ENGINEERING SUPPLEMENT
AMENDED APPLICATION
KFAC-FM
BY
LOS ANGELES BROADCASTING COMPANY, INC.
OF
LOS ANGELES, CALIFORNIA
# INDEX TO ENGINEERING SUPPLEMENT

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Exhibit No. 1 pertains to FCC Form 301, Section V-B
Exhibit No. 2 pertains to FCC Form 301, Section V-G
ENGINEERING STATEMENT

The engineering data contained in this supplement refers to the application by the Los Angeles Broadcasting Co., Inc. for a modification of Construction Permit, File No. BMPH-3097, call letters KFAC-FM.

It is requested that permission be granted to change the transmitter location from:

34 Degrees, 13 minutes, 17 seconds
North Latitude

118 Degrees, 04 minutes, 06 seconds
West Longitude

to

34 Degrees, 01 minute, 10 seconds
North Latitude

118 Degrees, 20 minutes, 48 seconds
West Longitude

The coverage requested in this application is for 3009 square miles within the fifty microvolt contour and an effective antenna height of 191.6 feet.

It is proposed to utilize a 3000 watt transmitter operating at full output. The coaxial transmission line will be 619 feet long. The manufacturer's rated efficiency for 619 feet of 1 5/8 inch line is 73.5%. A four section Collins ring antenna having a rated power gain of 4.1 will be used. The effective rated power is then (3.0)(0.735)(4.1) or 9.0405 kilowatts.

It is proposed to use the 370 foot high west tower of the present KFAC directional antenna to support the FM antenna. The center of the FM antenna will be 355 feet above ground level and 455 feet above mean sea-level.
The preceding figures of 9,04 kW at 455 feet above sea-level were used in determining the location of the contours shown as Figure 1. The contours were located using the method outlined in the Commission's Standards of Good Engineering Practice Concerning FM Broadcast Stations. It should be pointed out that the contours on radials A and H are shown to be at zero distance since the terrain rises to give negative effective elevation. In the present interim operation of KFAC-FM from the same site as proposed in this application, good service is supplied to the crest of the Hollywood Hills, a distance of about seven miles and all within line of sight from the transmitter.

The FM line is taken across the base insulator and carried up the inside of the tower for a quarter-wave at the AM frequency to isolate the line at 1330 KC. The complete FM installation has been made and is in 24 hour operation for interim FM service. The adjustment of the directional antenna has been approved by the Commission.

The profile graphs shown as Figure 2 were drawn using elevations obtained from U.S.G.S. Quadrangle Sheets, Scale 1/24,000.
METHOD OF DETERMINING AREA AND POPULATION SERVED

The areas within the 1000 and 50 uv/m contours were measured with a planimeter.

The areas are as follows:
- 1000 uv/m contour - 720 square miles
- 50 uv/m contour - 3009 square miles

The population to be served within the predicted contours was estimated by drawing the contours on a U.S. Minor Civil Division Map, census of 1940. When a contour cut through a Minor Civil Division, the population within the division was assumed to be uniform. Cities having populations in excess of 10,000 persons and were within the 50 uv/m contour but outside the 1000 uv/m contour were not considered as receiving service.

The number of persons receiving service as determined by the above method is as follows:
- 1000 uv/m contour - 2,196,529
- 50 uv/m contour - 2,329,420

The actual number of houses was determined within 0.5 and 0.25 miles of the transmitter. Using a factor of 3.2 persons per house the population is as follows:
- Within 0.25 miles - 272 persons
- Within 0.5 miles - 1772 persons
QUALIFICATION SHEET

The engineering material herein contained, and the engineering information contained in the accompanying F.C.C. Form 301, were prepared under the direction of Mr. Ron Oakley, 2785 Cedar Avenue, Long Beach, California. Mr. Oakley is Chief Engineer of the Los Angeles Broadcasting Company, Inc., and is California Registered Electrical Engineer No. 3196.

Mr. Oakley's qualifications are a matter of record with your Commission, having been accepted in many previous AM and FM applications, sky wave and ground wave field intensity measurements, antenna resistance measurements, and directional antenna proof of performance reports.
Ron Oakley, being duly sworn, upon his oath deposes and says that the facts stated in the foregoing, together with the exhibits attached thereto, are true of his own knowledge, except as to such statements as therein stated to be on information and belief, and as to such statements he believes them to be true.

Ron Oakley (Affiant)

Sworn and subscribed before me this _______ day of _______________________, 1949.

Notary Public
ELEVATIONS OBTAINED FROM USGS QUADRANGLE SHEETS
ELEVATIONS OBTAINED FROM USGS QUADRANGLE SHEETS
FIGURE 3
MAP SHOWING TOPOGRAPHY WITHIN 15 MILES OF THE TRANSMITTER SITE.
FIGURE 4
MAP SHOWING CHARACTER OF AREA AND RADIO STATIONS WITHIN 2 MILES OF KFAC TRANSMITTERS.
FIGURE 5
MAP SHOWING LOCATION OF
KFAC MAIN STUDIO AND TRANSMITTERS.

Los Angeles
and Vicinity
COLLINS 4 RING
FM ANTENNA

FM LINE CONNECTED TO TOWER

FM TRANSMISSION LINE

GROUND LEVEL (EL. 100')
FIGURE 7
AERIAL PHOTOGRAPH - AUGUST 1947
SCALE: ONE INCH EQUALS 1530 FEET
MAP OF TRANSMITTER STATION
LOS ANGELES BROADCASTING CO., INC.
LOS ANGELES, CALIFORNIA.
SHOWING LOCATION OF FENCES & PROPERTY LINES.

AUGUST 1946
PAUL M. THOMAS, CIVIL ENGINEER