

# KSQY(FM) – Deadwood, SD

## Compliance with Radiofrequency Radiation Guidelines

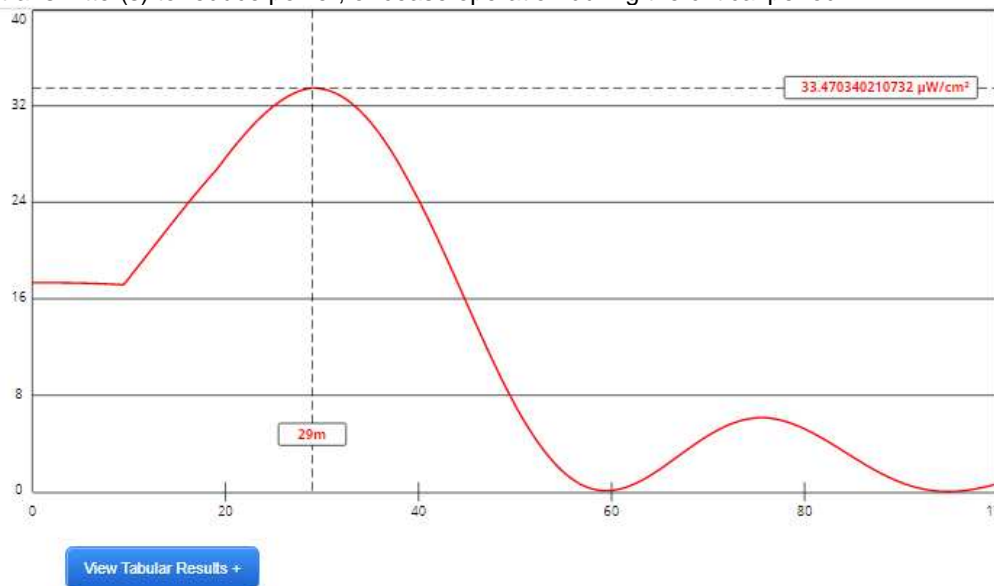
The RF Compliance Study has been evaluated for human exposure to non-ionizing radiofrequency radiation at the transmitter site. The site is intended to house multiple transmitters. The potential for human exposure to non-ionizing radiofrequency radiation at the proposed transmitter site has therefore been evaluated with regards to the §1.1307(b)(3), five percent (5%) contribution rule, for multiple transmitter sites.

The facility CH236C – Deadwood, SD analog FM Translator (Facility ID: 3041) operates with 100.0 kW ERP circular polarization (H&V). The proposed operation will broadcast from an antenna COR mounted 110 meters above ground level (AGL). The facility will operate with a two bay, ERI SHP-8AC antenna employing "Opposed U Dipole" or EPA Type 3 elements as defined by *FM Model - Appendix B* issued March 31, 2016<sup>1</sup>. The elements will be spaced 1.0wavelength (λ) apart. This facility will not operate with HD/IBOC facilities at this time.

To evaluate the total exposure to non-ionizing radio-frequency radiation with regards to the five percent contribution exclusion rule, it is necessary to establish 5.0% of the maximum permissible limit. This facility is located on a hilltop antenna farm with restricted access therefore the controlled limit is used. 5.0% of the 1000  $\mu\text{W}/\text{cm}^2$  results in 50  $\mu\text{W}/\text{cm}^2$ . The resulting contribution is less than or equal to 50  $\mu\text{W}/\text{cm}^2$  or 5.0%, the exposure is concluded to be within the guidelines of OET Bulletin No. 65 (Edition 97-01) and §1.1307(b)(3).

Inspection of the graph below indicates the maximum contribution for the uncontrolled environment is less than the 50  $\mu\text{W}/\text{cm}^2$  (5.0%) limit as set forth by §1.1307(b)(3), therefore the facility is in compliance with FCC guidelines. §1.1307(b)(3) states that facilities contributing less than five percent of the exposure limit at locations with multiple transmitters are categorically excluded from responsibility for taking any corrective action in the areas where its contribution is less than five percent. Since this instant application meets the five percent exclusion test at all ground level areas, the impact of the proposed facility may be considered independently from other facilities operating at or nearby this site. It is believed the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b)(3).

In addition to the protection afforded by the proposed antenna height above ground, the facility is or will be properly marked with signs, and entry to the facility will be restricted by means of fencing with locked doors and/or gates if required. Any other means that may be required to protect employees and the general public will also be employed. In the event work is required in proximity to the antenna(s) such that the person or persons working in the area will be potentially exposed to fields in excess of the current guidelines, an agreement signed by all broadcast parties at the site will be in effect for the offending transmitter(s) to reduce power, or cease operation during the critical period.



<sup>1</sup> The current *FM Model* web-based software application employs the standards as detailed in OET Bulletin No. 65 (Edition 97-01). FM radiofrequency radiation levels have been predicted using both the array pattern, the calculations of which are based on the number of bays in the antenna and wavelength spacing between the bays, and the element pattern. The element pattern has been determined by using measured element data prepared by the EPA and published in "An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM and TV Services," by Paul C. Gailey and Richard Tell - April 1985, U.S. Environmental Protection Agency. The results of the evaluation for the FM station have been shown at the end of this RF compliance discussion. To ensure complete protection, the maximum FM contribution has been assumed without regard to any restricted access fencing distance.

Channel Selection	Channel 236 (95.1 MHz)		
Antenna Type +	EPA Type 3: Opposed U Dipole		
Height (m)	110	Distance (m)	100
ERP-H (W)	100000	ERP-V (W)	100000
Num of Elements	8	Element Spacing (λ)	1
Num of Points	500	Apply	

