May 2013
FM Translator K283BU
Walla Walla, Washington Channel 283D
Background & Allocation Study

Background

The instant long-form application is being filed in order to modify the antenna model to be used for FM translator K283BU. The antenna model is the only change being made from the authorized facility in BNPFT-20130213ADH.

The proposed transmitter site is not located within the 39 km buffer of any defined Market Grid from the LPFM *Fourth Report and Order;* the nearest Market Grid is over 100 kilometers distant. Nor is the transmitter site at an out-of-grid location within a Top-50 Spectrum Limited Market. Therefore, no preclusion study is required as a part of this application.

Allocation Study

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. The attached allocation study map demonstrates compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

The attached spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

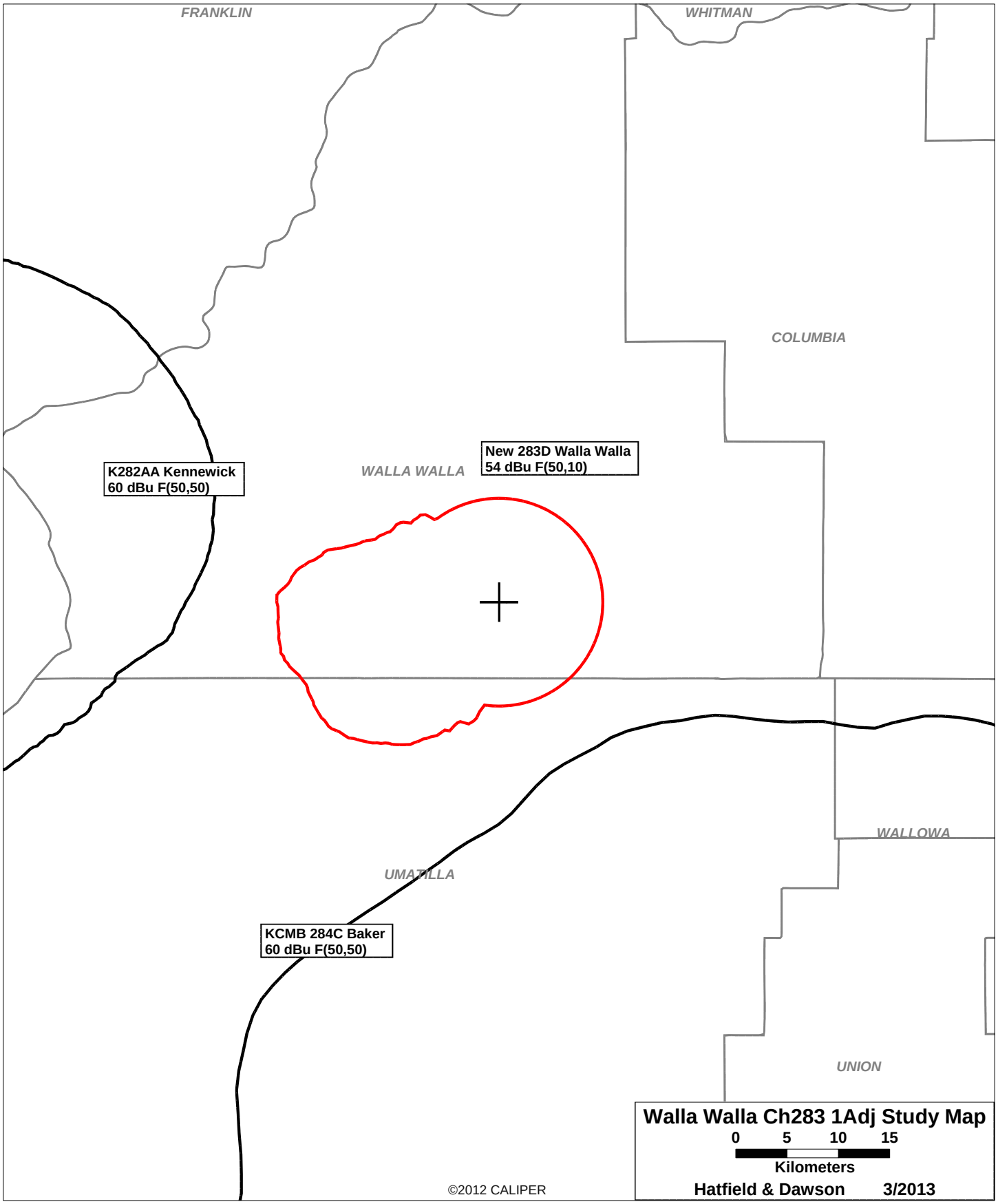
FMSTUDY.EXE Copyright 2008, Hatfield & Dawson, LLC Version 1.80

SEARCH PARAMETERS FM Database Date: 130506

Channel: 283A 104.5 MHz
Latitude: 46 4 2
Longitude: 118 24 5
Safety Zone: 50 km
Job Title: WALLA WALLA 283

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KRKG-FM	PASCO	229A	0.450	46-06-15	274.4	56.50	10
LIC	WA	BLH-90706ADN	93.7	361.0	119-07-48		46.50	CLEAR
KCUW-LP	PENDLETON	282L1	0.100	45-39-51	206.3	49.95	56
LIC	OR	BLL-90330AJI	104.3	-76.1	118-41-09		-6.05	SHORT
K282AA	KENNEWICK, ETC. (OR)	282D	0.274	46-06-15	274.4	56.46	0
LIC	WA	BRFT-840723ND	104.3	525.0	119-07-46		0.00	TRANS
KHTR	PULLMAN	282C1	24.000	46-48-40	53.5	141.00	133
LIC	WA	BLH-870112KB	104.3	509.0	116-54-55		8.00	CLOSE
	MORO	283C2	0.000	45-29-03	251.1	192.36	166
VAC	OR	RM-10663	104.5	0.0	120-43-48		26.36	CLEAR
K283BX	MABTON	283D	0.062	46-18-43	282.5	132.52	0
CP	WA	BNPFT-30322AHW	104.5	199.0	120-04-53		0.00	TRANS
KGZGaux	NEWPORT	283C1	4.000 DA	47-41-52	20.0	193.35	0
LIC	WA	BXLH-50914ABW	104.5	79.0	117-31-07		0.00	AUX
K283BU	WALLA WALLA	283D	0.250	46-04-02	0.0	0.00	0
CP	WA	BNPFT-30313ADH	104.5	127.0	118-24-05		0.00	TRANS
KCMB	BAKER	284C	100.000	45-07-26	155.0	115.51	165
LIC	OR	BLH-880719KB	104.7	532.0	117-46-48		-49.49	SHORT
K285FN	KENNEWICK WEST	285D	0.019	46-14-04	285.0	73.38	0
LIC	WA	BLFT-70614AAX	104.9	365.0	119-19-13		0.00	TRANS

END OF FM SPACING STUDY FOR CHANNEL 283


FRANKLIN
WHITMAN
COLUMBIA
WALLA WALLA
New 283D Walla Walla
54 dBu F(50,10)
K282AA Kennewick
60 dBu F(50,50)
WALLOWA
UMATILLA
KCMB 284C Baker
60 dBu F(50,50)
UNION
Walla Walla Ch283 1Adj Study Map
0 5 10 15
Kilometers
Hatfield & Dawson 3/2013
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Walla Walla, Washington Channel 283D
RF Exposure Study

Facilities Proposed
The proposed operation will be on Channel 283D (104.5 MHz) with an effective radiated power of 250 watts. Operation is proposed with an antenna to be mounted on an existing tower with FCC Antenna Structure Registration Number 1037809.

RF Exposure Calculations
OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

> When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . .For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Calculations of the power density produced by the proposed antenna system have been made assuming that the antenna will radiate 100% power straight down to a point 2 meters above the base of the tower (57 meters below the antenna). Under this “worst case” calculation, the highest calculated ground level power density from the translator occurs at the base of the antenna support structure. At this point the power density is calculated to be 5.1 μW/cm², which is 2.6% of 200 μW/cm² (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.