

## **Engineering Statement**

**The construction authorized in the Construction Permit which this License Application seeks to cover did not, in fact, entail any new construction.**

**KCSN is simply seeking to maximize the ERP permitted for its Class of station (B1) by increasing its ERP with the existing, licensed antenna.**

**By way of the instant Construction Permit, KCSN will increase its ERP by 50 watts – from the current licensed value of 0.32 kW (H + V) to 0.39 kW (H + V), thereby maximizing the allowable ERP for this Class. Therefore, the provisions of the Construction Permit will be fulfilled by increasing the Transmitter Power Output from 0.42 kw to 0.51 kw.**

**The existing Dielectric directional antenna was not moved or modified in any way.**

**In the attached Exhibit, we have re-submitted the Statements and data that were used to support the currently licensed facility when the original Form 302-FM was filed in January, 2000.**

**Michael Worrall  
Chief Operator, KCSN  
September 03, 2002**

# **Exhibit 1**

**Engineering Statement**

**Affidavit of Supervising Engineer**

**Affidavit of Licensed Land Surveyor**

**Directional Antenna Details with Engineering Statement**

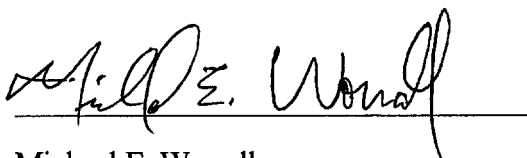
## AFFIDAVIT OF SUPERVISING ENGINEER

The installation of the KCSN Dielectric directional antenna system was supervised by Michael E. Worrall, Chief Operator of KCSN. Mr. Worrall has been employed on a full-time basis as a radio broadcast station Chief Operator since 1979. He has prepared numerous application for radio broadcast facilities before the FCC. Besides his current position at KCSN, he also serves as Assistant Chief Engineer at stations KABC / KLOS / KDIS, Los Angeles.

The antenna system was installed by the firm of P&R Tower Company of Sacramento, California.

At all phases of installation, the instructions provided by Dielectric were adhered to and followed precisely.

It is my belief that the antenna system has been installed pursuant to the manufacturer's instructions.

A handwritten signature in cursive script, reading "Michael E. Worrall", written over a horizontal line.

Michael E. Worrall

1 - 19 - 2000

# NICK KAZEM INC.

CIVIL ENGINEERS AND LAND SURVEYORS

4966 TOPANGA CYN BLVD.

WOODLAND HILLS, CA 91364

TEL: 818\ 999-9890

FAX: 818\ 999-9896

January 19, 2000

Mr. Mike Worrall  
CSUN / KCSN  
Northridge, California

Subject: KCSN antenna alignment

Dear Mr. Worrall;

This is to verify that as per our survey of the KCSN antenna on 1-19-2000, the antenna alignment is in agreement with the Dielectric Installation Instructions for antenna "DCPJ-1-2-DA KCSN" dated 1-26-1999, Dielectric drawing number 84256.

Sincerely;

*Nick Kazem*  
Nick Kazem  
LS 7022



# **PATTERN CERTIFICATION**

## **Method of Measurement**

The azimuth pattern for KCSN, Dielectric Document KCSN112198-1, was measured in the following manner.

A single model of the DCPJ panel radiator at a scale of 4.4:1 was mounted on a similarly scaled model of the Tower according to information provided us by the station; please see Dielectric Document KCSN112398-1 for a sketch of the installation. The antenna under test, all parasitics, all known tower appurtenances, and the tower section were rotated through 360 degrees while receiving a signal at the appropriate frequency from a linear cavity-backed source antenna which was rotated as required to excite either vertically or horizontally polarized fields.

The two antennas were mounted at identical elevations and at opposite ends of an anechoic chamber. Reflections and noise were absorbed by RF absorbers surrounding the antenna under test. A HP 8656 Generator and HP 8508A Voltmeter were used to supply the RF signal to the source antenna at 4.4 times the fundamental FM frequency and to receive the signal intercepted by the antenna under test. The received signal was converted to a relative level (in dB), referenced to the source. This level was stored on a computer acting as the master controller on an IEEE-488 based control bus to which all instruments were connected.

A stepper motor was used to provide computer control of the azimuth angle. The test antenna was rotated through the full 360 degrees of azimuth motion while the computer monitored and stored azimuth angle/received level data pairs. The computer also provided the facilities to plot the information to the monitor and printer.

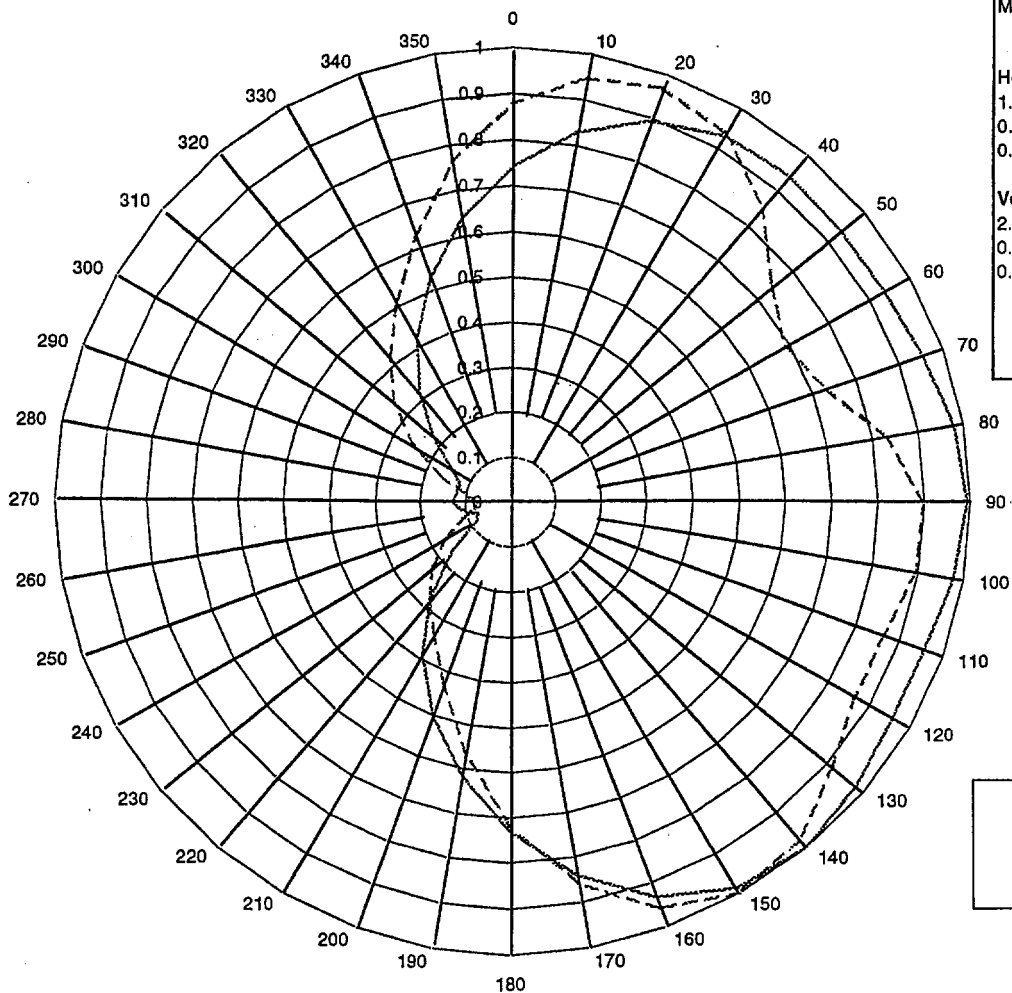
## **STATEMENT OF QUALIFICATIONS**

Henry Downs received a B.Sc. in Electrical Engineering from the Heriot Watt University in Scotland in 1981 and a Masters Degree in Microwave engineering in 1985. He has over 15 years of experience in r. f. engineering and broadcast technology and has been employed by Dielectric Communications since early 1998.

Signed by: Henry Downs  
Date: 11/24/98

# DIELECTRIC

Field Plot



DRAWING NO :  
KCSN111198-1  
MEASURED PATTERN  
ANTENNA TYPE :DPJ  
FREQUENCY :88.5 MHz  
Horizontal field RMS 0.71  
Vertical field RMS 0.69  
GAIN :  
Max. Gain : 0.944

Horizontal :  
1.98 Azimuth Gain  
0.477 Array Gain  
0.944 Total Gain

Vertical :  
2.12 Azimuth Gain  
0.443 Array gal  
0.940 total gain

--- Vpol

— Hpol

**DIELECTRIC COMMUNICATIONS**

RAYMOND, MAINE TEL 207-655-4555 FAX 207-655-7120

Tabulation for Pattern KCSN 111198-1

Azimuth	Horizontal		Vertical	
	Rel. Field	dB	Rel. Field	dB
0	0.74	-2.62	0.88	-1.15
10	0.83	-1.65	0.95	-0.47
20	0.89	-0.99	0.97	-0.28
30	0.93	-0.63	0.94	-0.57
40	0.94	-0.53	0.85	-1.41
50	0.94	-0.57	0.74	-2.60
60	0.94	-0.57	0.69	-3.24
70	0.95	-0.42	0.73	-2.70
80	0.98	-0.18	0.83	-1.64
90	0.99	-0.07	0.90	-0.95
100	0.98	-0.20	0.89	-0.97
110	0.96	-0.39	0.86	-1.29
120	0.96	-0.38	0.86	-1.27
130	0.98	-0.17	0.91	-0.78
140	1.00	0.00	0.98	-0.19
150	0.99	-0.11	1.00	0.00
160	0.93	-0.63	0.96	-0.39
170	0.84	-1.54	0.86	-1.36
180	0.73	-2.75	0.72	-2.89
190	0.62	-4.22	0.56	-4.97
200	0.50	-6.03	0.43	-7.34
210	0.39	-8.25	0.34	-9.41
220	0.27	-11.24	0.28	-11.08
230	0.17	-15.63	0.23	-12.93
240	0.09	-21.28	0.17	-15.51
250	0.07	-22.55	0.11	-19.00
260	0.11	-19.42	0.08	-21.94
270	0.13	-17.94	0.07	-22.54
280	0.12	-18.35	0.10	-20.17
290	0.12	-18.45	0.16	-15.90
300	0.15	-16.42	0.25	-12.01
310	0.22	-13.14	0.34	-9.41
320	0.31	-10.09	0.42	-7.59
330	0.42	-7.60	0.51	-5.86
340	0.53	-5.57	0.62	-4.09
350	0.64	-3.91	0.76	-2.39
RMS	0.71		0.69	
Power Split	% Power in H Pol.	51.82	% power in V. Pol	48.18

