



## **ENVIRONMENTAL AND RADIO FREQUENCY SAFETY**

The licensee of WBSF is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WBSF antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The predicted emissions of WBSF must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WBSF, which will operate on television Channel 23 (524-530 MHz), the MPE is 351.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an “uncontrolled” environment and 1,756.7  $\mu\text{W}/\text{cm}^2$  in a “controlled” environment. The proposed WBSF facility will operate with a maximum ERP of 43.9 kW from a horizontally polarized directional transmitting antenna with a centerline height of 312 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WBSF facility is predicted to produce a power density at two meters above ground level of 2.747  $\mu\text{W}/\text{cm}^2$ , which is 0.78% of the FCC guideline value for an “uncontrolled” environment, and 0.156% of the FCC’s guideline value for “controlled” environments. There is one FM radio station that is located at the WBSF site. The total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all facilities within the relevant proximity, is 47.16% of the limit applicable to “uncontrolled” environments, and 9.43% of the limit for “controlled” environments. (See Appendix A)

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WBSF, Bay City, MI  
Channel 23, 24 kW, 306 m HAAT  
July, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR*</u>	<u>WORST-CASE PREDICTED POWER DENSITY (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>FCC UNCONTROLLED LIMIT (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WBSF	DT	23	527	H & V	312	43.900	0.300	2.747	351.33	0.78%
WIOG	FM	273	102.5	H & V	248	84.000	1.000	92.750	200.00	46.37%
<b>TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =</b>										<b>47.16%</b>

\* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.