

TECHNICAL EXHIBIT  
AMENDMENT TO PENDING  
APPLICATION FOR FM CONSTRUCTION PERMIT  
FM TRANSLATOR W294BL  
BIRMINGHAM, ALABAMA  
CH 297D 0.099 KW

Technical Narrative

This Technical Exhibit was prepared in support of an amendment to the pending application for construction permit for a FM translator station W294BL at Calera, Alabama. W294BL is currently licensed to operate with an effective radiated power (ERP) of 50 watts (BLFT-20120127AEF). This application proposes to increase the effective radiated power to 99 watts, change frequency to Channel 297 (107.3 MHz), and relocate its transmitter site to another tower located atop Red Mountain in Birmingham. This translator station will share a common antenna with other FM translators on the tower. This application is classified as a minor change as there will be contour overlap with the present and proposed 60 dBu contours. The translator will remain a fill-in translator for WENN(AM) on 1320 kHz assigned to Birmingham, Alabama.

Tower Registration

The proposed antenna supporting structure is located on a registered structure, ASR number 1037278.

### Predicted Coverage Contour

The predicted 60 dBu coverage contour was calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km from the proposed site were computed using the N.G.D.C. 30-second terrain database. The distances to the predicted 60 dBu coverage contour for the proposal was determined using the average elevations of radials spaced every 30-degrees of azimuth. The antenna radiation center height above average terrain and the ERP in each radial direction were used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to the contour. Figure 3 is a map showing the predicted 60 dBu coverage contour of the proposed translator facility.

The presently licensed 60 dBu contour is also shown on the map to indicate this is a minor change application.

### Allocation Considerations

Toward all other licensed and authorized stations, there is no prohibited contour overlap predicted except toward: WBPT(FM) on Channel 295C0 (106.9 MHz) at Homewood, Alabama and WUHT(FM) on Channel 299C1 (107.7 MHz) at Birmingham.

The protected 60 dBu contours of both WBPT(FM) and WUHT(FM) overlap the proposed W294BL 100 dBu interfering contour. However, no actual interference is predicted to occur to any populated area as required by Section 74.1204(d) of the Commission's Rules. It is noted that the herein proposed W294BL is essentially co-located with WBPT(FM) and WUHT(FM). The proposed translator transmitter site is located only 120 meters away from both WBPT(FM) and WUHT(FM).

The maximum proposed W294BL effective radiated power of 99 watts is 26 dB below the WUHT(FM) effective radiated power and 30 dB below the WBPT(FM) effective radiated power. Therefore, it is obvious that the Section 74.1204(d) requirement of the lack of affected population due to this contour overlap will occur, as W294BL will not produce a field where the -40 dB desired-to-undesired ratio is exceeded to either of these two stations.

#### Radio Frequency Exposure Analysis

The proposal is categorically excluded from environmental processing, as an existing tower site is to be employed, and the proposal complies with the FCC Rules concerning human exposure to radio frequency (RF) energy. The proposal will not exceed one percent of the RF exposure limit for general population/uncontrolled environments for the frequency proposed. The calculation of RF energy at ground level was made under the procedures of OET Bulletin No. 65.<sup>1</sup> The formula employed is as follows:

$$S = \frac{(33.4)F^2P}{R^2}$$

Where,  $S$  = power density in  $\mu\text{W}/\text{cm}^2$ ,  $F$  = relative field factor at the angle to the calculation point,  $P$  = the total effective radiated power relative to a dipole in watts, and  $R$  = distance from the antenna radiation center to the calculation point in meters. Based on the conservative assumption of a relative field factor of 1.0 with a total effective radiated power of 99 watts, and an antenna radiation center height above ground of 258 meters (845 feet), the calculated power density will not exceed  $0.5 \mu\text{W}/\text{cm}^2$ . Therefore, the calculated RF exposure at ground level will not exceed one percent of the limit of  $200 \mu\text{W}/\text{cm}^2$  for an uncontrolled electromagnetic environment. As the predicted exposure contribution is less than five percent, consideration of other emitters is not necessary.

---

<sup>1</sup> Federal Communications Commission OET Bulletin No. 65, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01, August 1997).

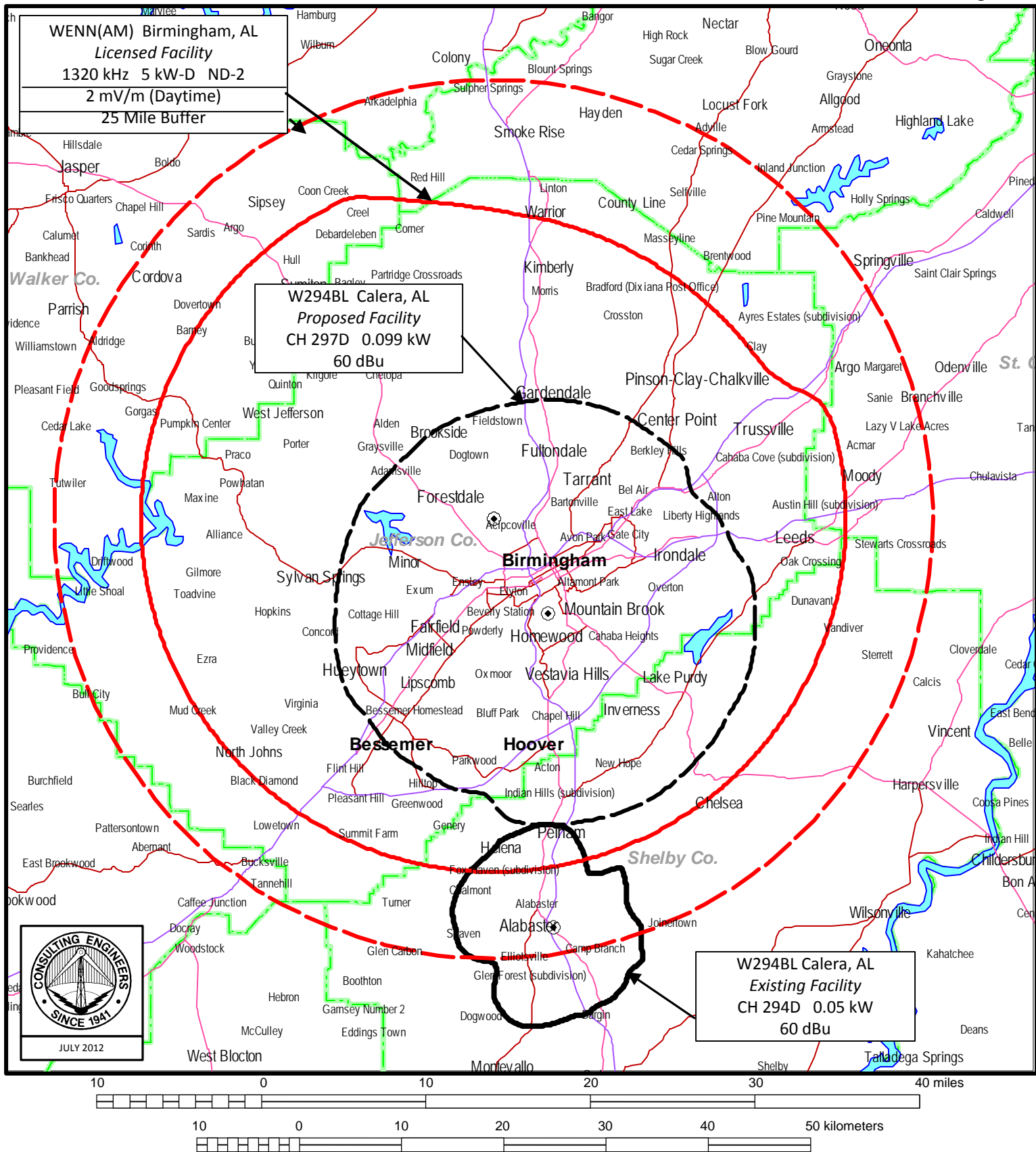
The transmitter site shall be restricted from access. In the event that personnel are required to climb the structure, the proposed FM translator transmissions shall be reduced or terminated as necessary to prevent RF exposure above the FCC recommended limits.

Charles A. Cooper

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237  
941.329.6000

August 1, 2012

Figure 1



## FCC PREDICTED COVERAGE CONTOURS

FM TRANSLATOR W294BL

CALERA, ALABAMA

CH 297D 0.099 KW

du Treil, Lundin & Rackley, Inc Sarasota, Florida