

Consolidated Engineering Report

Proposed Minor Modification to
FM Translator Construction Permit

W248BH

Facility ID: 150641

97.5 MHz
Rochester, NY

Genesee Media Corporation
("Applicant")

April 10, 2017

Prepared by:

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Proposed Facility Information

Coordinates: 43-09-16.56 N
77-36-16.56 W (NAD27)

Channel: 248 (97.5 MHz)
Site Height Above Sea Level: 154.0 m
Height of Radiation Center Above Ground Level: 138 m (H/V)
Center Radiation Above Sea Level AMSL: 301.0 m
Antenna Height Above Average Terrain (HAAT): 158 m
Effective Radiated Power: 0.250 kW (H/V)

Antenna: PSI Model FML-1A-DA

Translator is to be a fill-in translator, fed over the air, and to rebroadcast WOKR-AM, facility number 15767.

Translator application is a minor modification of BPF'T-20160205AAH. W248BH is has a silent STA while a new translator is was sought. Lessor of the proposed tower site determined that the structure could not support the additional weight of the W248BH translator antenna. This application remedies this situation and will allow Applicant to return W248BH to the air quickly.

According to 47 FR §17.7(e)(3), Antenna Structure Notification is not necessary for Any antenna structure of 6.10 meters (20 feet) or less in height, except one that would increase the height of another antenna structure. The proposed antenna will be placed on a mast connected to the supporting building's rooftop with a maximum height of 4 meters; thus, conditions in 47 FR §17.7(e)(3) are met.

Frequency Study

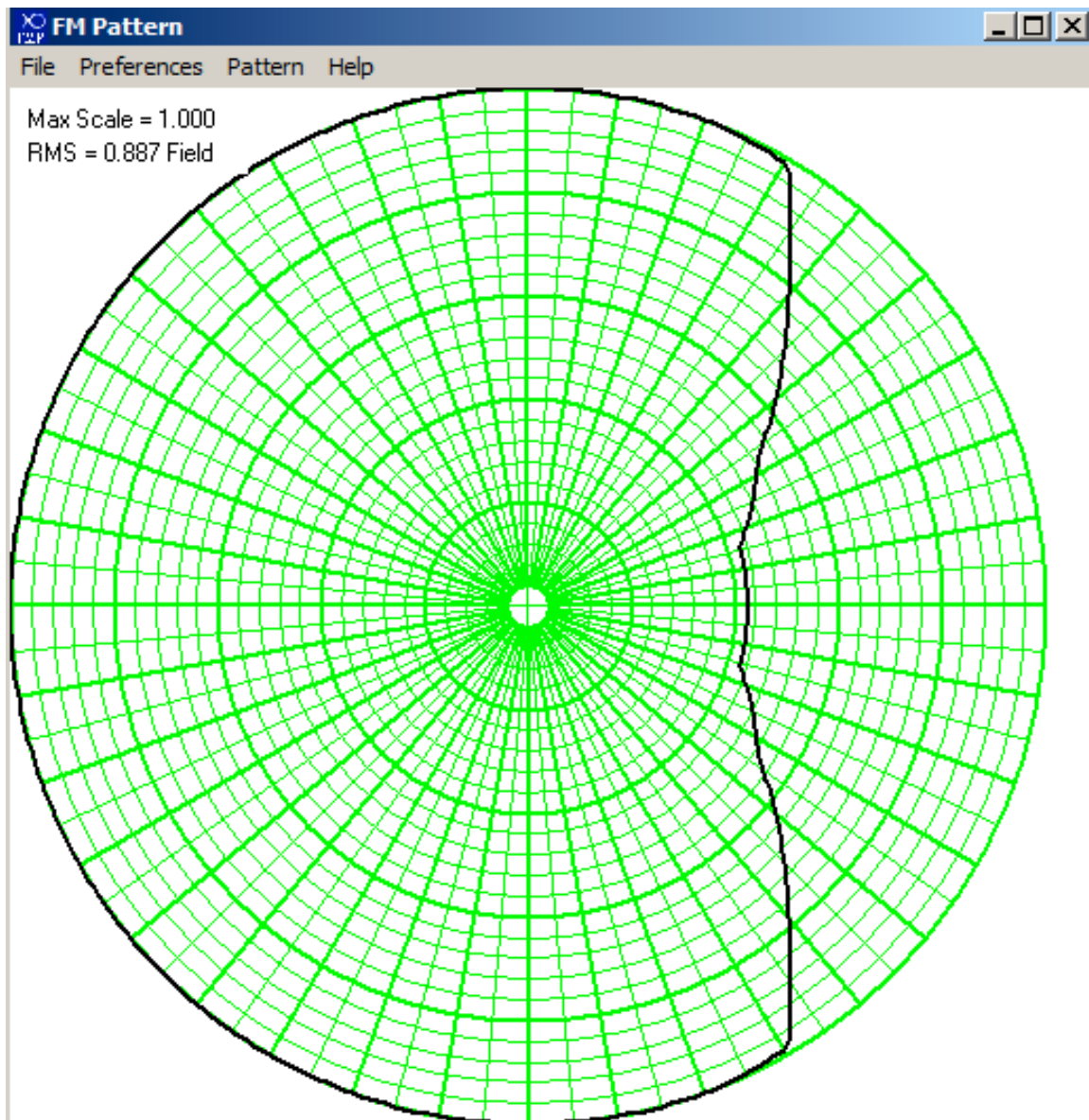
According to CFR 47 §74.1204(a), translators are required to protect all existing FM stations from interference due to overlap of the protected contours of the existing stations with the interfering contours of the new translators.

2017-04-09				Genesee Media Corporation					Page 1	
FM Study for: W248BH				FCC Database Date: 4/08/2017					43-09-17	
Location: ROCHESTER, NY				Channel Class:					77-36-16	
[*] by HAAT indicates calculated as missing in database.										
Call	City, State		Chan	Cl.	Freq	kW	Latitude	Dist.	Required	
Status	Proponent		File Number			HAAT	Longitude	Azm.	Clear (km)	Site

>>>>>>> Study For Channel 248 97.5 mHz <<<<<<<										
WPXYFM	ROCHESTER, NY		250	B	97.9	50.0	43-08-05	2.7	67	
LIC	Fac. No. 53966		BLH-20060831AAR			142	77-35-06	144.6	-64.3	SHORT
W248BH	GREECE, NY		248	D	97.5	.019	43-10-18	5.7	44	
LIC	Fac. No. 150641		BLFT-20150721AAU			66	77-40-15	289.2	-38.3	SHORT
W248BH	GREECE, NY		248	D	97.5	.250	43-10-13	5.8	44	
CP	Fac. No. 150641		BPFT-20160205AAH			140	77-40-23	287.2	-38.2	SHORT
WEPLLP	ROCHESTER, NY		246	L1	97.1	.039	43-10-30	2.5	0	
LIC	Fac. No. 193382		BLL-20151223BGA			48	77-37-06	333.4	2.5	CLOSE
W248AT	CORFU, NY		248	D	97.5	.010	42-59-24	66.7	44	
LIC	Fac. No. 150935		BLFT-20060804AFN			130	78-23-32	254.3	22.7	CLEAR
W248BC	DANSVILLE, NY		248	D	97.5	.010	42-30-39	71.6	44	
LIC	Fac. No. 86505		BLFT-20060412ADP			195	77-38-06	182.0	27.6	CLEAR
WYXL	ITHACA, NY		247	B	97.3	26.0	42-27-54	126.6	92	
LIC	Fac. No. 18051		BMLH-20140219ABB			268	76-22-23	126.8	34.6	CLEAR
WGRF	BUFFALO, NY		245	B	96.9	24.0+	42-57-13	106.0	67	
LIC	Fac. No. 56102		BLH-19970523KC			217	78-52-36	258.3	39.0	CLEAR
CALLOC	TORONTO, ON		247	C1	97.3		43-38-33	154.3	115	
	Fac. No. 95573	-					79-23-15	291.2	39.3	CLEAR
Specially negotiated short-spaced allotment-Accepted by Commission 930405										

1. The W248BH entries are the existing site and construction permit to be amended. The existing site shall be studied to demonstrate the required 60 dBu overlap of existing site to meet requirement for a minor modification.
2. WEPL-LP at 97.1 MHz has been identified, and appropriate protection according to 47 CFR §74.1204(a) has been considered.
3. WPXY-FM is second adjacent, and the 40 dB ratio of desired-to-undesired signal shall be studied in more detail.

Directional Antenna Pattern



W248BH Pattern
Horizontal Plane Pattern
Pattern RMS: .8871 Field

Azimuth	Field	dBk	ERP(kW)	Azimuth	Field	dBk	ERP(kW)
0	1.000	-6.02	0.25	180	1.000	-6.02	0.25
5	1.000	-6.02	0.25	185	1.000	-6.02	0.25
10	1.000	-6.02	0.25	190	1.000	-6.02	0.25
15	1.000	-6.02	0.25	195	1.000	-6.02	0.25
20	1.000	-6.02	0.25	200	1.000	-6.02	0.25
25	0.994	-6.07	0.25	205	1.000	-6.02	0.25
30	0.989	-6.12	0.24	210	1.000	-6.02	0.25
35	0.881	-7.12*	0.19	215	1.000	-6.02	0.25
40	0.785	-8.12*	0.15	220	1.000	-6.02	0.25
45	0.700	-9.12	0.12	225	1.000	-6.02	0.25
50	0.624	-10.12	0.10	230	1.000	-6.02	0.25
55	0.556	-11.12*	0.08	235	1.000	-6.02	0.25
60	0.510	-11.87	0.07	240	1.000	-6.02	0.25
65	0.480	-12.40	0.06	245	1.000	-6.02	0.25
70	0.450	-12.96	0.05	250	1.000	-6.02	0.25
75	0.425	-13.45	0.05	255	1.000	-6.02	0.25
80	0.425	-13.45	0.05	260	1.000	-6.02	0.25
85	0.425	-13.45	0.05	265	1.000	-6.02	0.25
90	0.425	-13.45	0.05	270	1.000	-6.02	0.25
95	0.425	-13.45	0.05	275	1.000	-6.02	0.25
100	0.425	-13.45	0.05	280	1.000	-6.02	0.25
105	0.425	-13.45	0.05	285	1.000	-6.02	0.25
110	0.450	-12.96	0.05	290	1.000	-6.02	0.25
115	0.480	-12.40	0.06	295	1.000	-6.02	0.25
120	0.510	-11.87	0.07	300	1.000	-6.02	0.25
125	0.556	-11.12	0.08	305	1.000	-6.02	0.25
130	0.624	-10.12*	0.10	310	1.000	-6.02	0.25
135	0.700	-9.12	0.12	315	1.000	-6.02	0.25
140	0.785	-8.12	0.15	320	1.000	-6.02	0.25
145	0.881	-7.12*	0.19	325	1.000	-6.02	0.25
150	0.989	-6.12*	0.24	330	1.000	-6.02	0.25
155	0.994	-6.07	0.25	335	1.000	-6.02	0.25
160	1.000	-6.02	0.25	340	1.000	-6.02	0.25
165	1.000	-6.02	0.25	345	1.000	-6.02	0.25
170	1.000	-6.02	0.25	350	1.000	-6.02	0.25
175	1.000	-6.02	0.25	355	1.000	-6.02	0.25

Contour Distances for Proposed Facility

Genesee Media Corporation
FM Contour Distances
W248BH

Azi. Deg.	ERP kW	HAAT m	60 dBu km	48 dBu km	40 dBu km	34 dBu km
0	0.250	204	18.6	38.9	58.4	75.82
5	0.250	205	18.7	39.0	58.5	75.94
10	0.250	207	18.8	39.2	58.7	76.19
15	0.250	207	18.8	39.2	58.7	76.19
20	0.250	207	18.8	39.2	58.7	76.19
25	0.247	206	18.7	39.0	58.5	75.90
30	0.245	204	18.5	38.7	58.1	75.52
35	0.194	204	17.4	36.6	55.4	72.50
40	0.154	199	16.2	34.2	52.3	68.93
45	0.122	196	15.2	32.1	49.6	65.58
50	0.097	193	14.2	30.1	46.7	62.36
55	0.077	189	13.3	28.2	43.9	59.10
60	0.065	186	12.7	26.8	41.8	56.67
65	0.058	180	12.1	25.6	40.1	54.54
70	0.051	174	11.5	24.3	38.2	52.37
75	0.045	169	11.1	23.3	36.7	50.51
80	0.045	167	11.0	23.1	36.5	50.26
85	0.045	166	10.9	23.0	36.3	50.13
90	0.045	166	10.9	23.0	36.3	50.13
95	0.045	169	11.1	23.3	36.7	50.51
100	0.045	168	11.0	23.2	36.6	50.38
105	0.045	168	11.0	23.2	36.6	50.38
110	0.051	166	11.3	23.7	37.4	51.40
115	0.058	164	11.5	24.3	38.4	52.59
120	0.065	161	11.8	24.8	39.1	53.55
125	0.077	160	12.2	25.8	40.7	55.37
130	0.097	158	12.9	27.2	42.7	57.82
135	0.122	156	13.5	28.6	44.8	60.32
140	0.154	146	13.8	29.3	45.9	61.69
145	0.194	142	14.4	30.6	47.9	64.01
150	0.245	133	14.8	31.4	49.2	65.62
155	0.247	126	14.4	30.7	48.4	64.60
160	0.250	117	13.9	29.6	47.1	63.22
165	0.250	118	14.0	29.8	47.3	63.38
170	0.250	119	14.1	29.9	47.5	63.55
175	0.250	121	14.2	30.2	47.8	63.89

Genesee Media Corporation
FM Contour Distances
W248BHX

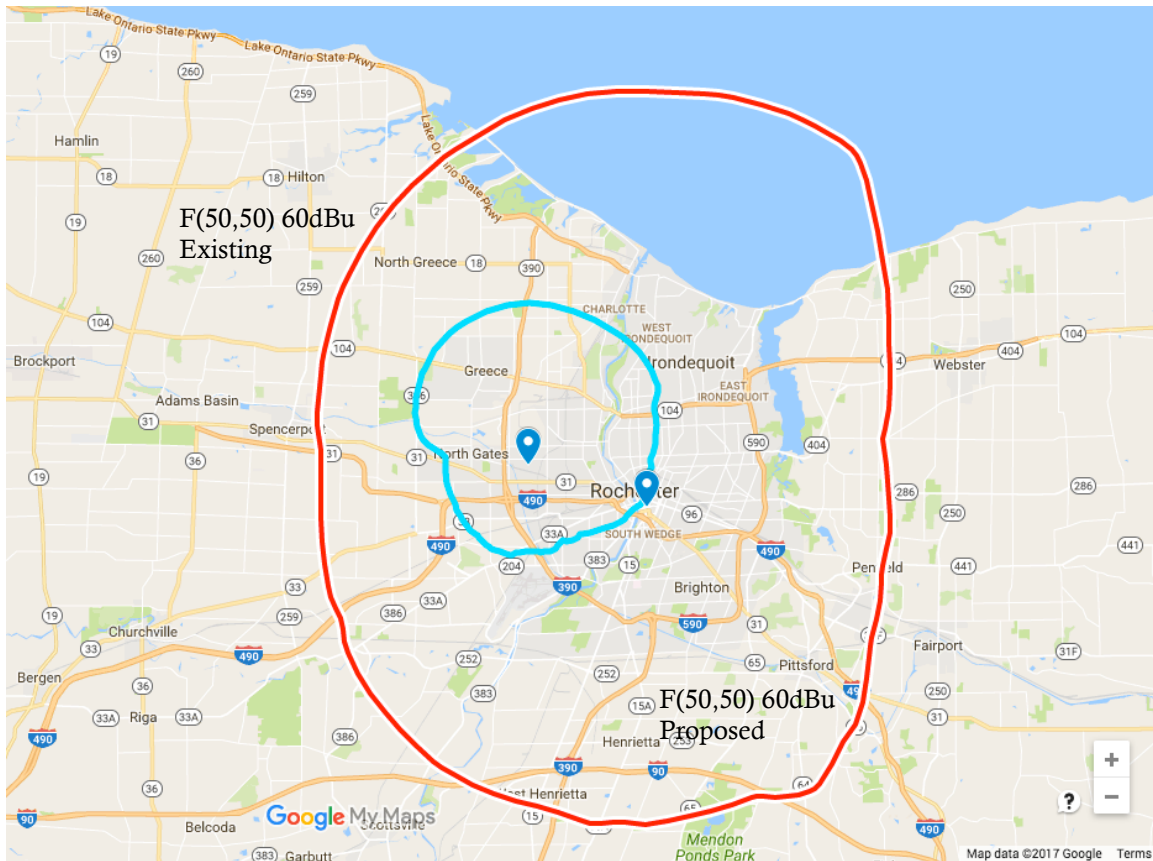
Azi. Deg.	ERP kW	HAAT m	60 dBu km	48 dBu km	40 dBu km	34 dBu km
180	0.250	123	14.3	30.4	48.1	64.24
185	0.250	122	14.2	30.3	47.9	64.07
190	0.250	126	14.5	30.8	48.5	64.75
195	0.250	124	14.4	30.5	48.2	64.41
200	0.250	124	14.4	30.5	48.2	64.41
205	0.250	127	14.5	30.9	48.6	64.92
210	0.250	130	14.7	31.2	49.0	65.42
215	0.250	132	14.8	31.5	49.3	65.75
220	0.250	134	15.0	31.7	49.6	66.08
225	0.250	134	15.0	31.7	49.6	66.08
230	0.250	134	15.0	31.7	49.6	66.08
235	0.250	135	15.0	31.8	49.7	66.24
240	0.250	135	15.0	31.8	49.7	66.24
245	0.250	134	15.0	31.7	49.6	66.08
250	0.250	129	14.7	31.1	48.9	65.25
255	0.250	131	14.8	31.4	49.2	65.58
260	0.250	130	14.7	31.2	49.0	65.42
265	0.250	129	14.7	31.1	48.9	65.25
270	0.250	129	14.7	31.1	48.9	65.25
275	0.250	130	14.7	31.2	49.0	65.42
280	0.250	133	14.9	31.6	49.5	65.91
285	0.250	141	15.4	32.5	50.5	67.19
290	0.250	146	15.6	33.1	51.2	67.97
295	0.250	153	16.0	33.8	52.1	69.02
300	0.250	159	16.4	34.5	52.9	69.91
305	0.250	166	16.8	35.2	53.8	70.91
310	0.250	172	17.1	35.8	54.6	71.75
315	0.250	177	17.4	36.3	55.2	72.43
320	0.250	183	17.7	36.9	55.9	73.22
325	0.250	188	17.9	37.4	56.5	73.85
330	0.250	193	18.1	37.9	57.1	74.47
335	0.250	196	18.3	38.2	57.5	74.84
340	0.250	201	18.5	38.7	58.0	75.45
345	0.250	204	18.6	38.9	58.4	75.82
350	0.250	205	18.7	39.0	58.5	75.94
355	0.250	206	18.7	39.1	58.6	76.07

25 Mile Distance of WOKR and Proposed W248BH Facility



This map shows that the proposed translator's entire 60 dBu contour is contained within the greater of: (i) the 2 mV/m daytime contour of the AM primary station to be rebroadcast, or (ii) a 25 mile radius centered at the AM primary station's transmitter site.

Overlap of existing and proposed facility for W248BH



The above map shows the overlap of the existing W248BH contour and proposed W248BH site. The proposed 60 dBu contour of the proposed modified facility encompasses the majority of the 60 dBu of the existing facility; hence, there is overlap between the proposed and current 60 dBu contour and Applicant concludes this application should be treated as a Minor Change.

W248BH Clearance from WEPL-LP at 97.1

According to 47 FR §74.1204(a)(4), LP100 stations 60 dBu contours are protected for 200 kHz separation and co-channel. Since the proposed minor change of W248BH specifies a frequency of 400 kHz to the LP100 station of question at 97.1 MHz, Applicant concludes the conditions of 47 CFR §74.1204(a)(4) are met.

Request for Waiver of 2nd Adjacent Overlap with WPXY-FM

The proposed W248BH facility is second adjacent to WPXY-FM, and, according to 47 CFR §74.1204(d), *“The provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to ... lack of population”*

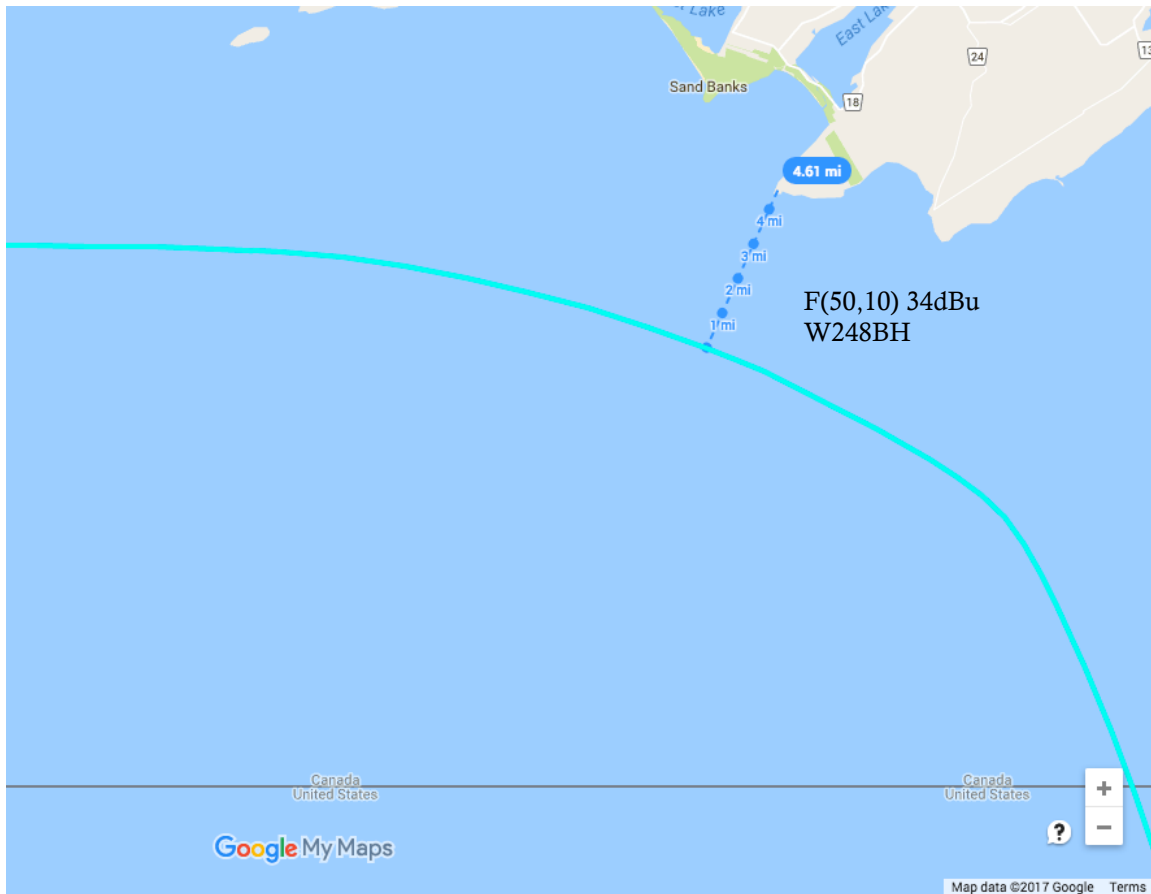
WPXYFM (Facility 53966) Coordinates:	43-08-05 N (NAD27) 77-35-06 W
Distance from WPXYFM to W248BH:	2.7km at 325 degrees
WPXY HAAT:	164m
WPXYFM F(50,50) contour at W248BH:	112.16 dBu

WPXY-FM's contour at the proposed W248BH transmitter site is 112.16 dBu. A 40 dB ratio of undesired to desired signal strength gives an allowable interfering F(50,10) field strength of 132.16 dBu.

The F(50,10) interfering signal strength contour with 0.25 kW ERP is less than one meter from the transmit antenna. The proposed antenna is 138m above ground on a restricted-access rooftop where there are no building structures within one meter of the transmit antenna. Further, the base of the transmit antenna is more than 3 meters above the surface of the equipment shelter on the rooftop.

Therefore, it is the conclusion of the Applicant that 47 CFR §74.1204(d) applies, and that this request for a waiver and minor modification is within the guidelines of the FCC rules.

Canadian Consideration - 47 CFR § 74.1235(d)(3)



Applicant respectfully asks for a waiver for the proposed modification of W248BH. The proposed W248BH 34dBu F(50,10) interfering contour extends north of the US-Canada border within Lake Ontario, and exceeds the 60 km distance limit specified in 47 CFR § 74.1235(d)(3).

The previously granted construction permit, BPFT-20160205AAH demonstrated a 34dBu contour with a distance of 10.1 km from Canadian soil. FM Translator W234AZ application BPFT-20141205CLM and FM Translator W225AR application BPFT-20111205ADN were granted a waiver for the maximum 34dBu distance limit of 47 CFR §74.1235(d)(3) based on the 34 dBu of the proposed facility not entering Canadian soil. W234AZ and W225AR operate in the same market as W248BH, and have a similar 34dBu F(50,10) contour.

The proposed W248BH facility clears all Canadian soil by 7.4 kilometers; therefore, the proposed operation would have no impact on any present or future Canadian FM broadcast facilities. The closest point of Canadian land to the contour is Salmon Point, Ontario at coordinates 43.8570 N, 77.2445 W (NAD 83).

Applicant respectfully requests a waiver of the maximum 34dBu distance limit of 47 CFR §74.1235(d)(3), which would serve the public interest by permitting W248BH to operate at the proposed site with the full effective radiated power of 0.25 kW allowed for fill-in FM translators.

Environmental Compliance.

The proposed antenna is a circularly polarized, one bay FM antenna mounted in a secure location 6.5m above a rebar-enforced, cement rooftop. Access to this rooftop is controlled by the building owner's security organization and maintenance personnel must check-in with the security organization at the access point to gain access to the site.

The antenna's radiation pattern was utilized to determine the effective gain along the rooftop at 5 degree intervals towards the center of radiation of the antenna. Power Density equations from OET Bulletin 65, Edition 97-01 were used as follows to determine power density:

$$S = \frac{PG}{4\pi R^2} \quad 3)$$

where: S = power density (in appropriate units, e.g. mW/cm²)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

or:

$$S = \frac{EIRP}{4\pi R^2} \quad (4)$$

where: EIRP = equivalent (or effective) isotropically radiated power

Based on section 1.1310 of the FCC rules for Occupational/Controlled Exposure, the MPE (Maximum Permissible Exposure) for 97.5 MHz is 1,000 uW/cm². Calculations were performed for to determine RF power density at a level 2m above the rooftop supporting the antenna structure. Since the antenna is circularly, RF power was doubled in the calculations to reflect cross-polarization effects.

W248BH Radiation Showing							
Proposed Antenna							
Proposed Power:			0.5	kW			
Antenna COR at Rooftop			6.5	meters			
OET-65 Power Equation		(PWR * GAIN) / (4 * Pi * DIST^2)					
Exposure Limit			1000	uW/cm^2			
Depression Angle	Relative Field	ERK (in kW)	ERP (in dBk)	Distance from COR to Roof	Distance from Tower Base to Ground Intersection	Power Density (uW/cm^2)	Result
0	1.000	0.500	-3.010				
-5	0.996	0.498	-3.028	74.58	74.30	0.71	CLEAR
-10	0.985	0.493	-3.076	37.43	36.86	2.80	CLEAR
-15	0.966	0.483	-3.161	25.11	24.26	6.10	CLEAR
-20	0.940	0.470	-3.279	19.00	17.86	10.36	CLEAR
-25	0.906	0.453	-3.439	15.38	13.94	15.25	CLEAR
-30	0.866	0.433	-3.635	13.00	11.26	20.40	CLEAR
-35	0.819	0.410	-3.877	11.33	9.28	25.39	CLEAR
-40	0.766	0.383	-4.168	10.11	7.75	29.82	CLEAR
-45	0.707	0.354	-4.516	9.19	6.50	33.31	CLEAR
-50	0.643	0.322	-4.928	8.49	5.45	35.55	CLEAR
-55	0.574	0.287	-5.421	7.94	4.55	36.29	CLEAR
-60	0.500	0.250	-6.021	7.51	3.75	35.33	CLEAR
-65	0.423	0.212	-6.747	7.17	3.03	32.74	CLEAR
-70	0.342	0.171	-7.670	6.92	2.37	28.45	CLEAR
-75	0.259	0.130	-8.877	6.73	1.74	22.77	CLEAR
-80	0.174	0.087	-10.605	6.60	1.15	15.90	CLEAR
-85	0.087	0.044	-13.615	6.52	0.57	8.14	CLEAR
-90	0.000	0.000	-43.010	6.50	-	0.01	CLEAR

Based on section 1.310 of the FCC Rules for General Population Exposure, the MPE is 200 $\mu\text{W}/\text{cm}^2$. Calculations were performed to determine the RF power density on the ceiling of the highest inhabited floor in the structure supporting the transmitting antenna of the proposed facility. Since the antenna is circularly, RF power was doubled in the calculations to reflect cross-polarization effects.

W248BH Radiation Showing							
Proposed Antenna							
Proposed Power:			0.5	kW			
Antenna COR at Rooftop			6.5	meters			
OET-65 Power Equation		(PWR * GAIN) / (4 * Pi * DIST^2)					
Exposure Limit		200 uW/cm^2					
Depression Angle	Relative Field	ERK (in kW)	ERP (in dBk)	Distance from COR to Roof	Distance from Tower Base to Ground Intersection	Power Density (uW/cm^2)	Result
0	1.000	0.500	-3.010				
-5	0.996	0.498	-3.028	74.58	74.30	0.71	CLEAR
-10	0.985	0.493	-3.076	37.43	36.86	2.80	CLEAR
-15	0.966	0.483	-3.161	25.11	24.26	6.10	CLEAR
-20	0.940	0.470	-3.279	19.00	17.86	10.36	CLEAR
-25	0.906	0.453	-3.439	15.38	13.94	15.25	CLEAR
-30	0.866	0.433	-3.635	13.00	11.26	20.40	CLEAR
-35	0.819	0.410	-3.877	11.33	9.28	25.39	CLEAR
-40	0.766	0.383	-4.168	10.11	7.75	29.82	CLEAR
-45	0.707	0.354	-4.516	9.19	6.50	33.31	CLEAR
-50	0.643	0.322	-4.928	8.49	5.45	35.55	CLEAR
-55	0.574	0.287	-5.421	7.94	4.55	36.29	CLEAR
-60	0.500	0.250	-6.021	7.51	3.75	35.33	CLEAR
-65	0.423	0.212	-6.747	7.17	3.03	32.74	CLEAR
-70	0.342	0.171	-7.670	6.92	2.37	28.45	CLEAR
-75	0.259	0.130	-8.877	6.73	1.74	22.77	CLEAR
-80	0.174	0.087	-10.605	6.60	1.15	15.90	CLEAR
-85	0.087	0.044	-13.615	6.52	0.57	8.14	CLEAR
-90	0.000	0.000	-43.010	6.50	-	0.01	CLEAR

At a distance of 2m above the rooftop, the proposed facility will not cause an RF field that is equal or greater than 1,000 $\mu\text{W}/\text{cm}^2$ limit for controlled exposure at any point. At the rooftop, and assuming zero attenuation through the concrete, the proposed facility will not cause an RF field equal or greater than the 200 $\mu\text{W}/\text{cm}^2$ limit on the ceiling of the highest inhabited floor of the structure supporting the radiating antenna. Hence, the proposed facility complies with the requirements of OET 65.

According to OET 65, “Applicants and licensees should be able to calculate, based on considerations of frequency, power and antenna characteristics the distance from their transmitter where their signal produces an RF field equal to, or greater than, the 5% threshold limit. The applicant or licensee then shares responsibility for compliance in any accessible area or areas within this 5% ‘contour’ where the appropriate limits are found to be exceeded.”

Maintenance personnel have access to the antenna by way of a direct hatchway. A warning sign is clearly posted on the hatch stating the danger of RF exposure with a phone number to call to the facility operator.

Applicant certifies it, in coordination with other users of the site, will reduce power or cease operations, as necessary, to protect persons needing access to the site, tower, or antenna from RF exposure.

Certification

This Consolidated Engineering report, relative to an application to change the operating parameters and location of W248BH has been prepared by the undersigned. It is submitted that this statement, the amendments contained within, and all supporting exhibits, comply with the Rules and Regulations of the Federal Communications Commission and all representations contained herein are true to the best of my knowledge.

A handwritten signature in black ink, appearing to read 'Brian P. McGlynn', with a stylized, flowing script.

Brian P. McGlynn
Genesee Media Corporation
April 10, 2017