

**Engineering Exhibit
WERZ (FM) Exeter, NH
Facility ID# 53385
New Auxiliary Antenna**

This is a modification to Construction Permit BXPB-20130905ACH. Due to mechanical interference from other antennas already on the tower, the height above ground needs to be increased and the ERP reduced slightly to compensate.

It is proposed to mount the antenna 101M above ground level on a 150M tower identified by ASR# 1022159. The proposed ERP is 1.05KW, and as can be seen in Figure 1 the proposed 60dbu contour is entirely within the WERZ licensed 60dbu contour.

RF Compliance:

The proposed antenna is a Shively 6813 half wave with an ERP of 1.05KW in both horizontal and vertical planes (2.1KW combined).

The FCC's version of the FM computer model (version 2.1) as referenced in "Supplement A Edition 97-01 to OET Bulletin 65 Edition 97-01" was used to determine the RF power density at various distances from the tower used by WERZ (FM). A total of 500 data points were used over a total distance of 500 meters from the tower. This distance was deemed sufficient since the power density decays to extremely small levels beyond this distance. The maximum predicted RF power density of 0.604 $\mu\text{W}/\text{cm}^2$ occurs at a distance of 180 meters from the base of the tower.

The maximum predicted RF exposure level of 0.604 $\mu\text{W}/\text{cm}^2$ is 0.3 % of the General Population/Uncontrolled Exposure limit of 200 $\mu\text{W}/\text{cm}^2$. Therefore, WERZ (FM) is categorically excluded from environmental processing for purposes of RF compliance, pursuant to Section 1.1307(b)(3)(ii), because the emissions from the proposed WERZ (FM) transmitter and antenna system result in a power density at ground level that is less than 5% of the applicable power density exposure limit for protection of workers and the general public.

The tower base is surrounded by a chain link fence with locked gate and RF Hazard warning signs are posted at the base of the tower. WERZ in coordination with other users of the site will reduce power or cease operations as necessary to protect persons having access to the site, tower or antenna from RF Exposure in excess of FCC guidelines.

Figure 1 - WERZ Proposed Aux

F(50,50) Contours

1.05 KW at 98M' HAAT

