

Attachment - K299AC Construction Special Conditions

1.0 Special Conditions as Required on Construction Permit

“Prior to commencing program test operations, FM Translator or FM Booster permittee must have on file an Application for an FM Translator or FM Booster Station License, pursuant to 47 C.F.R. Section 74.14. The permittee/licensee shall, upon completion of construction and during the equipment test period, make proper radiofrequency electromagnetic (RF) field strength measurements throughout the transmitter site area to determine if there are any areas that exceed the FCC guidelines for human exposure to RF fields. If necessary, a fence must be erected at such distances and in such a manner as to prevent the exposure of humans to RF fields in excess of the FCC Guidelines (OET Bulletin No. 65, Edition 97-01, August 1997). The fence must be a type which will preclude casual or inadvertent access, and must include warning signs at appropriate intervals which describe the nature of the hazard. Any areas within the fence found to exceed the recommended guidelines must be clearly marked with appropriate visual warning signs.”

2.0 Special Conditions met

As illustrated in the below photographs, the location of tower ASRN 1241307 is on a remote mountain ridge on private property (Figures 1 & 5) and is separated from human entrance by prolific signage (Figures 2 through 5) and steep, unwalkable terrain. This site is the location of at least 10 other transmitters for a variety of other FM broadcast and telecom services (Figure 3) and accordingly, it is not possible to record a meaningful field-strength measurement associated with the K299AC translator. However, no unauthorized access is possible within any reasonable range of human exposure, due to the nature of the private property, steep grade and treacherous terrain surrounding.

In addition, using the method specified in FCC OET Bulletin 65 on “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields” the minimum safe distance from the radiation center of K299AC’s 100 Watt antenna, assuming the worst-case omnidirectional antenna, is conservatively 1.9 meters in an uncontrolled environment. The K299AC antenna is mounted at a height of 8 meters, well above the head of a 2-meter-tall person with 4 meters of safe margin. Further margin of safety is added through the directional nature of the actual antenna.

All this being true, we believe the special condition required on the Construction Permit has been met.



Figure 1 – Perimeter of signage (red) and location of K299AC translator (star)



Figure 2 – Example of signage on perimeter



Figure 3 – Example of prolific transmitting antennas collocated at the site



Figure 4 – Signage on tower



Figure 5 – Illustration of slope, terrain, and inaccessibility of site

3.0 Certification

This attachment was created by David Dieter, Senior RF Engineer with Colorado Public Radio. David holds a Master's Degree in Electromagnetics from the Ohio State University and has over 20 years of experience in RF measurement and analysis.