



ENGINEERING EXHIBIT

**APPLICATION to
MODIFY CONSTRUCTION PERMIT
BPED-20110713AAF
KXPR-(FM), SACRAMENTO, CA
CALIFORNIA STATE UNIVERSITY, SACRAMENTO**

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I. ABSTRACT

This engineering statement and the attached figures have been prepared by, or under the direction of, Ralph E Evans of Evans Associates, Consulting Communications Engineers in Mequon, Wisconsin, on behalf of California State University, licensee of KXPR (FM) in Sacramento, CA. This engineering exhibit is in support of an application to change the transmitter site specified in KXPR's previously granted construction permit site.

KXPR operates on channel 205B and presently holds a construction permit (FCC File BPED-20110713AAF) for a change in facilities. The purpose of this application is to modify that construction permit to specify a new antenna location approximately 1.05 kilometers away. The change has been occasioned by the inability of KXPR to obtain a building permit from the local planning board. The antenna location proposed herein is approximately 1.5 miles northwest of Sloughhouse, CA. Accordingly, this exhibit has been prepared.

The KXPR antenna will be mounted on a guyed tower at 152 meters (499') AGL. The effective radiated power will be 40 kilowatts. The antenna radiation center will be at 141 meters AMSL and 124 meters HAAT.

The area within the proposed 60 dBu (1.0 mV/m) contour is approximately 6,920 square kilometers, within which 1,491,432 persons reside. The area was determined using numerical integration. The population was determined on the basis of the 2010 U.S. Census population figures.

II. MINOR CHANGE

The change in the area within the 1.0 mV/m contour as a result of this modification is 7.8% in comparison to the construction permit. The change in service area compared to the licensed site is detailed on the attached FCC Form 340, Worksheet 8. KXPR believes this proposal is a **MINOR** change as defined in the FCC Rules.

A. ANTENNA SPECIFICATIONS

The following table details the new antenna height above mean sea level and the resulting distances to the 60 db contour along 8 azimuths, spaced equally:



Table 1

Antenna Radiation Center Heights Above Individual Radials Lat. 38° 30' 42" N Long. 121° 10' 14" W (NAD 27)		
Azimuth	Height (M)	Distance to 60dB Contour (km)
0°	116.3	47.43
45°	65.3	37.74
90°	96.4	41.114
135°	122	48.27
180°	142.3	51.151
225°	156.3	53.008
270°	149.6	52.143
315°	141.7	51.068

This results in a height above average terrain of 124 meters.

B. FM-AM INTERFERENCE

The proposed new site for KXPR is 1.15 km from the AM array of KATD assigned to Pittsburg, California. KATD operates with a power of 10 KW DA-D and 5 KW DA-N.

The re-radiation effect of the KXPR tower upon KATD will be investigated following construction of the new tower; field measurements and/or detuning equipment will be employed as necessary in order to ensure continued FCC compliance with KATD's instrument of authorization.

Station KATD is the only AM station that is pertinent to KXPR's relocation. Based on this allocation study, in accordance with Section 73.509 and 73.207 of the FCC Rules, the changes proposed herein will have no adverse impact upon any other AM facility, either existing or proposed, as of this date.

C. TV CHANNEL 6 OVERLAP

The following table shows the channel 6 facilities that are of concern with respect to the KXPR *Modification of Construction Permit* as described in Section 73.525 of the FCC's Rules:



Table 2

Ch 6 TV Station	Dist from Proposed (km)	Distance from Licensed (km)	Comments
K06FA Hopland CA	174.7	157.7	
NEW APP Ceres CA	116.3	103.1	
NEW APP Healdsburg CA	166.7	147.2	
KBKF-LP San Jose CA	166.4	132.5	
KBKF-LP APP San Jose	128.1	91.8	
NEW APP Sacramento CA	95.4	107.0	
KEFM –LP Sacramento CA	95.4	107.0	100 db service contour is entirely within the existing contour from the KXPR site

As shown in Figure 7b, the only TV overlap with KXPR occurs due with respect to KEFM-LP. The contours shown include:

- KXPR Licensed Site 60 DB
- KXPR Construction Permit Site 60 DB
- KXPR New Proposed Site (This Application) 60 DB
- KEFM Licensed Facilities 62 DB
- New Application for the Facilities of KEFM 62 DB

The map shows that the overlap of service contours between KXPR’s construction permit site and the new proposed site are identical, when considering either KEFM’s licensed facilities or the new recent application using a new pattern. The proposed KXPR 60 db contour follows the contour from the CP site precisely in the area of interest toward the Sacramento Channel 6 station (BDCCDVL-220110708ABD).

It is therefore concluded that no additional interference is being given to KEFM as a result of this proposal compared to the KXPY construction permit site.

D. FM STATION INTERFERENCE

The following FM facilities are pertinent in allocation:

Table 3

FM Station Information					
Call Letters	Channel	Power kW	Directional Antenna	Distance (Mi)	Bearing
KXJS	204	0.55	Y	59.29	324.14°
KZCA	206	0.004	N	43.14	54.75
KZCA CP	206	0.021	N	47.23	60.79°
KQEI-FM	207	3.3	Y	21.71	309.38°

The following section details the protection to be given to each of these facilities.

KQEI – Figure 5 shows the relevant nuisance contours with respect to KQEI. The present CP and the proposed KXPR 60 db contour completely envelop the KQEI site. The signal in the direction of this station has been maintained within 1% of the previous CP value. For both the CP and the proposed KXPR facilities, the overlap area is 11.5 square miles and containing approximately 673 people. The signal level at the KQEI site from the KXPR CP site is 49.8 db. The signal level from the proposed site is 50.5 db. This 0.7 db change is considered to be *de minimus*.

If interference should occur, the applicant accepts full responsibility for the resolution of any objectionable interference caused by KXPR as a result of the new location. The applicant will also work to resolve all known occurrences of blanketing interference within the blanketing contour as defined in Section 73.318 of the FCC Rules.

KZCA – Figure 6 is a contour protection study showing that no interference will be caused to KZCA as a result of the move.

KXLS – Figure 7 is a contour protection study showing that a small amount of interference will be caused to KXJS using the licensed parameters for the station. However, Figure 7 A shows that no interference will be caused when KXLS operates with the facilities specified in its recently-granted construction permit. Since KXLS and KXPR are co-owned, cooperation between these two stations is assured.

It is therefore this engineer's conclusion that the requested change in location from the KXPR construction permit site to the proposed site, located approximately one mile away, does not adversely impact other broadcast facilities or the environment.



E. ENVIRONMENTAL CONSIDERATIONS

The installation of an FM facility is not viewed as a significant physical impact on the surrounding area. Thus, Section 1.1307(a) of the FCC Rules does not apply to this proposal.

The proposed facility complies with the MPE limits for RF radiation as contained in the Report & Order of ET Docket 93-62, adopted by the FCC in 1996 (see worksheet #7).

The station will to reduce power or cease operations as necessary to assure worker safety with respect to RF exposure, when construction or maintenance is to be performed at the proposed site.

Therefore, in view of the above, this proposal is not deemed to be a major environmental action.

ATTACHED FIGURES

Section FCC Form 340

- Figure 1-----Vertical Plan Sketch of Antenna Structure
- Figure 2-----Topographic Map Showing Proposed Site
- Figure 2 A---- Topographic Map Showing Site Close-up
- Figure 3-----1 mv/m Contours (Licensed, Permitted, Proposed)
- Figure 4-----1 mv/m Service Over City of License
- Figure 5-----Grandfather Contour Protection Study – KQEI
- Figure 6-----Contour Study – KZCA
- Figure 7-----Contour Study - KXJS Licensed Facilities
- Figure 7 A ---- Contour Study – KXJS CP Facilities
- Figure 7 B ---- TV Channel 6 Overlap Study