

## STATEMENT OF JOHN E. HIDLE, P.E. IN SUPPORT OF AN APPLICATION FOR MAXIMIZATION CONSTRUCTION PERMIT KCFW-TV - KALISPELL, MONTANA DTV - CH. 9 - 17.3 kW - 850 m HAAT

Prepared for: SINCLAIR MEDIA LICENSEE, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

#### GENERAL

This office has been authorized by SINCLAIR MEDIA LICENSEE, LLC, licensee of KCFW-TV, channel 9, facility ID number 18079, licensed to Kalispell, Montana, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for construction permit, in accordance with Public Notice DA 17-1086 announcing the Media Bureau's temporarily lifting of the freeze that was imposed on April 5, 2013 on the filing and processing of minor modification applications that would increase a full power television station's noise limited contour or a Class A station's protected contour in one or more directions beyond the station's authorized facilities. The instant proposal, which is a minor change according to the Commission's rules, will expand the coverage area of KCFW-TV, which was not assigned a new channel in connection with the incentive auction repack process.

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#### NON-DIRECTIONAL ANTENNA

The applicant proposes to utilize its authorized antenna, an RCA model TF-6AH horizontally polarized non-directional transmitting antenna (FCC ID# 85360). The center of radiation is at a height above ground of 67 meters, and a height above average terrain of 850 meters.

There will be no change in the tower structure and the overall structure height of 2,108.8 meters Above Mean Sea Level (AMSL) will be maintained. (See ASR #1000780) The instant application proposes only to increase the Effective Radiated Power (ERP) from 2.5 kW to 17.3 kW.

## PREDICTED COVERAGE CONTOURS

The predicted coverage contours were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 1 shows the predicted Noise Limited (36 dBu) contour, and the principal community (43 dBu) contour. The 43 dBu contour completely encompasses the principal community of license, Kalispell, Montana.

## ALLOCATION CONSIDERATIONS

#### **Post-Transition DTV Considerations**

A study was performed, using the FCC's software, tv\_study, v. 2.2.4, to determine if the instant application for construction permit is predicted to cause new prohibited interference to post reassignment DTV stations, construction permits, DTV allotments or Class A DTV stations. The study results, shown in Appendix B, indicate that the instant application for construction permit is predicted to cause no new interference exceeding 0.5% to the populations served by any post reassignment DTV station, construction permit, allotment or Class A DTV stations.

#### International DTV Considerations

The KCFW-TV site is located 109.8 kilometers from the nearest point on the US/Canadian border and more than 1,700 kilometers from the nearest point on the US/Mexican border. All relevant Canadian DTV facilities are included in the above study and no interference is predicted.

## **BLANKETING AND INTERMODULATION INTERFERENCE**

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 km of the proposed KCFW-TV site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

#### **RADIO FREQUENCY IMPACT**

The FCC's guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or "controlled" situations, and for "uncontrolled" environments that apply in all other cases that might affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated facilities comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. OET Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines. The Maximum Permitted Exposure (MPE) level for broadcast facilities that operate on a frequency between 30 MHZ and 300 MHZ is 200 microwatts per centimeter squared ( $\mu$ W/cm<sup>2</sup>) for an "uncontrolled" environment, and is 1000 microwatts per centimeter squared ( $\mu$ W/cm<sup>2</sup>) for a "controlled" environment. The MPE level for broadcast facilities that operate on a frequency between 300 MHZ and 1500 MHZ, primarily UHF DTV stations, is determined for an "uncontrolled" environment by dividing the operating frequency in MHZ by 1.5, and is determined for a "controlled" environment by dividing the operating frequency in MHZ by 0.3.

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The predicted emissions of KCFW-TV must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For KCFW-TV, which will operate on television Channel 9 (186-192 MHZ), the MPE is 200 microwatts per centimeter squared ( $\mu$ W/cm<sup>2</sup>) in an "uncontrolled" environment and 1,000  $\mu$ W/cm<sup>2</sup> in a "controlled" environment. The proposed KCFW-TV facility will operate with a maximum ERP of 17.3 kW from a horizontally polarized omni-directional transmitting antenna with a centerline height of 67 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the KCFW-TV facility is predicted to produce a power density at two meters above ground level of 21.03  $\mu$ W/cm<sup>2</sup>, which is 10.51% of the FCC guideline value for an "uncontrolled" environment, and 2.10% of the FCC's guideline value for "controlled" environments.

However, because the proposed facility is located in close proximity to a number of other television and radio broadcast stations, the cumulative power density of all the stations operating from the shared site must be considered. In light of the above, once the proposed facility is authorized and installed, an RFR measurement survey will be undertaken to determine the effect of the proposed facility on the RFR environment. Any necessary changes to the existing RFR safety plan will be made accordingly.

#### **OCCUPATIONAL SAFETY**

The licensee of KCFW-TV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KCFW-TV 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.

## SUMMARY

It is submitted that the instant minor modification application for a construction permit to increase KCFW-TV's ERP from 2.5 kW to 17.3 kW as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: December 6, 2017



# **PREDICTED COVERAGE CONTOURS**

KCFW-TV - KALISPELL, MONTANA DTV Channel 9 - 17.3 kW ERP - 850 M HAAT DECEMBER, 2017

Predicted Noise Limited 36 dBu F(50,90) Coverage Contour



Predicted Principal Community 43 dBu F(50,90) Coverage Contour

#### **APPENDIX A**

## SUMMARY OF RADIOFREQUENCY RADIATION STUDY

KCFW-TV, Kalispell, Montana Channel 9, 17.3 kW, 850 m HAAT December, 2017

							VERT.	WORST-CASE	FCC	
					ANTENNA		RELATIVE	PREDICTED	UNCONTROLLED	PERCENT OF
				POLAR-	HEIGHT	ERP	FIELD	POWER DENSITY	LIMIT	UNCONTROLLED
CALL	SERVICE	<u>CHANNEL</u>	FREQUENCY	IZATION	mAGL**	<u>(kW)</u>	FACTOR	<u>(µW/cm²)</u>	<u>(µW/cm²)</u>	LIMIT
KCFW-TV	DT	9	189	Н	65	17.300	0.300	21.028	200.00	10.51%

TOTAL PERCENTAGE OF FCC GUIDELINE VALUE = 10.51%

\*This evaluation includes facilities collocated at the site, and facilities that are located within 315 meters.

\*\* The antenna heights indicated aboed are 2 meters less that the actual antenna heights to consider the 2 meter human height allowance.





## KCFW-TV - KALISPELL, MONTANA Appendix B - Longley-Rice Interference Analysis DECEMBER, 2017

tvstudy v2.2.4 (Z2Qqz3) Database: localhost, Study: KCFW-9 OMNI 17p3K 171205, Model: Longley-Rice Start: 2017.12.05 12:23:34 Study created: 2017.12.05 12:23:34 Study build station data: LMS TV 2017-12-04 (43) Proposal: KCFW-TV D9 DT APP KALISPELL, MT File number: KCFW-9 OMNI 17p3K 171205 Facility ID: 18079 Station data: User record Record ID: 2566 Country: U.S. Zone: II Search options: Non-U.S. records included Baseline record excluded if station has CP Stations potentially affected by proposal: Chan Svc Status City, State File Number Distance TΧ Call No KFBB-TV D8 DT LIC GREAT FALLS, MT BLCDT20071108ADA 236.2 km DT LIC PULLMAN, WA KWSU-TV D10 BLANK0000001648 No 247.0 No KWSU-TV D10 DT APP PULLMAN, WA BLANK0000035683 247.0 BROOKS, AB No CFCN-TV-3 D9 DC LIC BLANKCANLP4 331.7 Yes CISA-TV-1 D9 DT LIC BURMIS, AB BLANKCANADA6 169.2 DC LIC PINCHER CREEK, AB BLANKCANLP15 No CISA-TV-5 D9 165.6 No non-directional AM stations found within 0.8 km No directional AM stations found within 3.2 km Record parameters as studied: Channel: D9 Latitude: 48 0 48.00 N (NAD83) Longitude: 114 21 58.00 W Height AMSL: 2103.0 m HAAT: 850.0 m Peak ERP: 17.3 kW Antenna: Omnidirectional Elev Pattrn: Generic 36.0 dBu contour: HAAT Distance ERP Azimuth 0.0 deg 17.3 kW 724.3 m 122.0 km 45.0 17.3 938.1 126.2 90.0 17.3 1105.0 130.1 135.0 17.3 780.2 123.3 180.0 17.3 848.7 124.5 225.0 17.3 677.8 120.5 270.0 17.3 728.5 122.1 315.0 17.3 929.5 126.0 Database HAAT does not agree with computed HAAT Database HAAT: 850 m Computed HAAT: 842 m

#### Appendix B - Interference Analysis KCFW-TV - Kalispell, Montana Channel 9 - 17.3 kW - Page 2

ERP exceeds maximum ERP: 17.3 kW ERP maximum: 17.3 kW \*\*Proposal is within coordination distance of Canadian border Distance to Canadian border: 109.8 km Distance to Mexican border: 1700.3 km Conditions at FCC monitoring station: Ferndale WA Bearing: 282.9 degrees Distance: 612.0 km Proposal is not within the West Virginia quiet zone area Conditions at Table Mountain receiving zone: Bearing: 137.0 degrees Distance: 1135.3 km Study cell size: 2.00 km Profile point spacing: 1.00 km Maximum new IX to full-service and Class A: 0.50% Maximum new IX to LPTV: 2.00% \_\_\_\_\_ Interference to BLANKCANADA6 LIC scenario 1 Call Chan Svc Status City, State File Number Distance Desired: CISA-TV-1 D9 DT LIC BURMIS, AB BLANKCANADA6 DTVBL18079 169.2 KCFW-9 OMNI 17p3K 1712 169.2 Undesireds: KCFW-TV D9 DT BL KCFW-TV D9 DT APP KALISPELL, MT 169.2 km KALISPELL, MT CFCN-TV-18D8 DC LIC BLANKCANLP9 COLEMAN, AB 18.2 BLANKCANLP15 CISA-TV-5 D9 DC LIC PINCHER CREEK, AB 17.4 Terrain-limited IX-free, before IX-free, after Percent New IX Service area 4777.4 13,861 4059.3 13,434 2993.2 6,684 2969.2 6,684 0.80 0.00 Unique IX, before Undesired Total IX Unique IX, after 12.0 KCFW-TV D9 DT BL 0 0 0.0 KCFW-TV D9 DT APP 80.1 0 24.0 0 2,549 4,738 80.4 2,012 80.4 CFCN-TV-18 D8 DC LIC 104.5 2,012 CISA-TV-5 D9 DC LIC 985.7 949.6 4,201 909.5 4,201 \_\_\_\_\_ Interference to proposal scenario 1 Chan Svc Status City, State File Number Call Distance Desired: KCFW-TV D9 DT APP KALISPELL, MT KCFW-9 OMNI 17p3K 1712 Undesireds: CISA-TV-1 D9 DT LIC BURMIS, AB BLANKCANADA6 169.2 km Service area Terrain-limited IX-free Percent IX 140,192 0.02 0.00 47678.4 177,697 37844.5 140,192 37836.5 664.8 991.2 88 0 664.8 0 0.00 0.00 (in Canada)

Undesired Total IX Unique IX Prcnt Unique IX CISA-TV-1 D9 DT LIC 8.0 0 8.0 0 0.02 0.00