TECHNICAL SUMMARY
APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
FCC FILE NO. 0000158309
FM TRANSLATOR STATION W219DW
BUXTON, NORTH CAROLINA
CHANNEL 219 (91.7 MHZ) 120 WATTS (DA)

1. Application Purpose: Station W219DW (formerly W216BE) is currently licensed (File No. BLFT-2012113AKD) to operate on channel 216 (91.1 MHz) at Buxton, North Carolina with a nondirectional (ND) antenna maximum ERP of 0.05 kW and an RCAMSL of 10 meters. In addition, W219DW is authorized by outstanding construction permit (File No. 0000158309) to change from current channel 216 (91.1 MHz) to 3rd upper adjacent channel 219 (91.7 MHz), change transmitter site, operate with a maximum ERP of 120 Watts using a Shively broadband directional antenna (DA) system and increase the RCAMSL from 10 meters to 42.9 meters (rounded to 43 meters). By means of this instant application, it is proposed to modify the authorized W219DW DA pattern envelope. No other changes are proposed.

2. Calculation of Maximum ERP: As W219DW will be a non-fill-in translator located east of the Mississippi River, the maximum permitted ERP of 120 Watts was calculated in accordance with Section 74.1235(b)(1). Specifically, Figure 1 sets forth the calculated HAAT for 12 equally-spaced radials commencing with true north. A 1-second terrain database was used for the HAAT calculations. The calculated HAAT along all 12 radials is 43 meters (when rounded). Based on an HAAT of 43 meters, the maximum ERP (MERP) would be 120 Watts based on the HAAT/MERP table in Section 74.1235(b)(1).

3. Non-Fill-in Translator Coverage & Minor Change Compliance: The proposal will be a non-fill-in translator for NCE-FM station WURI on channel 215 (90.9 MHz) at Manteo, NC (BLED-20140228AAY, Facility ID 91803). The WURI signal will be received by W219DW via the internet. In addition, as depicted on Figure 2, the herein proposed 60 dBu contour overlaps the 60 dBu contour for currently licensed W219DW operation (BLFT-20121113AKD) which complies with the FCC's minor change rules.

4. Section 74.1204 compliance: Figure 3 is an allocation study for channel 219 based on Section 74.1204. Figure 3 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (43 meters) and ERP (120 Watts) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. Figure 3 demonstrates that the proposal complies with the contour overlap provisions of Section 73.1204 of the FCC rules.

5. RFR Compliance: The proposed W219DW facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with the OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields.

The proposed Shively broadband DA will be mounted at the 41 meter level on the supporting structure. The calculated power density at 2 meters above ground level at the base of the supporting structure was calculated using the appropriate equation contained in the Bulletin. The total ERP will be 240 Watts (H+V). A greater than expected vertical plane relative field (VPRF) value of 0.5 (for angles below 60 degrees downward) is presumed for the antenna's downward radiation (see Figure 4, attached). The calculated power density (PD) at a point 2 meters above ground level is 1.31 uW/cm ^{2}. This is only 0.66% of the FCC's recommended limit of 200 uW/cm^2 for the FM band for an uncontrolled/general population environment. Thus, it is believed that the proposed W219DW facility is in full compliance with the FCC's requirements with regard to RF radiation exposure.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Furthermore, a protocol shall be in effect in the event that workers or other authorized personnel enter the restricted area or climb the supporting structure to ensure that appropriate measures will be taken to assure worker safety with respect to RF energy exposure.

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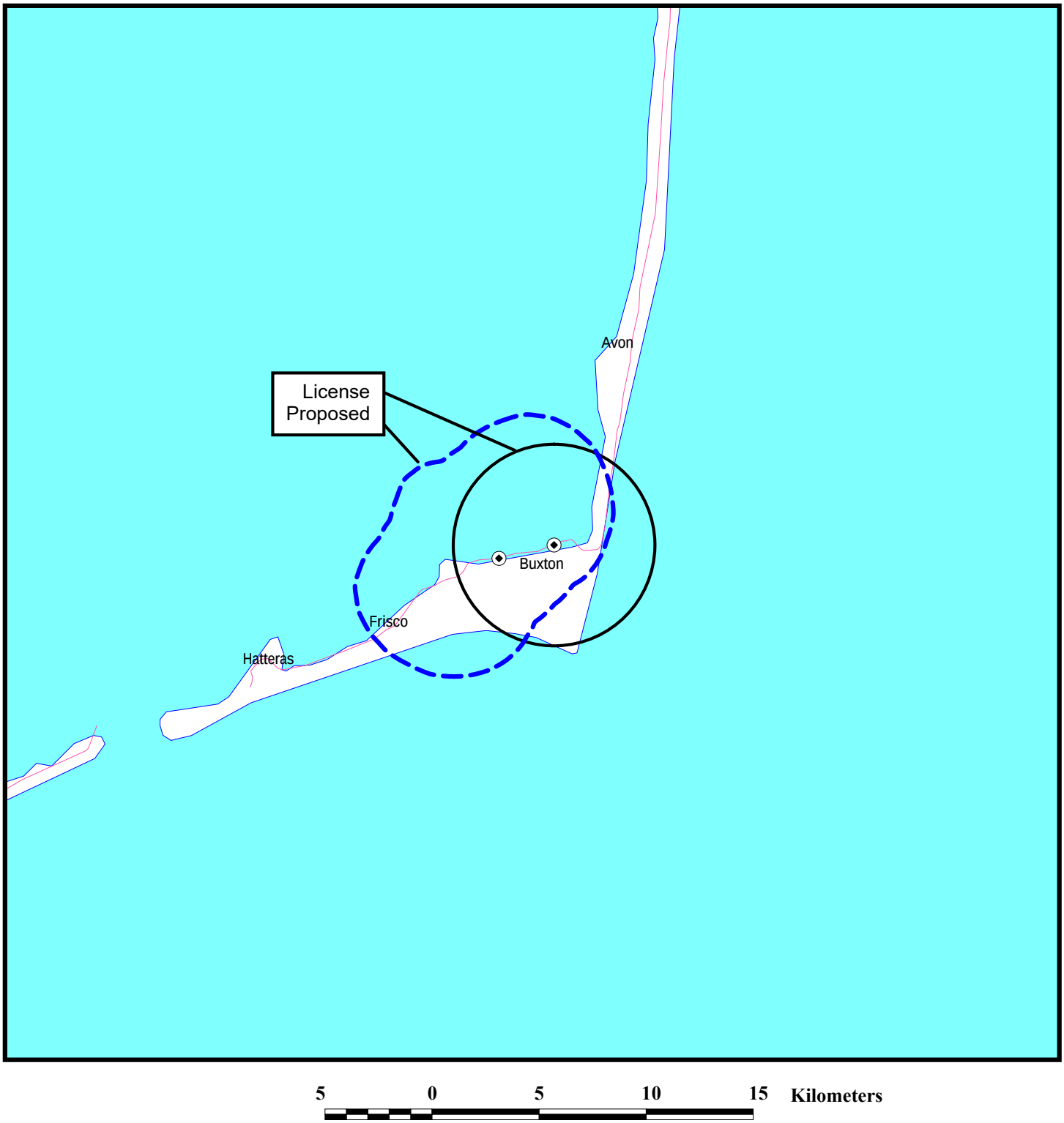
W219DW HAAT/ND ERP CALCULATION
PER SECTION 74.1235(B)(1)
[HAAT BASED ON NGDC 1-SECOND TERRAIN DATABASE

Latitude	35°15'41.5" North	
Longitude	75°34'17.5" West	(NAD 83)
RCAMSL	43 meters	

Azimuth (deg T)	Terrain (m)	HAAT (m)	Maximum ERP (W)
0	0	43	120
30	0	43	120
60	0	43	120
90	0	43	120
120	0	43	120
150	0	43	120
180	0	43	120
210	0	43	120
240	0	43	120
270	0	43	120
300	0	43	120
330	0	43	120



FCC PREDICTED 60 DBU CONTOURS

FM STATION W219DW
BUXTON, NORTH CAROLINA
CH 219 (91.7 MHZ) 0.12 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida 34237

FM Contour Study LMS

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida

Channel: 219 ***Coordinates:*** 035-15-41.5 075-34-17.5 (NAD 83) ***ERP:*** 0.12 kW ***Max. HAAT:*** 43 m

Comment: Proposed W219DW

Callsign	*Chan.*	*Service*	*Status*	*Freq.*	*City*			*State*	*Co.*	*Rec.*	*Latitude*	*Dist. (km)*	*Sep. (km)*	*Spac. (km)*
Facility ID	*ARN*			*Class*	*DA*	*73.215*	*ERP (kW)*	*HAAT (m)*			*Longitude*	*Bear. (deg)*	*Comment*	
W216BE	216	FX	L2C	91.1	BUXTON			NC	US	C	35-16-01.6	2.65	7.48	-4.83
89947	BLANK	BLFT-20121113A		D	NDI		0.05	9.8			075-32-35.5	76.42	**SHORT**	/1
W216BE 60.0 dBu desired distance: 4.7 km							Proposed 100.0 dBu undesired distance: 0.7 km							
Proposed 60.0 dBu desired distance: 7.0 km							W216BE 100.0 dBu undesired distance: 0.5 km							
WZGO	216	FM	L2C	91.1	AURORA			NC	US	C	35-18-09.6	90.62	44.93	45.69
77845	BLANK	BLED-20060727A		C2	NDI		40	107			076-33-58.7	273.19	**CLEAR**	
WZGO 60.0 dBu desired distance: 44.2 km							Proposed 100.0 dBu undesired distance: 0.7 km							
Proposed 60.0 dBu desired distance: 7.0 km							WZGO 100.0 dBu undesired distance: 4.8 km							
WBJD	218	FM	L2C	91.5	ATLANTIC BEACH			NC	US	C	34-45-34.6	129.64	88.33	41.31
14357	BLANK	BLED-20061201A		C1	DRI		85	117			076-51-14.8	244.83	**CLEAR**	
WBJD 60.0 dBu desired distance: 52.9 km							Proposed 54.0 dBu undesired distance: 10.1 km							
Proposed 60.0 dBu desired distance: 7.0 km							WBJD 54.0 dBu undesired distance: 81.3 km							
W216BE	219	FX	MOD	91.7	BUXTON			NC	US	C	35-15-41.5	0	29.39	-29.39
89947	BLANK	0000158309		D	DRI		0.12	9.8			075-34-17.5	0	**SHORT**	/2
W216BE 60.0 dBu desired distance: 5.9 km							Proposed 40.0 dBu undesired distance: 23.5 km							
Proposed 60.0 dBu desired distance: 7.0 km							W216BE 40.0 dBu undesired distance: 19.6 km							
WBKU	219	FM	AMD	91.7	AHOSKIE			NC	US	C	36-05-45.6	174.7	147.54	27.16
82838	BLANK	BMLED-2017030		C1	DRI		61.5	131			077-12-28.9	302.59	**CLEAR**	
WBKU 60.0 dBu desired distance: 52.3 km							Proposed 40.0 dBu undesired distance: 23.5 km							
Proposed 60.0 dBu desired distance: 7.0 km							WBKU 40.0 dBu undesired distance: 140.5 km							
W219BO	219	FX	L2C	91.7	MANTEO			NC	US	C	35-53-58.6	71.43	30.33	41.1
81124	BLANK	BLFT-19970314T		D	NDI		0.055	60			075-40-35.6	352.41	**CLEAR**	
W219BO 60.0 dBu desired distance: 6.8 km							Proposed 40.0 dBu undesired distance: 23.5 km							
Proposed 60.0 dBu desired distance: 7.0 km							W219BO 40.0 dBu undesired distance: 22.9 km							
WZPR	222	FM	MOD	92.3	NAGS HEAD			NC	US	C	35-50-49.6	65.13	35.04	30.09
12158	BLANK	BMLH-20100209A		C3	NDI		10	117			075-37-18.6	356.02	**CLEAR**	
WZPR 60.0 dBu desired distance: 34.3 km							Proposed 100.0 dBu undesired distance: 0.7 km							
Proposed 60.0 dBu desired distance: 7.0 km							WZPR 100.0 dBu undesired distance: 3.4 km							

/1 Licensed W219DW operation.

/2 Authorized W219DW operation being modified by the instant application.

Figure 4

Shively Model 6025 Log Periodic Vertical Plane Relative Field Pattern