

FOR
FCC
USE
ONLY

FCC 302-FM

APPLICATION FOR FM BROADCAST STATION LICENSE

(Please read instructions before completing this form.)

FOR MASS MEDIA BUREAU USE ONLY

FILE NO.

BEH 9807001000

Section I - GENERAL

1. APPLICANT NAME Salisbury Broadcasting Co.		
MAILING ADDRESS (Line 1) P.O. Box 987		Copy notices and communications to: Miller & Miller, P.C. P.O. Box 33003
MAILING ADDRESS (Line 2)		Washington, DC 20033
CITY San Luis Obispo	STATE OR COUNTRY (if foreign) CA	ZIP CODE 93406
TELEPHONE NUMBER (include area code) (805) 781-2750	CALL LETTERS KWWV	OTHER FCC IDENTIFIER (IF APPLICABLE)
OR MAILING THIS APPLICATION, SEE INSTRUCTIONS FOR SECTION I		
2. A. Is a fee submitted with this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
B. If No, select the appropriate box to indicate reason for fee exemption (see 47 C.F.R. Section 1.1114)		
<input type="checkbox"/> Governmental Entity	<input type="checkbox"/> Noncommercial educational licensee	<input type="checkbox"/> Other (Please explain):

3. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination.

☐ Yes ☒ No

If the answer is Yes, attach as an Exhibit a full disclosure concerning the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

4. For permittees of commercial FM stations only:

Has permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b). See Instructions.

☐ Yes ☒ No
☒ Does Not Apply

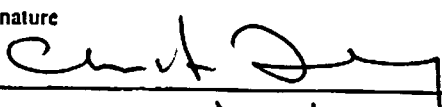
Section 1 - GENERAL INFORMATION (Page 2)

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. (See 47 U.S.C. Section 304.)

The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in the application.

CERTIFICATIONS

5. By checking Yes, the applicant certifies that, in the case of an individual applicant, he or she is not ☐ Yes ☐ No subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).
6. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name of Applicant Salisbury Broadcasting Corporation	Signature 
Title President	Date 6/24/98

WILLFUL FALSE STATEMENTS MADE 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).

SECTION II - TECHNICAL DATA

1. This license application is for a: (check all that apply)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Request for program test authority. | <input type="checkbox"/> Station on automatic program test authority. |
| <input checked="" type="checkbox"/> Commercial station. | <input type="checkbox"/> Noncommercial station. |
| <input checked="" type="checkbox"/> Directional antenna. | <input type="checkbox"/> Non-directional antenna. |
| <input type="checkbox"/> License to cover construction permit for an auxiliary facility. | |
| <input type="checkbox"/> License to utilize former licensed main facility as an auxiliary facility. | |

SPECIAL OPERATING CONDITIONS MAY PROHIBIT AUTOMATIC PROGRAM TEST AUTHORITY.

2. Call Sign: KWWV 3. Frequency or channel: 259 Class: A

4. Community of License:

City <u>MORRO BAY</u>	State <u>CA</u>
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5. Select ONE that applies and enter the file number(s) on the appropriate line(s). This application:

- (a) ☒ covers a construction permit. Original file BPH-980226IA
as modified by: BMPH-98062
as extended by: _____
as replaced by: _____

(b) ☐ modifies a license, file number: _____

6. Is this application being filed pursuant to MM Docket No. 88-375 (Class A Upgrade) or MM Docket 96-58? ☐ Yes ☒ No
See Instructions.

Exhibit No.

If Yes, attach a completed Supplement to Form 302-FM to this application.

IF YOU SELECTED 5(b), "MODIFIES A LICENSE," PROCEED TO ITEM 8.

7. Expiration date of construction permit:

Month	<u>11</u>	Day	<u>11</u>	Year	<u>1999</u>
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THIS APPLICATION MUST BE ON FILE WITH THE COMMISSION BEFORE THE EXPIRATION DATE OF YOUR CONSTRUCTION PERMIT. SEE INSTRUCTIONS.

SECTION II - TECHNICAL DATA (Page 2)

8. Description of facilities authorized by the construction permit or license noted in item 5(a) or 5(b):

(a) Antenna coordinates: 35 ° 21 ' 40 " N. Lat. 120 ° 39 ' 21 " W. Lon.
 BPH-980226IA Horizontal BMPH-98062 Vertical

(b) Effective radiated power: .265 .285 kW .285 kW

(c) Beam tilt effective radiated power (if applicable): _____ kW _____ kW

(d) Radiation center above ground: 52 39 meters 39 meters

(e) Radiation center above mean sea level: 803 790 meters 790 meters

(f) Antenna height above average terrain: 467 454 meters 454 meters

(g) Overall tower height above ground (including antenna, 61 all other appurtenances, and lighting, if any): 61 meters

9. Description of facilities as constructed:

(a) Antenna coordinates: 35 ° 21 ' 40 " N. Lat. 120 ° 39 ' 21 " W. Lon.

(b) Effective radiated power: .285 kW .285 kW

(c) Beam tilt effective radiated power (if applicable): _____ kW _____ kW

(d) Radiation center above ground: 39 meters 39 meters

(e) Radiation center above mean sea level: 790 meters 790 meters

(f) Antenna height above average terrain: 454 meters 454 meters

(g) Overall tower height above ground (including antenna, all other appurtenances, and lighting, if any): 61 meters

10. Are there any differences between the facilities described in Item 8 and those in Item 9?

☐ Yes ☒ No

IF YES, YOU MAY NOT BE ABLE TO USE THIS FORM. SEE INSTRUCTIONS.

Attach an Exhibit explaining in detail how these differences occurred.

Exhibit No.

CONVERSION TO AND FROM METRIC:

METERS = 0.3048 X FEET

FEET = 3.281 X METERS

SECTION II - TECHNICAL DATA (Page 3)

11. a. Is the antenna be mounted on an antenna structure which has been registered with the Commission?

☐ Yes ☒ No

If Yes, provide the seven digit registration number and proceed to item 12.

- b. Has the owner of the antenna structure filed an application for registration with the Commission?

☐ Yes ☒ No

If yes, provide the date FCC Form 854 was filed and proceed to item 12.

- c. Applicant certifies that antenna structure meets 6.10 meter (20 feet) exception rule and therefore does not require registration. In other words, the overall height of the entire structure is not more than 6.10 meters (20 feet) above the ground or the antenna does not extend more than 6.10 meters (20 feet) above a man-made structure (structure built for a purpose other than mounting an antenna, i.e., building, water tank, silo, fire tower, etc.).

☐ Yes ☐ No

If yes, proceed to item 12.

- d. Antenna structure is shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and is located in the congested area of a city, town or settlement where it is evident beyond all reasonable doubt that the structure is so shielded that it will not adversely affect safety in air navigation.

☐ Yes ☐ No

If yes, submit as an Exhibit a detailed explanation and/or diagram to support your claim and proceed to item 12.

Exhibit No.

- e. Antenna structure does not meet FAA notification criteria as defined under 47 C.F.R. Section 17.7 and therefore does not require registration.

☒ Yes ☐ No

12. SPECIAL OPERATING CONDITIONS. Attach an Exhibit that demonstrates compliance with the special operating conditions, terms, and obligations described in the construction permit. See Instructions.

Exhibit No.

1

☐ Does Not Apply

13. Antenna description:

Make	Model Number	Number of Sections	Power Gain
SHIVELY	6810-1-DA	1	.461

If the antenna utilizes beam tilt, null fill, reduced spacing (less than one wavelength) between bays or the antenna is directional or specialized, an exhibit must be attached. SEE INSTRUCTIONS.

Exhibit No.

CONVERSION TO AND FROM METRIC:

METERS = 0.3048 X FEET

FEET = 3.281 X METERS

SECTION II - TECHNICAL DATA (Page 4)

14. Transmission line system description:

(a) Transmission Line(s):

Make	Model Number	Length in Meters	Efficiency
ANDREW	HJ5-50	42.97 meters	88.58 %
		meters	%

IF MORE SPACE IS NEEDED, PLEASE ATTACH EXHIBIT.

Exhibit No.

(b) Additional losses (Filters, Isocouplers, Multiplexers, etc.) in transmission line system:

Description	Loss in dB	Efficiency
	dB	%
	dB	%

IF MORE SPACE IS NEEDED, PLEASE ATTACH EXHIBIT.

Exhibit No.

(c) Total Efficiency of transmission line system: 88.58 %

15. Transmitter power output (in kilowatts): .698 kW

SEE INSTRUCTIONS TO CALCULATE TPO.

16. Operating constants:

(a) D.C. plate current in last radio stage (amperes): .295 A

(b) Applied D.C. voltate in last radio stage (volts): 3,500 V

(c) Efficiency of transmitter at operating power (percent): 67.6 %

(d) RF transmission line meter reading (percent): 100 %

SEE INSTRUCTIONS TO CHECK OPERATING CONSTANTS.

17. Is the main studio located within the city of license or the predicted 3.16 mV/m (70 dBu) field strength contour of the main facility?

☒ Yes ☐ No

If NO, attach an Exhibit pursuant to the Instructions.

Exhibit No.

18. Location of Main Studio: (P.O. BOXES ARE UNACCEPTABLE)

Street Address or Location Description <u>4115 BROAD ST.</u>		
City <u>SAN LUIS OBISPO</u>	County <u>SAN LUIS OBISPO</u>	State <u>CA</u>

CONVERSION TO AND FROM METRIC:

METERS = 0.3048 X FEET

FEET = 3.281 X METERS

SECTION II - TECHNICAL DATA (Page 5)

19. Location(s) of Remote Control Point(s):

(a)

Street Address or Location Description 4115 BROAD ST.		
City SAN LUIS OBISPO	County SAN LUIS OBISPO	State CA

(b)

Street Address or Location Description		
City	County	State

If there are additional remote control points, attach an Exhibit which describes their locations.

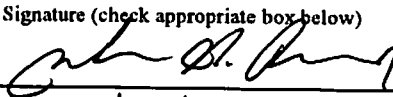
Exhibit No.

20. Location of Antenna Site:

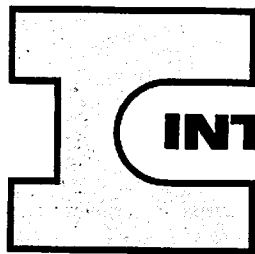
Street Address or Location Description 750 TV TOWER RD, CUESTA PEAK, LOS PADRES NATIONAL FOREST		
City SAN LUIS OBISPO	County SAN LUIS OBISPO	State CA

21. CERTIFICATION OF PREPARER

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (please print or type) WILLIAM BORDEAUX	Signature (check appropriate box below) 
Address (include ZIP Code) PO Box 13057 SAN LUIS OBISPO, CA 93401	Date 6/23/98
	Telephone No. (include Area Code) 805 543 6855

- | | |
|--|---|
| <input type="checkbox"/> Technical Director | <input type="checkbox"/> Registered Professional Engineer |
| <input checked="" type="checkbox"/> Chief Operator | <input type="checkbox"/> Technical Consultant |
| <input type="checkbox"/> Other (specify) | |



INTERSTELLAR COMMUNICATIONS

BROADCAST FACILITY ENGINEERING

Exhibit 1

KWWV C.P. BPH-980226IA Special Operating Conditions

The following documents are included to satisfy the special operating conditions of this permit:

- A) Description of measures taken at Cuesta Peak Electronics Site to provide protection to public and workers from RFR hazards present at the site and coordination of RFR issues between users at the site.
- B) Report from Hammett & Edison, Inc. of testing and evaluation of RFR compliance at the Cuesta Peak Electronics Site.
- C) Affidavit of William H. Bordeaux, qualified engineer.
- D) KWWV Antenna installation Certification by qualified engineer.
- E) Proof of performance from Shively Labs, for KWWV antenna.
- F) Antenna Installation Certification from EDA, Licensed Land Surveyors

Exhibit 1-A

Measures taken at Cuesta Peak Electronics Site to provide protection to public and workers from RFR hazards present at the site.

- 1) The KWWV transmitter site is completely fenced and inaccessible to the general public.
- 2) RF levels measured at the boundary of the fence are below ANSI standards required for exposure by the general public.
- 3) Access to the site is limited to informed workers who have knowledge of the ANSI RF exposure guidelines.
- 4) The site has been clearly marked to show any ground level RF hazards as well as climbing restrictions on towers and buildings.
- 5) The site is managed by the Cuesta Peak Broadcasters Group (CPBG). This voluntary group of site users primary job, is to insure that RF compliance and safety procedures are strictly enforced.
- 6) This station has implemented a site Occupational Exposure Guide (OEG) which provides specific instructions on methods to insure compliance with ANSI RF limits regarding workplace exposure.
- 7) The CPBG has contracted with Hammett and Edison, Inc., Consulting Engineers, to maintain the site RF documentation. As part of this explanation, we are attaching a copy of their latest report.

Submitted: William H. Bordeaux, Designated Chief Engineer, KWWV
PG-11-13142

**Cuesta Peak Antenna Farm
San Luis Obispo, California**

**Evaluation of Radio Frequency Exposure
Conditions for Compliance
with NCRP Report No. 86**

June 18, 1997

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Cuesta Peak Antenna Farm • San Luis Obispo, California

Engineering Statement of Daniel G.P. Mansergh

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained to evaluate the effects of recent facility changes on radio frequency radiation exposure conditions at the Cuesta Peak antenna farm near San Luis Obispo, California.

Background

The Cuesta Peak antenna farm is the primary broadcast transmission site for TV and FM facilities serving San Luis Obispo and the surrounding communities. In recent years, the site has been evaluated on several occasions for compliance with FCC guidelines regarding human exposure to radio frequency electromagnetic fields. Since the last full study of on-tower and ground-level exposure conditions was completed in February 1995, a new tower has been constructed and numerous modifications to broadcast facilities located on Cuesta Peak have been made. These changes have affected the ambient RF fields at the site, requiring a new site evaluation and tower study to ensure that current FCC guidelines continue to be met.

Electromagnetic Field Exposure Standard

In General Docket 93-62, the Federal Communications Commission adopted portions of the National Council on Radiation Protection and Measurements Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields." NCRP-86 is a two-tiered standard, defining exposure limits both for occupational and for publicly accessible environments, with the public limits being generally five times more restrictive. A summary of NCRP-86 is shown in Figure 1A. The field limits in the report will be applicable to all FCC-licensed broadcast stations and applications for new facilities on September 1, 1997. The most restrictive occupational guideline is 1 mW/cm², applying at FM and VHF television frequencies; at UHF television frequencies, the guideline increases with increasing frequency. The FCC has not adopted the body current limits specified in the standard.

The NCRP-86 guidelines allow higher exposures for short time periods. Exposures can be averaged over a six-minute period, allowing, for example, a two-minute exposure to fields three times the limit if the remainder of the six-minute period does not include any significant exposure.

Restrictions on the access to strong fields may be achieved in different manners for casual public exposure than for occupational exposure. Persons who are authorized to be in a site area can be educated to follow procedures that will limit time-averaged exposures to levels within the NCRP-86 guideline, as adopted.



Cuesta Peak Antenna Farm • San Luis Obispo, California

Although NCRP-86, as adopted, is the standard currently used by the FCC for evaluation of broadcast stations, another commonly used guideline is ANSI/IEEE Standard C95.1-1992, published by the American National Standards Institute. A summary of this Standard is shown as Figure 1B for reference. For most frequencies of interest, the standards are nearly identical.

Ground Level Measurements

Ground level measurements at Cuesta Peak were conducted on May 6, 1997, using a Holaday Industries Model HI-3001 broadband field strength meter with GRE-01 probe, last calibrated on October 29, 1996. While measurements were being conducted, several stations at the West Site on Cuesta Peak were operating at somewhat less than their fully authorized power; this information, along with other relevant technical parameters for each facility, is presented in Figure 2.

Measurements were first conducted in the core area of the West Site, near the base of the old Cuesta Peak tower, where field levels in excess of the occupational limits had been identified in our 1995 report of exposure conditions. Only four small areas were now found to have fields in excess of the occupational limits, as shown in Figure 3: 1) north of the KSLY building, 2) south of the path to the KSLY building, 3) west of the propane tank near the base of the K57BC tower, and 4) near the transmission lines at the base of the K57BC tower. These areas are all entirely contained within the existing boundary of orange marking posts constructed in 1995, so no additional mitigation is required. If desired, that boundary could be relocated to surround only the smaller areas, and the transmission lines could be repositioned so that they are suspended at least 7 feet above ground.

All other areas within the perimeter fencing were found to be within occupational limits, including areas around the base of the KCBX pole while the KCBX emergency antenna was transmitting. Measurements conducted immediately outside the perimeter fencing were all within the NCRP-86 public limits.

Computer Study of On-Tower Exposure Conditions

To ensure current FCC guidelines are being met when workers climb the towers on Cuesta Peak, calculations of on-tower exposure levels have been conducted according to the methodology detailed in Figure 4. The results of these calculations are presented in the series of tables included as Figures 5 and 6, showing to what extent each broadcast source must reduce power to ensure exposures in compliance with the occupational limits of NCRP-86 on sections of each tower. Operation of a station on a 30-watt exciter alone is allowed where possible.



Cuesta Peak Antenna Farm • San Luis Obispo, California


Conclusion and Recommendations

As broadcast sources on Cuesta Peak relocate onto taller towers away from the core of the West Site, the RF exposure conditions at the site continue to improve. To ensure continued compliance with FCC guidelines regarding exposure to radio frequency electromagnetic fields, the Cuesta Peak Occupational Exposure Guide (OEG) should be revised to reflect the current ground level conditions and to incorporate the tables included with this report.

List of Figures

In carrying out these engineering studies, the following attached figures were prepared under my direct supervision:

1. RFR exposure standard summaries
2. Summary of FM and TV broadcast facilities
3. Plan of West Site showing revised access restrictions
4. RFR.TOWER™ calculation methodology
5. West Site tower access tables
6. East Site tower access tables.



Daniel G.P. Mansergh

June 18, 1997

Affidavit

State of California

County of Sonoma

ss:

Daniel G.P. Mansergh, being first duly sworn upon oath, deposes and says:

1. That he is a qualified engineer and is employed by the firm of Hammett & Edison, Inc., Consulting Engineers, with offices located near the city of San Francisco, California,
2. That he graduated with honors from the University of California at Santa Cruz with a Bachelor of Arts degree in 1992, completed two years of employment with Apogee Sound, Inc., and has been associated with the firm of Hammett & Edison, Inc., since October 1994,
3. That the firm of Hammett & Edison, Inc., Consulting Engineers, has been retained to evaluate the effects of recent facility changes on radio frequency radiation exposure conditions at the Cuesta Peak antenna farm near San Luis Obispo, California,
4. That such engineering work has been carried out by him or under his direction and that the results thereof are attached hereto and form a part of this affidavit, and
5. That the foregoing statement and the report regarding the aforementioned engineering work are true and correct of his own knowledge except such statements made therein on information and belief and, as to such statements, he believes them to be true.

Daniel G.P. Mansergh

Subscribed and sworn to before me this 18th day of June, 1997

ORIGINAL COPY NOTARIZED



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

970416
Affidavit

Affidavit

State of California

County of Sonoma

ss:

William F. Hammett, being first duly sworn upon oath, deposes and says:

1. That he is a qualified Registered Professional Engineer, holds California Registrations Nos. E-13026 and M-20676, which expire on June 30, 2001, and is a principal in the firm of Hammett & Edison, Inc., Consulting Engineers, with offices located near the city of San Francisco, California,
2. That he graduated from Dartmouth College with a degree in Engineering Sciences in 1977 and from the University of Illinois with a degree of Master of Science in 1978, has completed two years of employment by the Standard Oil Company and five years by Dean Witter Reynolds in various engineering, computer, and management capacities, and has been associated with the firm of Hammett & Edison, Inc., since 1985,
3. That the firm of Hammett & Edison, Inc., Consulting Engineers, has been retained to evaluate the effects of recent facility changes on radio frequency radiation exposure conditions at the Cuesta Peak antenna farm near San Luis Obispo, California,
4. That such engineering work has been carried out by him or under his direction and that the results thereof are attached hereto and form a part of this affidavit, and
5. That the foregoing statement and the report regarding the aforementioned engineering work are true and correct of his own knowledge except such statements made therein on information and belief and, as to such statements, he believes them to be true.

William F. Hammett, P.E.

Subscribed and sworn to before me this 18th day of June, 1997

ORIGINAL COPY NOTARIZED

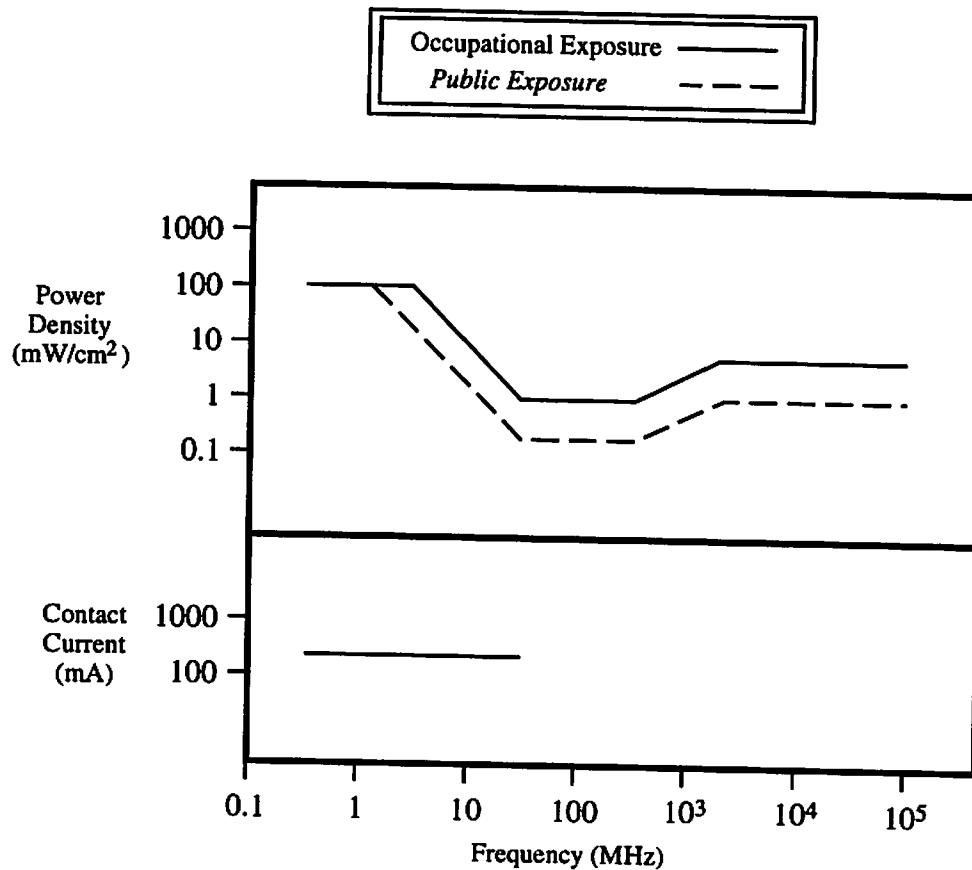
National Council on Radiation Protection and Measurements

Report No. 86 (Published 1986) "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields"

Radio Frequency Protection Guide

<u>Frequency</u>	<u>Electromagnetic Fields</u>						<u>Contact Currents</u>
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)		(mA)
0.3 – 1.34	614	614	1.63	1.63	100	100	200
1.34 – 3.0	614	823.8/f	1.63	2.19/f	100	180/f ²	200
3.0 – 30	1842/f	823.8/f	4.89/f	2.19/f	900/f ²	180/f ²	200
30 – 300	61.4	27.5	0.163	0.0729	1.0	0.2	no limit
300 – 1,500	3.54√f	1.59√f	√f/106	√f/238	f/300	f/1500	no limit
1,500 – 100,000	137	61.4	0.364	0.163	5.0	1.0	no limit

Note: f is frequency of emission, in MHz.



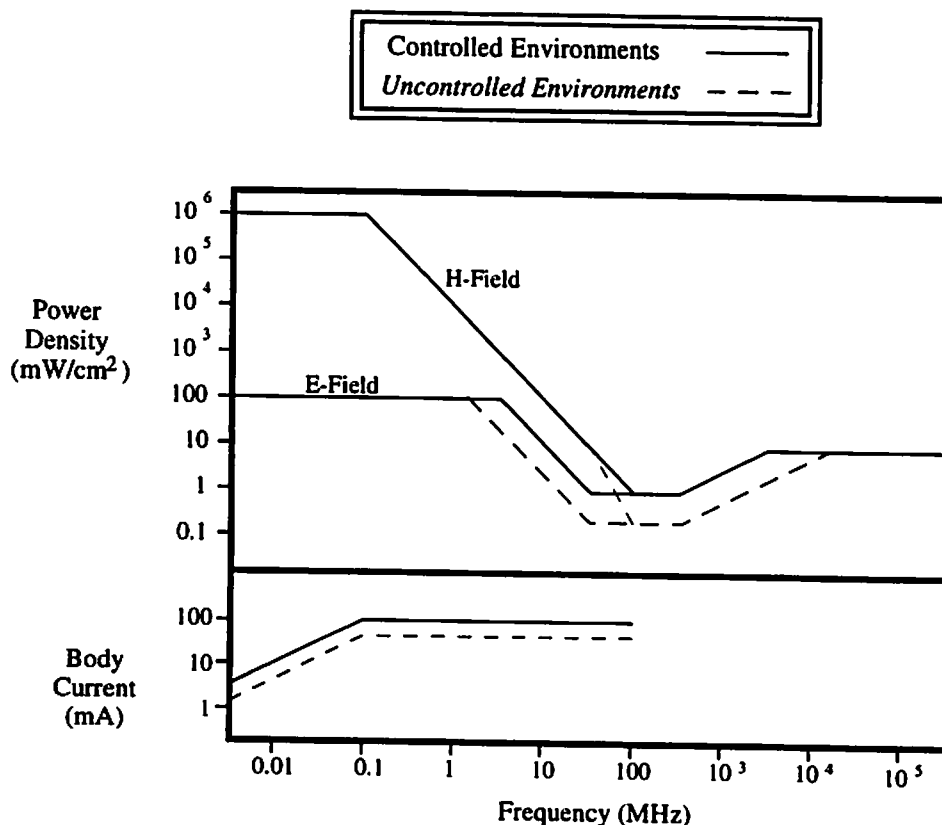
**American National Standards Institute &
Institute of Electrical and Electronics Engineers**

**ANSI/IEEE Standard C95.1-1992
"Safety Levels with Respect to Human Exposure
to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz"**

Radio Frequency Protection Guide

Frequency Applicable Range (MHz)	Electromagnetic Fields				Body Currents	
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Induced (Foot) or Contact (mA)	
0.003 – 0.1	614	614	163	163	1,000f	450f
0.1 – 1.34	614	614	16.3/f	16.3/f	100	45
1.34 – 3.0	614	823.8/f	16.3/f	16.3/f	100	45
3.0 – 30	1,842/f	823.8/f	16.3/f	16.3/f	100	45
30 – 100	61.4	27.5	16.3/f	158.3/f ^{1.668}	100	45
100 – 300	61.4	27.5	0.163	0.0729	100	45
300 – 3,000						no limit
3,000 – 15,000						no limit
15,000 – 300,000						no limit

Note: f is frequency of emission, in MHz.



Cuesta Peak Antenna Farm • San Luis Obispo, California

Summary of FM & TV Broadcast Facilities

- West Site -

<u>Tower</u>	<u>Station</u>	<u>Channel</u>	<u>Height AGL</u> *	<u>Maximum Power</u> †	<u>Operating Power</u> ‡
New CPT	K15BD Cellular	15 ~900 MHz	27.0 m various	11.9 kW —	13% —
Old CPT	K20DR	20	12.0	2.08	3%
	K36AL	36	15.0	25.0	70%
	KADE	33	23.0	60.3	90%
	KWSP	292B1	32.8	0.95	50%
	MMDS	E,H Groups	36.0	0.645	100%
KIQO	KIQO	283B	12.5	5.6	100%
K57BC	K57BC	57	16.1	0.80	71%
KSLY	KSLY	241B	13.0	5.6	103%
County 1	no broadcast antennas				
County 2	no broadcast antennas				
County 3	no broadcast antennas				
New KZOZ	KDDB	223B	38.0	4.8	90%
	KKJG	251B	47.0	4.5	100%
	KWWV	259A	52.0	0.265	82%
	KZOZ	227B	56.0	23.0	100%

- East Site -

<u>Tower</u>	<u>Station</u>	<u>Channel</u>	<u>Height AGL</u> *	<u>Maximum Power</u> †
KSBY	KSBY-TV	6	130.7 m	100.0 kW
	KCBX	211B	21.0	5.3
	KLFF	207B	53.0	4.4
	KSTT	267B	113.0	3.4
KCBX Pole	KCBX Auxiliary	211	9.3	0.06
Sonic Cable	no broadcast antennas			
Falcon Cable	no broadcast antennas			
Land Mobile	no broadcast antennas			

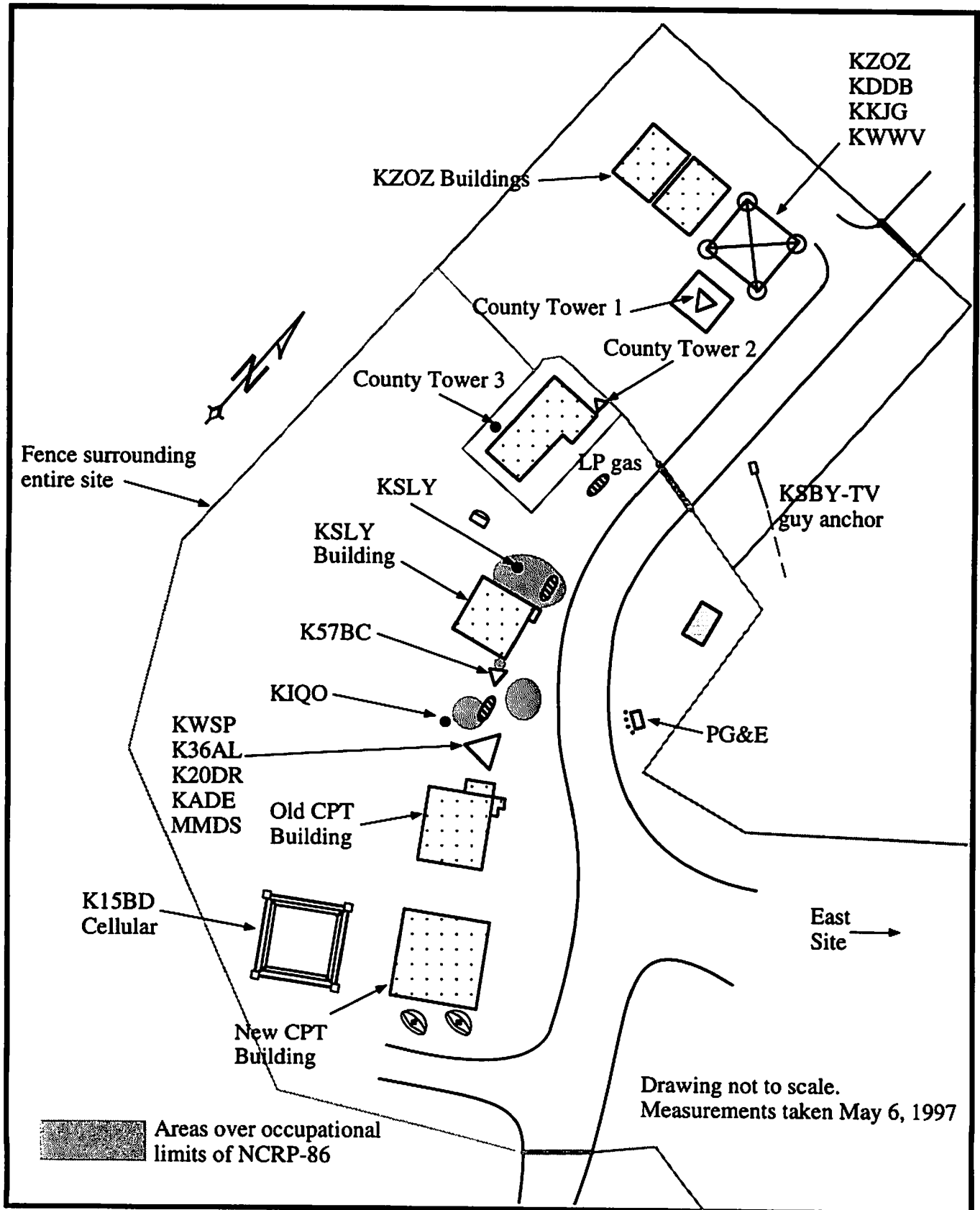
* Height of antenna center-of-radiation above tower base elevation; taken from FCC applications, from data supplied by stations, or from site survey.

† Peak visual effective radiated power for TV, maximum effective radiated power for FM.

‡ Power output of transmitter on May 6, 1997, expressed as a percentage of TPO required to make licensed ERP.

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Ground Level Access Restrictions - West Site -



RFR.TOWER™ Calculation Methodology

Determination by Computer of Compliance with Human Exposure Limitations

The U.S. Congress has required of the FCC that it evaluate its actions for possible significant impact on the environment. In Docket 79-144, the FCC adopted the radio frequency protection guide of the American National Standards Institute Standard C95.1-1982, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz." Exposures are to be averaged over a six-minute period. In 1992, ANSI published a revised standard, C95.1-1992, which defined "controlled" and "uncontrolled" environments, setting for the latter limits generally five times more restrictive. The C95.1-1992 controlled (*i.e.*, occupational) limits are approximately the same as in C95.1-1982. In Docket 93-62, the FCC adopted the exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the National Council on Radiation Protection and Measurements, a standard very similar to C95.1-1992. The effective date for applying this standard to FCC licensees is September 1, 1997.

The FCC Office of Science and Technology Bulletin No. 65 (October 1985) gives the formula for calculating power density from an individual radiation source:

$$\text{power density } S = \frac{2.56 \times 1.64 \times 100 \times \text{RFF}^2 \times [0.4 \times \text{VERP} + \text{AERP}]}{4\pi D^2}, \text{ in mW/cm}^2,$$

where VERP = total peak visual ERP (all polarizations), in kilowatts,

AERP = total aural ERP (all polarizations), in kilowatts,

RFF = relative field factor at the direction to the actual point of calculation, and

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

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 ($1.6 \times 1.6 = 2.56$). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 0.4 converts NTSC peak visual ERP to an average RMS value; for FM, cellular, and PCS stations, of course, the value of VERP is zero. The factor of 100 in the numerator converts to the desired units of power density.

This formula has been built into a computer program by Hammett & Edison that calculates the total expected RF power density at any point on a tower structure. The program allows for multiple sources on multiple towers in order to accurately model multiple-user antenna sites. Appropriate horizontal and vertical antenna patterns are used; actual vertical antenna patterns may be specified, or the pattern envelopes developed in "An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM, and TV Broadcast Services," U.S. Environmental Protection Agency, April 1985, may be used. For the standard pattern envelopes, minimum relative field values are conservatively limited to 15% for FM, 20% for VHF TV, and 10% for UHF TV. For nearby sources, the energy is assumed to radiate proportionally from each bay of the antenna to account conservatively for near-field effects.

The results of the program are typically presented in tabular form, with each row representing the compliant operating restrictions for one tower or for a particular section on one tower. The allowed operating powers for calculated RF fields at that location to remain less than the standard allows for exposures of unlimited duration are expressed as a percentage of full licensed power, and *all* stations with amounts less than 100% must reduce power simultaneously in order to meet the calculated conditions. Also typically shown is the Free Height, below which the calculated power density levels are less than the standard for all operating configurations of main and auxiliary antennas. It is recommended that, to the extent possible, the antennas for non-broadcast services on a tower be mounted below the calculated Free Height, such that access to them need not require reductions in power of the broadcast facilities.

The reduced-power operating conditions shown are those that we believe to be the most equitable, in that they force the largest contributors of RF power density to reduce power the most. In some situations, several equally attractive combinations may exist, in which case different options may be shown in the table, identified by sequential lower case letters next to the tower height at which the power reductions are shown; each is an acceptable method of achieving compliance. Certain tables of results will include separate columns for the main and auxiliary antennas, when a licensed auxiliary exists; the station may operate from either antenna, at the appropriate power level shown. Unusual situations may require specifications that do not conform to the standard table format described here; in those cases footnotes on the table will explain special conditions necessary to achieve compliance.

It is specifically noted that the determinations of compliance reported in the table of results are based on available information about the site and transmitting facilities and on calculations of ambient exposure conditions. It is expected that *localized* exposure conditions may exceed calculated *ambient* conditions, particularly near antennas or guy-wire and cross-arm attachments. No attempt has been made to predict the effect of those localized effects, beyond the "ground" reflection factor included in the OST-65 formula. Measurements of actual ambient and localized fields would take precedence over any predictions of those fields, and such measurements may be desirable in areas of prolonged or frequent access.

Cuesta Peak Antenna Farm • San Luis Obispo, California

Schedule of Recommended Operating Powers to Achieve Calculated Compliance with NCRP Report No. 86 - West Site -

New Cuesta Peak Tower

<u>Height (ft)</u>	<u>K15BD</u>	<u>KADE</u>	<u>KIQO</u>	<u>K36AL</u>	<u>KSLY</u>	<u>Cellular</u>
160 – top	100	100	100	100	100	100
140 – 160	100	100	100	100	100	100
120 – 140	100	100	100	100	100	100
100 – 120	0	100	100	100	25	0
80 – 100	0	25	E	100	10	0
60 – 80	0	25	E	10	10	100
40 – 60	100	100	E	10	10	100
20 – 40	100	100	10	100	10	100
7 – 20	100	100	25	100	90	100

Free Height: 7 feet

Old Cuesta Peak Tower

<u>Height (ft)</u>	<u>KWSP</u>	<u>KADE</u>	<u>K36AL</u>	<u>K20DR</u>	<u>KIQO</u>	<u>KSLY</u>	<u>KZOZ</u>	<u>MMDS</u>
100 – top	0	0	100	100	100	25	100	0
80 – 100	25	0	100	100	E	0	75	100
60 – 80	100	0	0	100	E	0	95	100
40 – 60	100	10	0	0	E	0	100	100
20 – 40	100	100	0	0	E	0	100	100
7 – 20	100	100	100	100	10	E	100	100

Free Height: 7 feet

KIQO Tower

<u>Height (ft)</u>	<u>KIQO</u>	<u>K36AL</u>	<u>KSLY</u>	<u>K20DR</u>
40 – top	0	0	0	25
20 – 40	0	0	0	25
7 – 20	25	85	E	100

Free Height: 7 feet

Notes: Calculations based on FCC OST Bulletin No. 65, October 1985.

Entries in table represent recommended percentage of licensed power.

Power reductions apply for any access of any duration to the pertinent tower section.

Free height is the level above which NCRP may be exceeded when all facilities are operating at full licensed power.

"0" indicates that operation must cease during access to the tower section indicated, while "E" indicates that operation with 30 W exciter only can be allowed.



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

970416
Figure 5A

Cuesta Peak Antenna Farm • San Luis Obispo, California

**Schedule of Recommended Operating Powers
to Achieve Calculated Compliance with NCRP Report No. 86
- West Site -**

K57BC Tower

<u>Height (ft)</u>	<u>K57BC</u>	<u>KIOO</u>	<u>KSLY</u>	<u>K36AL</u>	<u>K20DR</u>
40 - top	0	0	0	0	90
20 - 40	100	0	0	0	95
7 - 20	100	25	E	100	100

Free Height: 7 feet

KSLY Tower

<u>Height (ft)</u>	<u>KSLY</u>	<u>KIOO</u>	<u>K36AL</u>
40 - top	0	E	E
20 - 40	0	E	10
0 - 20	E	E	100

Free Height: 0 feet

County Tower 3

<u>Height (ft)</u>	<u>KSLY</u>	<u>KIOO</u>
40 - top	0	25
20 - 40	0	25
7 - 20	25	100

Free Height: 7 feet

County Tower 2

<u>Height (ft)</u>	<u>KSLY</u>	<u>KIOO</u>
40 - top	E	E
20 - 40	E	E
7 - 20	50	100

Free Height: 7 feet

Notes: Calculations based on FCC OST Bulletin No. 65, October 1985.
Entries in table represent recommended percentage of licensed power.
Power reductions apply for any access of any duration to the pertinent tower section.
Free height is the level above which NCRP may be exceeded when all facilities are operating at full licensed power.
"0" indicates that operation must cease during access to the tower section indicated, while "E" indicates that operation with 30 W exciter only can be allowed.

Cuesta Peak Antenna Farm • San Luis Obispo, California

**Schedule of Recommended Operating Powers
to Achieve Calculated Compliance with NCRP Report No. 86
- West Site -**

County Tower 1

<u>Height (ft)</u>	<u>KZOZ</u>	<u>KSLY</u>
40 – top	10	25
19 – 40	10	100

Free Height: 19 feet

New KZOZ Tower

<u>Height (ft)</u>	<u>KKJG</u>	<u>KDDB</u>	<u>KWWV</u>	<u>KZOZ</u>
180 – top	100	100	100	0
160 – 180	0	100	0	0
140 – 160	0	0	100	0
120 – 140	0	0	100	10
100 – 120	100	0	100	10
80 – 100	100	50	100	25
60 – 80	100	100	100	25
40 – 60	100	100	100	25
30 – 40	100	100	100	90

Free Height: 30 feet

Notes: Calculations based on FCC OST Bulletin No. 65, October 1985.
Entries in table represent recommended percentage of licensed power.
Power reductions apply for any access of any duration to the pertinent tower section.
Free height is the level above which NCRP may be exceeded when all facilities are
operating at full licensed power.
“0” indicates that operation must cease during access to the tower section indicated,
while “E” indicates that operation with 30 W exciter only can be allowed.

Cuesta Peak Antenna Farm • San Luis Obispo, California

Schedule of Recommended Operating Powers to Achieve Calculated Compliance with NCRP Report No. 86 - East Site -

KSBY Tower

<u>Height (ft)</u>	<u>KSBY</u>	<u>KSTT</u>	<u>KLFF</u>	<u>KCBX</u>	
				main	aux
440 - top	0	100	100	100	100
420 - 440	0	100	100	100	100
400 - 420	0	100	100	100	100
380 - 400	25	0	100	100	100
360 - 380	100	0	100	100	100
340 - 360	100	0	100	100	100
320 - 340	100	100	100	100	100
300 - 320	100	100	100	100	100
280 - 300	100	100	100	100	100
260 - 280	100	100	100	100	100
240 - 260	100	100	100	100	100
220 - 240	100	100	100	100	100
200 - 220	100	100	100	100	100
180 - 200	100	100	0	100	100
160 - 180	100	100	0	100	100
140 - 160	100	100	100	100	100
120 - 140	100	100	100	100	100
100 - 120	100	100	100	100	100
80 - 100	100	100	100	0	100
60 - 80	100	100	100	0	100
40 - 60	100	100	100	0	100

Free Height: 40 feet

Notes: Calculations based on FCC OST Bulletin No. 65, October 1985.
 Entries in table represent recommended percentage of licensed power.
 Power reductions apply for any access of any duration to the pertinent tower section.
 Free height is the level above which NCRP may be exceeded when all facilities are
 operating at full licensed power.
 "0" indicates that operation must cease during access to the tower section indicated,
 while "E" indicates that operation with 30 W exciter only can be allowed.

Cuesta Peak Antenna Farm • San Luis Obispo, California

**Schedule of Recommended Operating Powers
to Achieve Calculated Compliance with NCRP Report No. 86
- East Site -**

KCBX Aux Tower

<u>Height (ft)</u>	<u>KCBX</u>	
	main	aux
40 - top	100	0
20 - 40	100	0
7 - 20	100	0

Free Height: 7 feet

Sonic Cable Tower

<u>Height (ft)</u>	<u>KCBX</u>	
	main	aux
45 - top	25	100

Free Height: 45 feet

Falcon Cable Tower

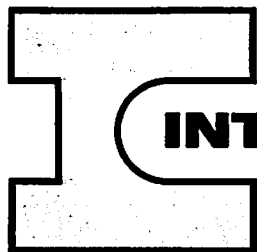
<u>Height (ft)</u>	<u>KCBX</u>	
	main	aux
50 - top	50	100

Free Height: 50 feet

Land Mobile

No climbing restrictions.

Notes: Calculations based on FCC OST Bulletin No. 65, October 1985.
Entries in table represent recommended percentage of licensed power.
Power reductions apply for any access of any duration to the pertinent tower section.
Free height is the level above which NCRP may be exceeded when all facilities are
operating at full licensed power.
"0" indicates that operation must cease during access to the tower section indicated,
while "E" indicates that operation with 30 W exciter only can be allowed.



INTERSTELLAR COMMUNICATIONS

BROADCAST FACILITY ENGINEERING

Affidavit

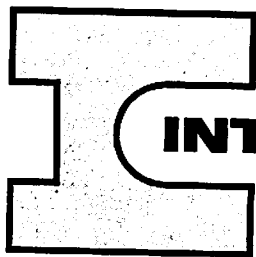
State of California
County of San Luis Obispo

William H. Bordeaux hereby certifies that:

- 1) Is a qualified engineer and owner of Interstellar Communications, with offices in San Luis Obispo, CA.
- 2) Holds a Bachelor of Engineering Technology degree from California State University, San Luis Obispo and an Associates Degree in Engineering Technology from Michigan Technological University, Houghton, Michigan.
- 3) Has operated a broadcast engineering services company since 1983 and has designed and manufactured many products used in the broadcast industry.
- 4) Holds a General Class FCC License PG-11-13142.
- 5) All engineering work appearing herein was performed by, or under the direction of him.
- 6) The preceding statements are true and correct.


William H. Bordeaux

6/23/96
Date



INTERSTELLAR COMMUNICATIONS

BROADCAST FACILITY ENGINEERING

June 23, 1998

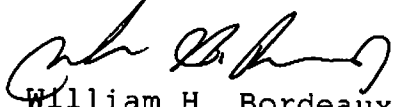
KWWV Antenna Installation Certification

On February 20, 1998, I was present at the Cuesta Peak Electronics site to insure the proper installation of the KWWV antenna.

The antenna was assembled on the ground per the manufacture's instructions. The manufacturer had marked the antenna assembly to insure proper orientation of the driven element relative to the stand-off which was used to attach it to the tower. Once the antenna was assembled, using a straight edge and protractor, I verified that the angle was 15 degrees as called for in the installation drawings.

Once the antenna was installed on the tower, I joined the survey crew to be sure that the proper antenna azimuth was sighted. The survey crew directed the tower crew to adjust the azimuth of the antenna stand-off to achieve the desired 15 degree azimuth required for the antenna element.

Submitted:


William H. Bordeaux
PG-11-13142

Shively Labs

a division of Howell Laboratories, Inc.

P.O. Box 389 Harrison Hd.,
Bridgton, Maine 04009 USA

- An Employee-Owned Company -

S.O. 19,274

Report of Test 6810-1-DA

for

SALISBURY BROADCASTING CORP.

KWWV MORRO BAY, CA

(207) 647-3327
888-SHIVELY

FAX: (207) 647-8273
E-mail: sales@shively.com
Web site: www.shively.com

OBJECTIVE:

The objective of this test was to demonstrate the directional characteristics of a 6810-1-DA to meet the needs of KWWV and to comply with the requirements of the FCC construction permit, file number BPH 950412II.

RESULTS:

The measured azimuth pattern for the 6810-1-DA is shown in Figure 1. Figure 1A shows the Tabulation of the Horizontal Polarization. Figure 1B shows the Tabulation of the Vertical Polarization. The calculated elevation pattern of the antenna is shown in Figure 3. Construction permit file number BPH-950412II indicates that the Horizontal radiation component shall not exceed 0.265 kW at any azimuth and is restricted to the following values at the azimuths specified:

070-080 Degrees T: 0.054 kW

From Figure 1, the maximum radiation of the Horizontal component occurs at 250 Degrees T to 257 Degrees T and from 340 Degrees T to 346 Degrees T. At the restricted azimuth of 070-080 Degrees T the Horizontal component is 6.94 dB down from the maximum of 0.265 kW, or 0.053 kW.

MEMBER.

NAB
BROADCASTERS


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NATIONAL TRANSLATION ASSOCIATION

NRB
NATIONAL RELIGIOUS BROADCASTERS

Test Report: 6810-1-DA
KWWV
Page Two

The R.M.S. value of the Horizontal component is 0.740. The total Horizontal power gain is 0.85. The R.M.S. value of the Vertical component is 0.735. The total Vertical power gain is 0.83.

METHOD OF DIRECTIONALIZATION:

The 6810 bay was mounted on a tower of exact scale to a Coastal 52 1/2" face square tower. The spacing of the antenna to the tower was varied to achieve the vertical pattern shown in Figure 1. A horizontal parasitic element was placed directly under the bay. The position of this horizontal parasitic element was changed until the horizontal pattern shown in Figure 1 was achieved. See Figure 2 for mechanical details.

METHOD OF MEASUREMENT:

As allowed by the construction permit, file number BPH-950412II, a single level of the 6810-1-DA was set up on the Howell Laboratories scale model antenna pattern measuring range. A scale of 4.5:1 was used.

SUPERVISION:

The tests were carried out under the direction of Robert A. Surette, Manager of RF Engineering. Mr. Surette was graduated from Lowell Technological Institute, Lowell, Massachusetts in 1973 with the degree of Bachelor of Science in Electrical Engineering. He has been directly involved with both full size and scale model pattern measurements since 1974 as an RF Engineer with Shively Labs and with Dielectric Communications (a unit of General Signal). He is currently an Associate Member of the Association of Federal Communications Consulting Engineers and a Member of IEEE.

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HOWELL LABS

0004/009

Test Report 6810-1-DA
KWWV
Page Three

EQUIPMENT:

The scale model pattern range consists of a wooden rotating pedestal equipped with a position indicator. The scale model bay is placed on the top of this pedestal and is used in the transmission mode at approximately 20 feet above ground level. The receiving corner reflector is spaced 50 feet away from the rotating pedestal at the same level above ground as the transmitting model. The transmitting and receiving signals are carried to a control building by means of RG-9/U double shielded coax cable.

The control building is equipped with:

Hewlett Packard Model 8505 Network Analyzer

PC Based Controller

Hewlett Packard 7550A Graphics Plotter

The test equipment is calibrated to MIL STD 45662.

TEST PROCEDURES:

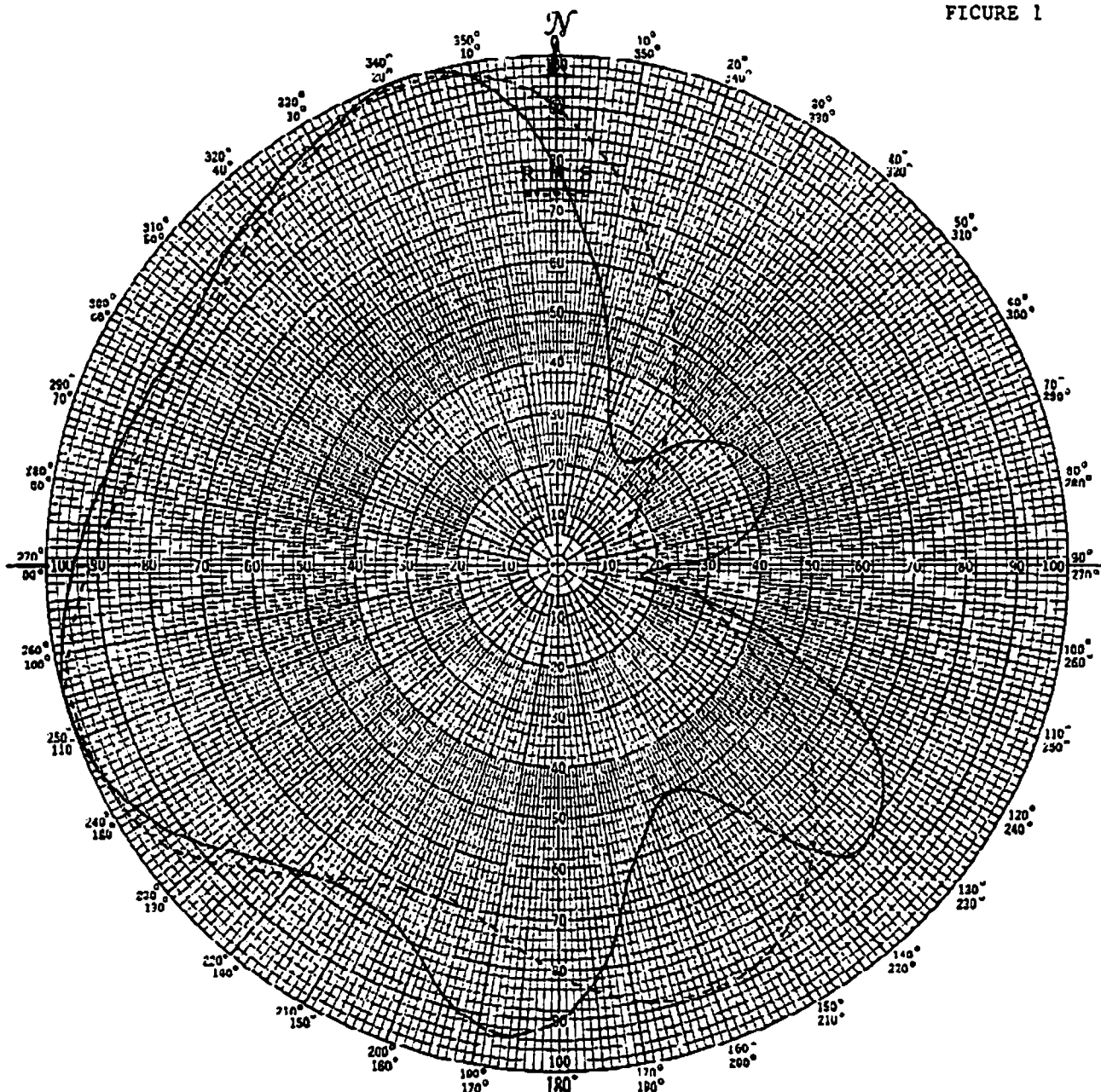
The corner reflector is mounted so that the horizontal and vertical azimuth patterns are measured independently by rotating the corner reflector by 90 degrees. The network analyzer was set to 448.65 MHz. Calibrated pads are used to check the linearity of the measuring system. For example, 6 dB padding yields a scale reading of 50 from an unpadded reading of 100 in voltage. From the recorded patterns, the R.M.S. values are calculated and recorded as shown in Figure 1.

Respectfully submitted by:

Robert A. Surratt
Manager of RF Engineering
S/O 19,274
February 26, 1998



FIGURE 1



Shively Labs

OBJECT NAME KWV MORRO DAY, CA
 PROJECT NUMBER 19,274 DATE 2/26/98
 MODEL (X) FULL SCALE () FREQUENCY 448.65/99.7 MHz
 POLARIZATION HORIZ (—); VERT (----)
 CURVE PLOTTED IN: VOLTA (X) POWER () DB ()
 OBSERVER RAS

ANTENNA TYPE 6810-1-DA
 PATTERN TYPE DIRECTIONAL AZIMUTH
 REMARKS: SEE FIGURE 2 FOR MECHANICAL
DETAILS

Figure 1A

S/O 19274
TABULATION OF HORIZONTAL POLARIZATION
KWWV Morro Bay, CA

DEGREE	RELATIVE FIELD	DEGREE	RELATIVE FIELD
0	0.790	180	0.900
10	0.530	190	0.920
20	0.310	200	0.820
30	0.250	210	0.765
40	0.280	220	0.790
45	0.320	225	0.820
50	0.390	230	0.870
60	0.430	240	0.955
70	0.450	250	1.000
80	0.380	260	0.985
90	0.250	270	0.950
100	0.200	280	0.910
110	0.480	290	0.875
120	0.720	300	0.860
130	0.810	310	0.980
135	0.810	315	0.900
140	0.720	320	0.915
150	0.520	330	0.960
160	0.540	340	1.000
170	0.710	350	0.970

Figure 1B

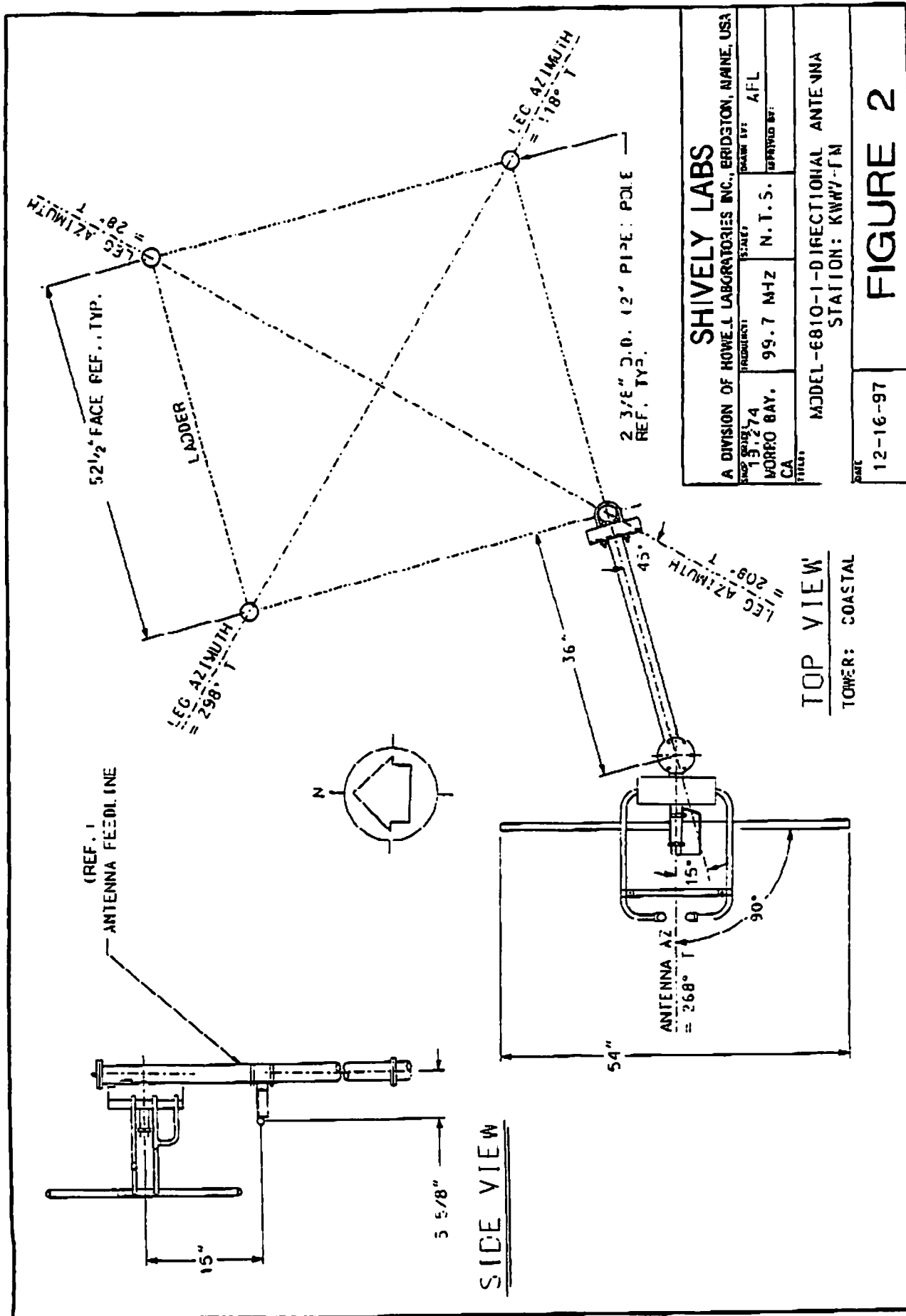
S/O 19,274
TABULATION OF VERTICAL POLARIZATION
KWWV Morro Bay, CA

DEGREE	RELATIVE FIELD	DEGREE	RELATIVE FIELD
0	0.900	180	0.810
10	0.760	190	0.730
20	0.610	200	0.695
30	0.470	210	0.730
40	0.340	220	0.795
45	0.290	225	0.850
50	0.240	230	0.900
60	0.180	240	0.975
70	0.155	250	0.990
80	0.165	260	0.970
90	0.200	270	0.910
100	0.260	280	0.865
110	0.370	290	0.840
120	0.520	300	0.840
130	0.650	310	0.850
135	0.720	315	0.870
140	0.770	320	0.890
150	0.860	330	0.950
160	0.890	340	0.990
170	0.880	350	0.970

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HOWELL LABS

008/009





ENGINEERING
DEVELOPMENT
ASSOCIATES

February 23, 1998

Kathy Signorelli
Salsbury Broadcasting
4115 Broad St.
San Luis Obispo, Ca 93401

**RE: KWWV Antenna Certification, Cuesta Peak, County of San Luis
Obispo
EDA No. 2-2183-000**

Dear Ms. Signorelli:

On February 20, 1998, we performed a solar observation to determine accurate true north and measured the antenna for KWWV radio at Cuesta Peak. Since the antenna was too short to sight from a distance of 400 feet, we had the mounting arm of the antenna adjusted to an azimuth of 253° 00' 00". The engineer assured us that the antenna was rotated the proper angle of 15° from the mounting arm, thus allowing for an antenna azimuth of 268° 00' 00".

The attached sketch shows the relationship between the antenna and the mounting arm.

Please call if you have any questions.

Sincerely,

ENGINEERING DEVELOPMENT ASSOCIATES

Michael B. Stanton, PLS

xc: Bill Bordeuax, Interstellar Communications

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W. CUESTA RIDGE



SCALE 1"=50'

200' TOWER

Az 268°00'00" 326.72'
TO TIP ANTENNA

Az 253°00'00" 336.42'
TO MOUNTING ARM

KWWV ANTENNA
ON SW COR

Az 50°46'28" 403.90'

SIGHT SUPPORT
POLE FOR DISH
ON BLDG.

N66°34'58"E
Az 66°34'58" BY SOLAR OBSERVATION

ACCESS ROAD TO TOWER

SET 5/
REB.

Az 176°46'47" 244.70'
N03°13'13"W

BASELINE

SET 5/
REB.

GEODETIC POSITION:

N. 35° 21' 36.3"
W. 120° 39' 26.5"

TO
100' HIGH POINT

