

**RADIOFREQUENCY ELECTROMAGNETIC FIELD  
POWER DENSITY CALCULATIONS  
FOR  
FM STATION KTWV, CH 234B, LOS ANGELES, CA  
FOR  
REPLACEMENT FOUR ELEMENT  
 $\frac{3}{4}$  WAVELENGTH SPACED ERI MODEL  
WITH -3.5 DEGREE ELECTRICAL BEAM TILT**

**AUGUST 2002**

**BY:  
BEEM CO.  
ARCADIA, CA  
0(626) 446-3468**

## **ENGINEERING STATEMENT OF JOEL T. SAXBERG**

**FM Station KTVW, CH 234B, 94.7 MHz., Los Angeles, California has ordered a replacement main antenna. An ERI model will replace a Dielectric model of similar design. Both antennas are four element,  $\frac{3}{4}$  wavelength spaced, with  $-3.5$  degrees of downward electrical beam tilt. Power density values of the radiofrequency electromagnetic field at two meters about ground level were calculated for the replacement antenna using the manufacturers Theoretical Vertical Plane Relative Field values.**

**Calculations yield a maximum power density of approximately  $0.13 \text{ mW/cm}^2$  at a depression angle of  $-60$  degrees. This equates to an approximate distance of 19 meters out from the antenna support structure. This value is less than the  $0.2 \text{ mW/cm}^2$  maximum permissible exposure level established for the general public.**

**MEASUREMENTS – Upon completion of the installation of the replacement antenna, site measurements will be conducted to insure that MPE levels are not exceeded in controlled and uncontrolled areas around the KTVW antenna. A copy of which will be made part of the stations engineering files.**

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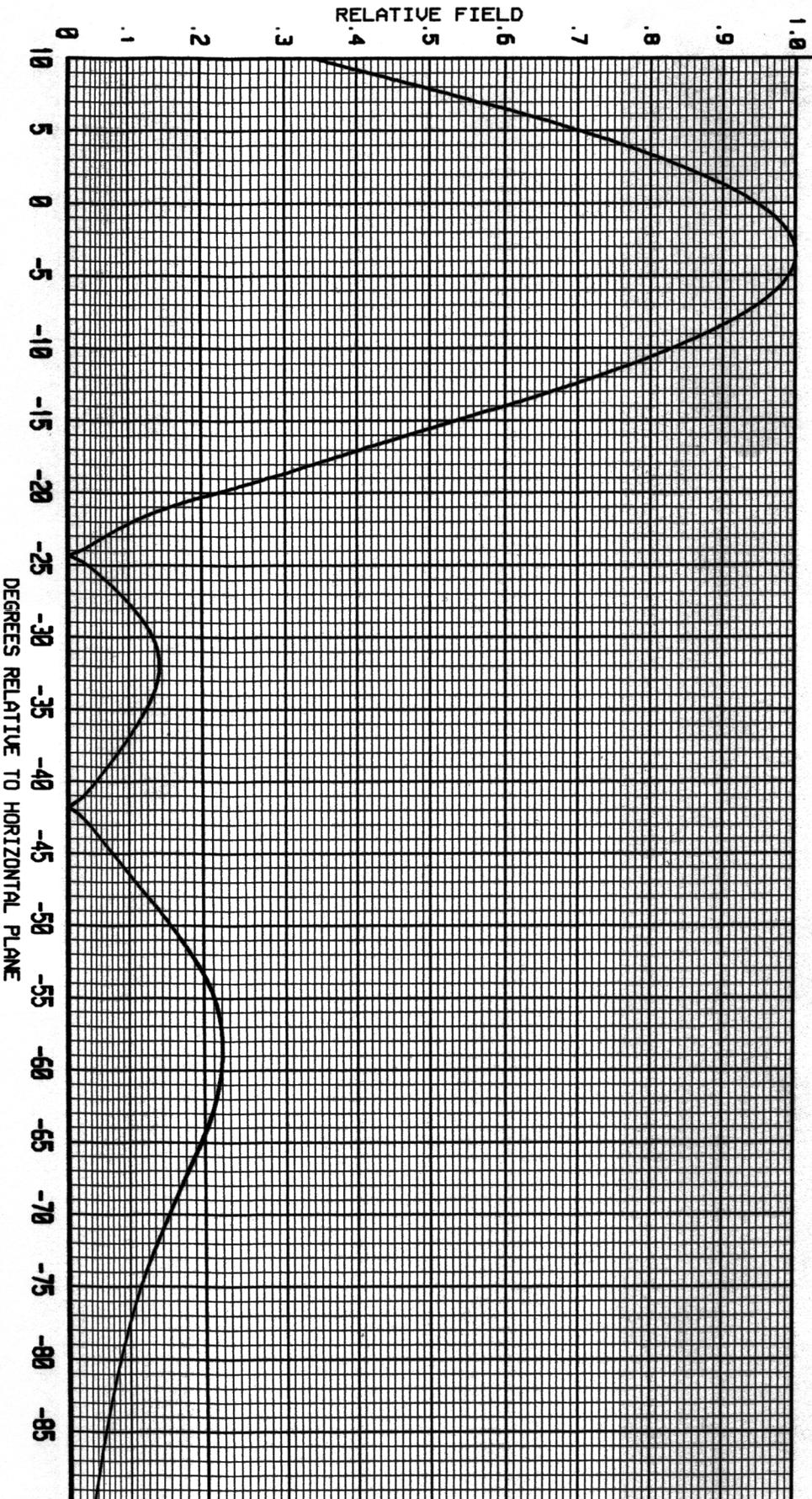
ELECTRONICS RESEARCH, INC.  
7777 GARDNER ROAD  
CHANDLER, IN. 47610  
FIGURE 4SP

-----THEORETICAL-----  
VERTICAL PLANE RELATIVE FIELD

4 ERI TYPE SHP, SHPX, LP, OR LPX ELEMENTS  
-3.5 DEGREE(S) ELECTRICAL BEAM TILT  
0 PERCENT FIRST NULL FILL  
0 PERCENT SECOND NULL FILL

JUNE 28, 2002  
ELEMENT SPACING:  
0.75 WAVELENGTH

POWER GAIN IS 1.611 IN THE HORIZONTAL PLANE(1.800 IN THE MAX.)



**RF WORKSHEET – KTWV**

**POWER (H+V) = 116000 WATTS  
HEIGHT AGL – 2 M = 33 METERS, 3300 CM  
 $1.64 \times .64 \times 1000 \times \text{POWER}/(\pi) = 38,755,374$**

<b>DOWN ANGLE degrees</b>	<b>SLANT DIST. cm</b>	<b>REL. FIELD from graph</b>	<b>POWER DENSITY mW/cm<sup>2</sup></b>
-90	3300	0.03	0.0032
-80	3350	0.82	0.0232
-70	3511	0.16	0.0804
-65	3641	0.20	0.1169
-60	3810	0.22	0.1292
-55	4028	0.21	0.1053
-50	4307	0.16	0.0555
-40	5133	0.04	0.0023
-30	6600	0.14	0.0174
-20	9648	0.22	0.020
-10	19003	0.83	0.073

**Power density peaks at a distance away from the tower of approximately 62.5' or 19 meters to a value of 0.129 mW/cm<sup>2</sup>.**

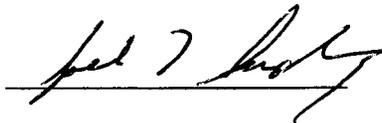
## ENGINEERING CERTIFICATION

**JOEL T. SAXBERG** deposes and says:

1. That he is President of Broadcast Engineering and Equipment Maintenance Company, "**BEEM CO.**", radio engineering consultants. **BEEM CO.** maintains offices at: 2322 S. Second Avenue, Arcadia, CA 91006. Telephone (626) 446-3468
2. That he was graduated from California State University at Los Angeles, February 1966, with a Bachelor of Science degree in Electronic Engineering. He received a MS degree in Electronic Engineering Technology in August 1996.
3. That he has submitted many applications to the Federal Communications Commission for broadcast and auxiliary broadcast construction permits and licenses.
4. That his experience in broadcast engineering is a matter of record and he has spent over thirty years working in the field of radio engineering.
5. That the attached engineering exhibit(s) and report(s) were prepared by him or under his direction and supervision. That he believes the facts stated therein to be both true and accurate. Statements that are based on information supplied by others are also believed to be true and accurate.
6. That he has performed field work on AM and FM broadcast transmitting systems throughout this country and continues to provide technical consulting services on a daily basis to broadcasters.
7. That he declares under penalty of perjury the foregoing is true and correct.

Executed on

8/9/02



Joel T. Saxberg