	BLTTL	-
19960403IB						
17	KXVU-LP	CHICO CA	0.7	LIC	BLTTL	-
20060303AAJ						
17	KXVU-LP	CHICO CA	0.7	CP	BDFCDTL	-
20060329AEC						
17	KSTV-LP	SACRAMENTO CA	154.9	APP	BDISTTL	-
20070103AAV						
17	K17HE	SUSANVILLE, ETC. CA	127.3	LIC	BLTTL	-
20080325ADU						
17	K17CG	UKIAH CA	150.7	LIC	BLTT	-
19900129IH						
17	K17BA	YREKA CA	199.1	APP	BDFCDTT	-
20090325AEK						
17	K17BA	YREKA, ETC. CA	199.1	LIC	BLTT	-
19910911JG						
17	K17CA-D	CARSON CITY NV	189.0	LIC	BLDTT	-
20090108AAO						
18	KUVS-TV	MODESTO CA	221.6	LIC	BLCDT	-
20020906ABH						
18	K18IJ-D	SALINAS CA	380.2	CP	BDCCDTL	-
20070413AGS						

## EXHIBIT D-2 continued

18	K18IF-D	SETIAD VALLEY CA	245.2	CP	BDCCDTT	-
20061030AIU						
18	K18DP	LOVELOCK NV	254.7	LIC	BLTTL	-
19931015IA						
18	K18DP	LOVELOCK NV	254.7	CP	BDFCDTT	-
20090223AAA						
18	K18GG	MINA-LUNING NV	360.3	LIC	BLTT	-
20031008AAJ						
18	K18BW	YERINGTON NV	237.8	LIC	BLTTV	-
19880217IB						
18	K18EP	BROOKINGS, ETC. OR	323.8	LIC	BLTT	-
19960829JA						
18	K18AN	GRANTS PASS OR	302.5	LIC	BLTT	-
19850621IA						
18	K18AN	GRANTS PASS OR	311.2	CP	BPTT	-
20080125ADF						
18	K18GB	MEDFORD OR	273.9	LIC	BLTTL	-
20040916ABD						
18	K18IE-D	PROSPECT OR	316.6	CP MOD	BMPDTL	-
20080528ACS						
18	KTVK	ROSEBURG OR	388.0	LIC	BLCDDT	-
20060721AAR						
18	KTVK	ROSEBURG OR	388.0	CP	BPCDDT	-
20061013ADM						
19	K19FY	CHICO CA	0.5	LIC	BLTT	-
20060109ABD						
19	K19FY	Chico CA	0.5	CP	BDFCDTT	-
20060306BQY						
19	K19GA	SUSANVILLE-HERLONG CA	127.3	LIC	BLTTL	-
20080325ADV						
19	KDSL-CA	UKIAH CA	148.6	APP	BSTA	-
20061116AEQ						
19	KDSL-CA	UKIAH CA	148.6	LIC	BLTTA	-
20030616ABE						
19	K19GL-D	YREKA CA	199.0	LIC	BLDDTT	-
20080826AAQ						
19	K19CU	CARSON CITY NV	188.6	LIC	BLTT	-
19930719IG						
21	KRVU-LP	REDDING CA	103.3	LIC	BLTTL	-
19991201ABH						
22	KZVU-LP	CHICO CA	0.5	LIC	BLTTL	-
20000531AEC						
26	NEW	CHICO CA	25.8	APP	BNPTTL	-
20000830BQI						
26	NEW	CHIO CA	80.8	APP	BNPTTL	-
20000830BLN						
26	K26GK	LAKEPORT CA	140.6	LIC	BLTTL	-
20030130AHS						
26	KGEC-LP	REDDING CA	103.3	APP	BMJPTTL	-
20000831CHI						
26	KGEC-LP	REDDING CA	103.3	LIC	BLTTL	-
19971023JG						
26	K27FX	SACRAMENTO CA	129.6	APP	BPTTL	-
20020816AAS						

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

NONE.

EXHIBIT E

POWER DENSITY CALCULATION

PROPOSED KIXE-DT TRANSLATOR  
CHANNEL 18 - CHICO, 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 facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 4.0 kw, an antenna radiation center 101 meters above ground, and assuming a vertical relative field value of 20 percent at the steeper elevation angles for the proposed Scala antenna, maximum power density two meters above ground of 0.00055 mw/cm<sup>2</sup> is calculated to occur near the base of the tower. Since this is only 0.2 percent of the 0.33 mw/cm<sup>2</sup> reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 18 (494-500 MHz), this proposal may be excluded from consideration with respect to public exposure to nonionizing electromagnetic radiation.

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.