

**FORM 301
EXHIBIT ATTACHMENT
FM AUXILIARY ANTENNA APPLICATION
KBPA 100 KW 329 M HAAT CH. 278C0
SAN MARCOS, TEXAS**

TECHNICAL PROPOSAL

The applicant, Emmis Austin Radio Broadcasting Company, L.P., requests authority to employ an auxiliary back-up antenna for FM broadcast station KBPA, Channel 278C0, San Marcos, TX, Facility ID No. 41213. Specifically, the proposal involves a back-up facility that will operate at 100 kW effective radiated power (ERP) using a nondirectional antenna side-mounted on the existing main facility tower at a radiation center height above average terrain (HAAT) of 329 meters. The auxiliary antenna will also be used for future IBOC transmissions pursuant to the provision in MM Docket No. 99-325. Accordingly, use of separate antennas for analog and digital signals is permissible provided the following requirements are met: 1) the hybrid system will involve a licensed auxiliary antenna for digital transmission; 2) the auxiliary antenna location is within three seconds of latitude and longitude of the main facility; and, 3) the auxiliary antenna HAAT is between 70 and 100 percent of the HAAT of the main antenna. The back-up facility will be constructed in compliance with this criteria and Special Temporary Authority (STA) will be requested to cover the implementation of the IBOC system.

It is apparent that the specified back-up facility will not result in any extension of coverage beyond the 1.0 mV/m contour of the main authorization as required in Section 73.1675(a) of the Commission's rules. A contour map demonstrating compliance is not necessary since the auxiliary antenna proposal involves co-location with the main station at a lower HAAT.

ENVIRONMENTAL EXCLUSION

As described above, the applicant seeks authority to cover the installation of an auxiliary antenna system on the same tower structure that supports the transmitting antenna of the associated main station. The specified antenna structure was constructed on or about March 31, 1987 and is registered with the FCC, ASRN 1042431. Since human exposure to radio-frequency (RF) energy will not exceed the safety standards as detailed below, the requested auxiliary antenna authorization does require further environmental evaluation.

GROUND LEVEL EXPOSURE

Operation of the new auxiliary antenna will not result in RF contributions exceeding the *RF Radiation Exposure Limits* specified in Section 1.1310. The proposed back-up facility will transmit on FM Channel 278, 103.5 MHz, and the maximum permissible exposure (MPE) limits for this frequency are 200 $\mu\text{W}/\text{cm}^2$ for general (uncontrolled) exposure and 1,000 $\mu\text{W}/\text{cm}^2$ for occupational (controlled) exposure. Compliance with these limits has been established based on a “worst case” estimation of ground-level power density using the Commission's *FM Model* software, Version 2.10 Beta, which is designed to calculate power density levels accessible at locations two meters above ground for certain approved FM antenna types.

The antenna type to be employed is a Jampro Penetrator series, Model JHPC-10. Center of radiation for the specified 10 bay (full-wave spaced) circularly polarized antenna is 304 meters above ground. The “Double V” dipole design of the Jampro Penetrator series is classified by the Commission as a Type 2 antenna. This category of antenna is approved for evaluation using the *FM Model* software and attached is a power density versus distance graph depicting the worst case scenario for ground-level exposure of 6.8

$\mu\text{W}/\text{cm}^2$ at a horizontal distance of 64 meters out from the tower base. Since the estimated maximum exposure level is less than 5% of the MPE limits for both uncontrolled and controlled exposure, the applicant is not required to further evaluate the antenna location with respect to other RF contributors.

OCCUPATIONAL EXPOSURE

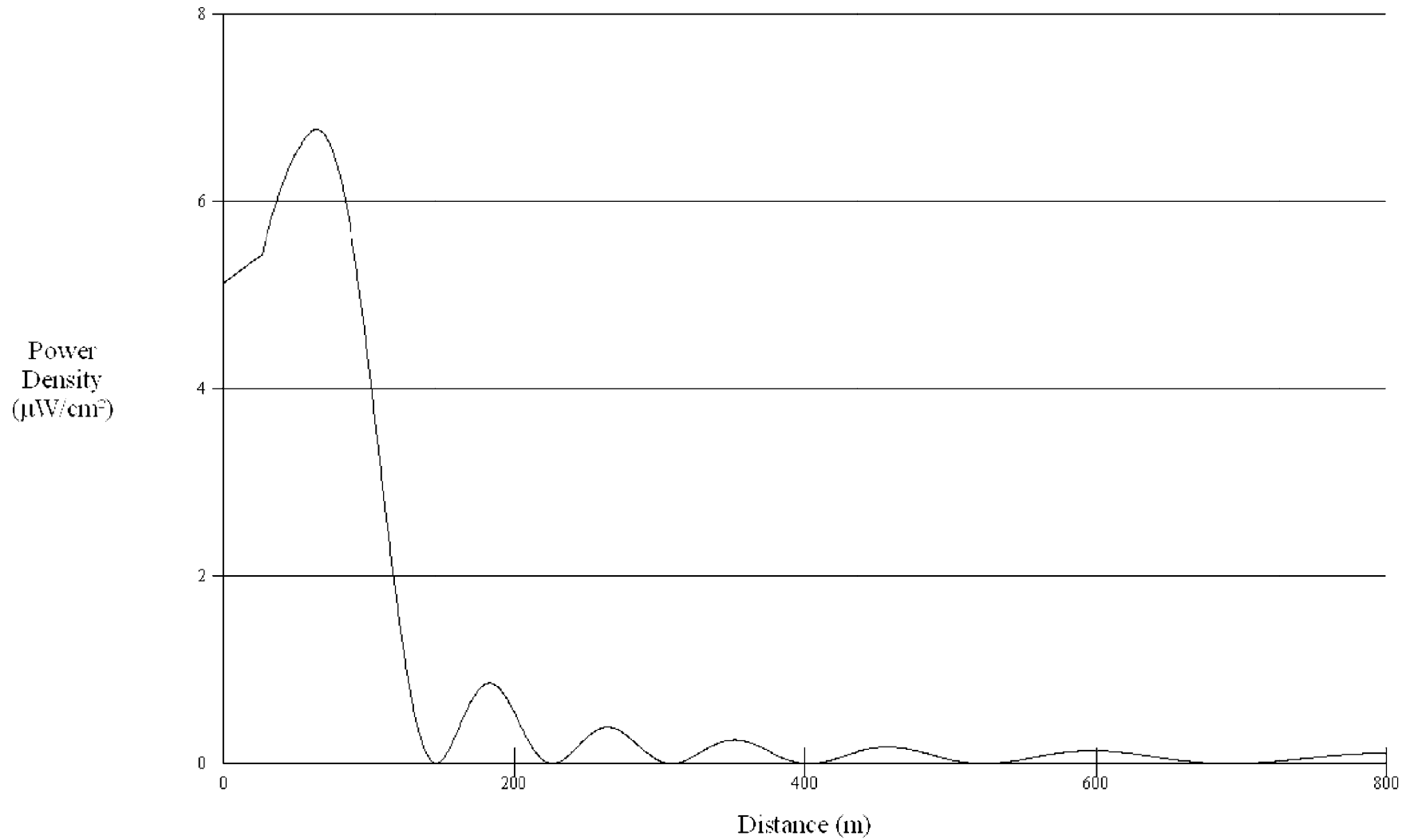
It has been demonstrated that the proposal will comply with the occupational exposure limit at any ground-level location. At higher elevations on the antenna structure workers will be protected from excessive exposure to RF fields in accordance with the methods recommended in *OET Bulletin No. 65, Version 97-01*. All maintenance and other related work involving exposure at elevations above ground level will be coordinated to effectively control RF fields from exceeding the occupational limit. Preventative steps to protect workers during such scheduled events shall include reducing power or shutting down facilities.

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Power Density vs Distance



Office of Engineering and Technology

Distance (m): Antenna Type:

Horizontal ERP (W):

Number of Elements:

Vertical ERP (W):

Antenna Height (m):

Element Spacing: