



ENGINEERING STATEMENT
IN SUPPORT OF
APPLICATION FOR LICENSE RENEWAL
WNIN-FM
EVANSVILLE, IN

WNIN-FM is collocated on a tall tower with co-owned WNIN-TV and WNIN-DT. In addition, WNIN-FM has an authorized auxiliary antenna at a lower elevation on the tower. The purpose of this statement is to address the non-ionizing electromagnetic radiation (NIER) or radio frequency radiation (RFR) emanating from the various antennas on the tower and to demonstrate compliance with the Commission's Rules & Regulations concerning RFR.

Methodology

An analysis was completed in conformity with OET Bulletin 65 (OET 65) recommendations. Using the antenna manufacturers' elevation pattern data, the ground level RFR was calculated for each antenna system for the purposes of determining public (uncontrolled area) exposure. The RFR from each antenna can be combined by summing the ratios of the calculated individual RFR levels to their respective allowable levels and comparing this to a unity ratio. However, since all facilities are VHF and have an identical allowable public exposure limit of 200 microwatts/cm² (0.2 mW/cm²), the calculated levels may be simply added to arrive at a total.



There are two operating scenarios which will produce the highest RFR values:

1. DTV and Analog TV plus main FM
2. DTV and Analog TV plus auxiliary FM

The calculations show that the total RFR for Scenario 1 will be 0.0053 mW/cm² (or 2.7%) of the public exposure limit, and 0.0106 mW/cm² (or 5.3%) of the exposure limit for Scenario 2. Since each individual source produces RFR lower than 5% of the allowable limit, no further analysis or discussion is required.

There will be, however, a possibility for worker exposure on the tower at levels in excess of the occupational limit (1 mW/cm²). Calculations show that a distance of 65 feet below either FM antenna should be maintained while either is in operation. This will also provide adequate clearance from the DTV antenna ^{1/} and analog antenna. It is recommended that actual on-tower measurements of RFR (tower mapping) be conducted which may allow a reduction in the 65 ft. separation requirement. Furthermore, it is recommended that workers on the tower carry personal RF monitoring devices to preclude inadvertent exposure to high RFR levels. WNIN personnel will reduce power or cease transmitter operation, as necessary, in order to provide a compliant environment for workers on the tower. Workers will be briefed regarding separation limits for approaching operating antennas and use of procedures in place for affecting power reductions.

Other Matters

The tower base and guy anchors are completely enclosed by security fencing to limit access. Appropriate signage is posted warning of the potential for high RFR levels on the tower structure.

^{1/} If neither FM antenna is operating, a distance of 35 ft. below the DTV antenna will be adequate.

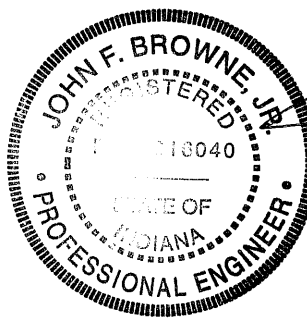
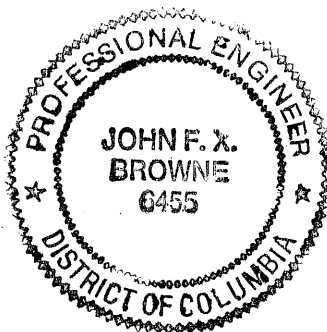
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Conclusion

The facility is fully compliant with Commission RFR requirements applicable to both controlled (occupational) and uncontrolled (public) areas.

Certification

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained herein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.



[Handwritten Signature]
 John F.X. Browne, P.E.
 March 18, 2004
 Indiana No. PE60016040
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