

**Introduction and Description of Proposal**

This engineering exhibit was prepared in support of a minor change application being filed by Covenant Network. for authority to modify the licensed facilities of noncommercial educational FM station WQNA, Springfield, Illinois (FCC Facility ID 8603). It is proposed to change from channel 202A to 205A, relocate the antenna and reduce effective radiated power from 250 to 200 watts. The currently licensed and proposed facilities are mutually-exclusive in that the 60 dBμ and 100 dBμ overlap both to and from each site.

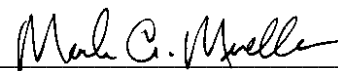
The proposed facility is in full compliance with all applicable FCC rules and policies and requires no waivers for grant. An existing, co-owned translator (W205BG, FCC Facility ID 85373) will be displaced and will be addressed in a later filing.

**Non-Ionizing Electromagnetic Radiation Statement**

Using the worst-case ERP of 200 watts circularly-polarized assuming equal radiation in all directions and 100% ground reflection, the station will produce a power density of 1.58  $\mu\text{W}/\text{cm}^2$  at 3 meters above ground, which is 0.79% of the 200  $\mu\text{W}/\text{cm}^2$  limit for uncontrolled spaces. The 200  $\mu\text{W}/\text{cm}^2$  uncontrolled space limit will be reached 5.78 meters from the antenna, 62.2 meters above ground and 15.3 meters above the rooftop level. The 1000  $\mu\text{W}/\text{cm}^2$  controlled space action limit will be reached 2.58 meters from the antenna, 65.4 meters above ground and 18.5 meters above roof level. The station will reduce power or cease operation as appropriate when personnel must remain inside these areas for longer than the allowed time. The rooftop tower is protected from unauthorized access and warning signs are posted.

This engineering exhibit was prepared by me and is true and correct to the best of my knowledge and belief.

January 28, 2020



Mark A. Mueller