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# ***RF Appendix 1***

## ***Compliance with Radiofrequency Radiation Guidelines***

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**1**

**Explanation of Study** The studied facilities comply with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments as set forth under §1.1310 of the Commission's rules and the RF radiation protection guidelines as set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01). The site is intended to house multiple transmitters. All facilities within 315 meters of the proposed site have been considered for this study.

Concerning FM contributions, the potential for human exposure to non-ionizing radiofrequency radiation has been evaluated with regard to §1.1310 utilizing the Commission's own *FM Model* web-based software application. The use and implementation of this FCC sanctioned software is a matter of record before the Commission. To ensure complete protection, each maximum FM contribution has been assumed without regard to any restricted access fencing distance. The maximum permissible uncontrolled limit for FM stations is 200  $\mu\text{W}/\text{cm}^2$ . The maximum permissible controlled limit is 1000  $\mu\text{W}/\text{cm}^2$ . Therefore, contributions of  $\leq 200 \mu\text{W}/\text{cm}^2$  remain within the tolerances as allowed by §1.1310 and its governing OET Bulletin No. 65 (Edition 97-01) for the more restrictive of either two protections.

**Results of Study** The sum of each individual contribution as a percentage of its each maximum permissible uncontrolled limit has been provided below. As the resulting contribution(s) as a whole are less than 100%, the combined exposure has been calculated to be within the guidelines of OET Bulletin No. 65 (Edition 97-01) for the more restrictive uncontrolled environment as defined by locations accessible by the general public. As stated before, protection of the uncontrolled environment implies protection of the controlled environment. There are no other broadcast sources of radiofrequency radiation present at this site.

The facility is, or will be, properly marked with signs. Entry is, or will be, restricted by means of fencing with locked doors or gates. Furthermore, coordination with other users of the site will be secured to reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

<b>Contributing Station</b>	<b>Individual Contribution</b>	<b>Individual Uncontrolled Limit</b>	<b>Percent of Uncontrolled Limit</b>
CH211A.P (Analog)	26.279 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	13.14%
K208CK.L (Analog)	4.227 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	2.11%
K212EJ.L (Analog)	38.629 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	19.31%
<b>Total of Uncontrolled Limit:</b>			<b>34.56%</b>

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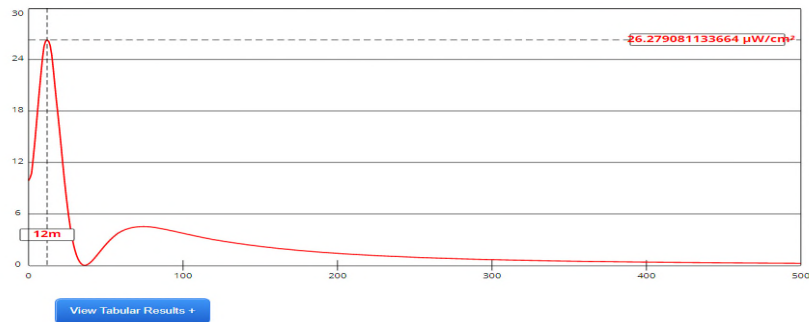
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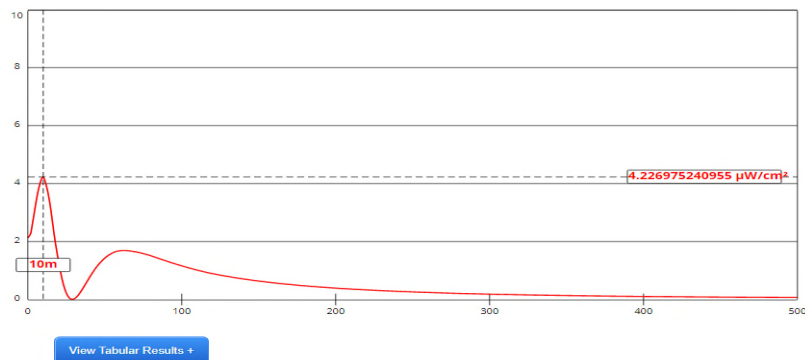
**2**

**Summary of Stations:** The proposed CH211A.P - Scottsbluff, NE analog NCE-FM Station (Facility ID: 762137) will operate on CH211A (90.1 MHz) with 0.92 kW ERP circular polarization (H&V). The proposed operation will broadcast from an antenna COR mounted 23.0 meters above ground level (AGL). The facility will employ a two (2) bay, "Opposed V Dipole" antenna, with elements spaced 1.0 wavelength ( $\lambda$ ) apart. The antenna will employ EPA Type 2 elements as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016). This facility will not operate with HD/IBOC facilities at this time.



Channel Selection	Channel 211 (90.1 MHz)		
Antenna Type +	EPA Type 2: Opposed V Dipole		
Height (m)	23	Distance (m)	500
ERP-H (W)	920	ERP-V (W)	920
Num of Elements	2	Element Spacing ( $\lambda$ )	1
Num of Points	500	Apply	

**Summary of Stations:** The authorized K208CK.C - Scottsbluff, NE analog FM Translator Construction Permit (Facility ID: 81603) will operate on CH208D (89.5 MHz) with 0.250 kW ERP circular polarization (H&V). The proposed operation will broadcast from an antenna COR mounted 23.0 meters above ground level (AGL). The facility will employ a two (2) bay, Nicom Model BKG77/2L(DA)(0.85WL) "Opposed V Dipole" antenna. The antenna employs EPA Type 2 elements as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016). The elements will be spaced 0.85 wavelengths ( $\lambda$ ) apart. This facility will not operate with HD/IBOC facilities at this time.



Channel Selection	Channel 208 (89.5 MHz)		
Antenna Type +	EPA Type 2: Opposed V Dipole		
Height (m)	23	Distance (m)	500
ERP-H (W)	250	ERP-V (W)	250
Num of Elements	2	Element Spacing ( $\lambda$ )	0.85
Num of Points	500	Apply	

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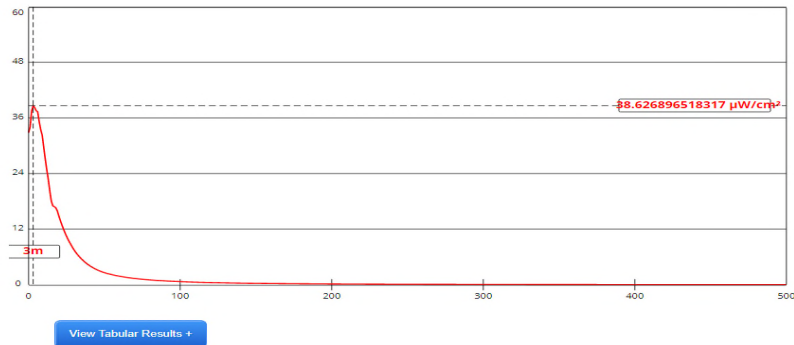
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**3**

**Summary of Stations:** The licensed K212EJ.L - Scottsbluff, NE analog FM Translator (Facility ID: 76658) operates on CH212D (90.3 MHz) with 0.205 kW ERP vertical only polarization (V-Only). The Translator broadcasts from an antenna COR mounted 15.0 meters above ground level (AGL). For purposes of this RF Compliance Study, a worst case one-bay, EPA Type 1 element as defined by the Commission's own FM Model - Appendix B (issued March 31, 2016) has been assumed. The element is spaced 1.0 wavelength ( $\lambda$ ) apart. This facility will not operate with HD/IBOC facilities at this time.



Channel Selection	Channel 212 (90.3 MHz)	
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"	
Height (m)	15	Distance (m)
ERP-H (W)	0	ERP-V (W)
Num of Elements	1	Element Spacing ( $\lambda$ )
Num of Points	500	
<b>Apply</b>		