October 2015
FM Translator K280GE
Aberdeen, Washington Channel 281D
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 proposed translator transmitter site is located within the 60 dBu protected contour of third-adjacent channel station KDUX-FM 284C2 Hoquiam. The proposed site is 0.17 km from the KDUX-FM transmitter site. Given the KDUX-FM antenna's 31 kW ERP, that station places a 137.2 dBu contour at the translator transmitter site per a Free Space calculation. The corresponding interfering contour from the translator is 137.2 + 40 = 177.2 dBu, which extends just 0.2 meters from the antenna per a Free Space calculation and does not reach ground level. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KDUX-FM.

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 2013, Hatfield & Dawson, LLC Version 1.82

SEARCH PARAMETERS FM Database Date: 150929

Channel: 281A 104.1 MHz

Latitude: 46 56 0

Longitude: 123 43 57

Safety Zone: 50 km

Job Title: ABERDEEN 281

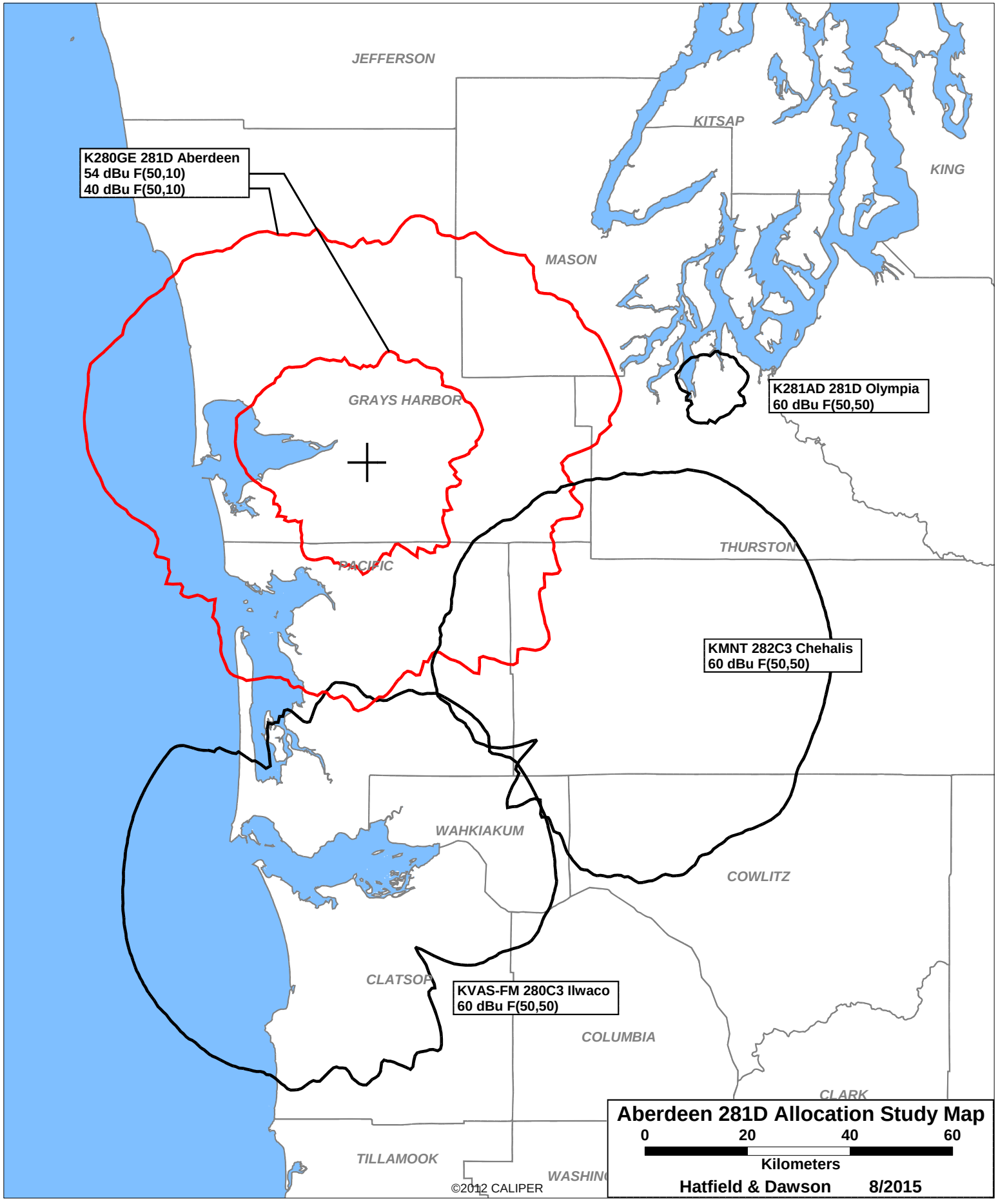
Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)		Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K278BH	ASTORIA		278D	0.050	DA	46-15-46	189.0	75.46	0
LIC	OR	BLFT-70410AAW	103.5	351.0		123-53-09		0.00	TRANS
K278CG	SHELTON		278D	0.250	DA	47-08-20	62.8	50.52	0
APP	WA	BPFT-50827AAE	103.5	0.0		123-08-23		0.00	TRANS
K278CG	SHELTON		278D	0.070	DA	47-08-20	62.8	50.52	0
LIC	WA	BLFT-50826ABO	103.5	0.0		123-08-23		0.00	TRANS
KHTPaux	TACOMA		279C	50.000	DA	47-32-35	60.5	140.52	0
LIC	WA	BXLH-01018ACI	103.7	388.0		122-06-25		0.00	AUX
K280GE	ABERDEEN		280D	0.160		46-56-00	0.0	0.00	0
LIC	WA	BLFT-41014AAT	103.9	0.0		123-43-57		0.00	TRANS
K280FF	CHEHALIS		280D	0.040		46-36-43	120.8	69.36	0
LIC	WA	BLFT-50906ABY	103.9	86.0		122-57-15		0.00	TRANS
KVAS-FM	ILWACO		280C3	11.000		46-10-56	183.7	83.67	89
LIC	WA	BLH-60213ACC	103.9	151.0		123-48-09	SS	-5.33	SHORT
NEW	VANCOUVER		281C	9.000	DA	49-21-17	11.8	275.36	247
	BC	-80121CAN	104.1	600.0		122-57-25		28.36	CLEAR
NEW	VANCOUVER		281C	8.000	DA	49-21-17	11.8	275.36	247
	BC	-70601CAN	104.1	600.0		122-57-25		28.36	CLEAR
KFIS	SCAPPOOSE		281C2	7.000		45-29-20	153.2	179.43	166
LIC	OR	BLH-20306AAK	104.1	386.0		122-41-40	SS	13.43	CLEAR
KFISaux	SCAPPOOSE		281C2	2.450		45-29-20	153.2	179.43	0
LIC	OR	BXLH-40908AAQ	104.1	322.0		122-41-40		0.00	AUX
KAFE	BELLINGHAM		281C	60.000	DA	48-40-50	18.6	205.43	226
LIC	WA	BLH-91204ADR	104.1	701.0		122-50-26		-20.57	SHORT
K281AD	OLYMPIA		281D	0.050		47-03-10	78.5	68.74	0
LIC	WA	BLFT-931228TD	104.1	94.0		122-50-45		0.00	TRANS
NEW-T	TACOMA		281D	0.092		47-15-50	70.2	111.50	0
LIC	WA	BLFT-70618ABD	104.1	164.0		122-20-45		0.00	TRANS

SEARCH PARAMETERS FM Database Date: 150929

Channel: 281A 104.1 MHz
Latitude: 46 56 0
Longitude: 123 43 57
Safety Zone: 50 km
Job Title: ABERDEEN 281

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KXDDaux	YAKIMA		281C1	1.000	46-36-09	97.3	249.37	0
LIC	WA	BXLH-40718ABE	104.1	-59.0	120-30-13		0.00	AUX
KMNT	CHEHALIS		282C3	2.350	46-33-18	129.0	66.56	89
LIC	WA	BLH-50720AEZ	104.3	322.0	123-03-27		-22.44	SHORT
ABSOLUTE MINIMUM 73.215 SPACING = 72 KM								
KDUXaux	ABERDEEN		284C2	0.040	46-55-55	223.7	0.21	0
LIC	WA	BXLH-30228APH	104.7	117.0	123-44-04		0.00	AUX
KDUX-FM	HOQUIAM		284C2	31.000	46-56-01	79.6	0.17	55
LIC	WA	BLH-40506ACW	104.7	110.0	123-43-49		-54.83	SHORT

==== END OF FM SPACING STUDY FOR CHANNEL 281 ====


JEFFERSON
KITSAP
KING
MASON
GRAYS HARBOR
PACIFIC
THURSTON
WAHKIAKUM
COWLITZ
CLATSOP
COLUMBIA
CLARK
TILLAMOOK
K280GE 281D Aberdeen
54 dBu F(50,10)
40 dBu F(50,10)
K281AD 281D Olympia
60 dBu F(50,50)
KMNT 282C3 Chehalis
60 dBu F(50,50)
KVAS-FM 280C3 Ilwaco
60 dBu F(50,50)
Aberdeen 281D Allocation Study Map
0 20 40 60
Kilometers
Hatfield & Dawson 8/2015
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October 2015
FM Translator K280GE
Aberdeen, Washington Channel 281D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 280D (103.9 MHz) with an effective radiated power of 250 watts. Operation is proposed with the existing K280GE antenna, which is mounted on an existing tower on Cosmopolis Hill.

The proposed antenna support structure will not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

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.

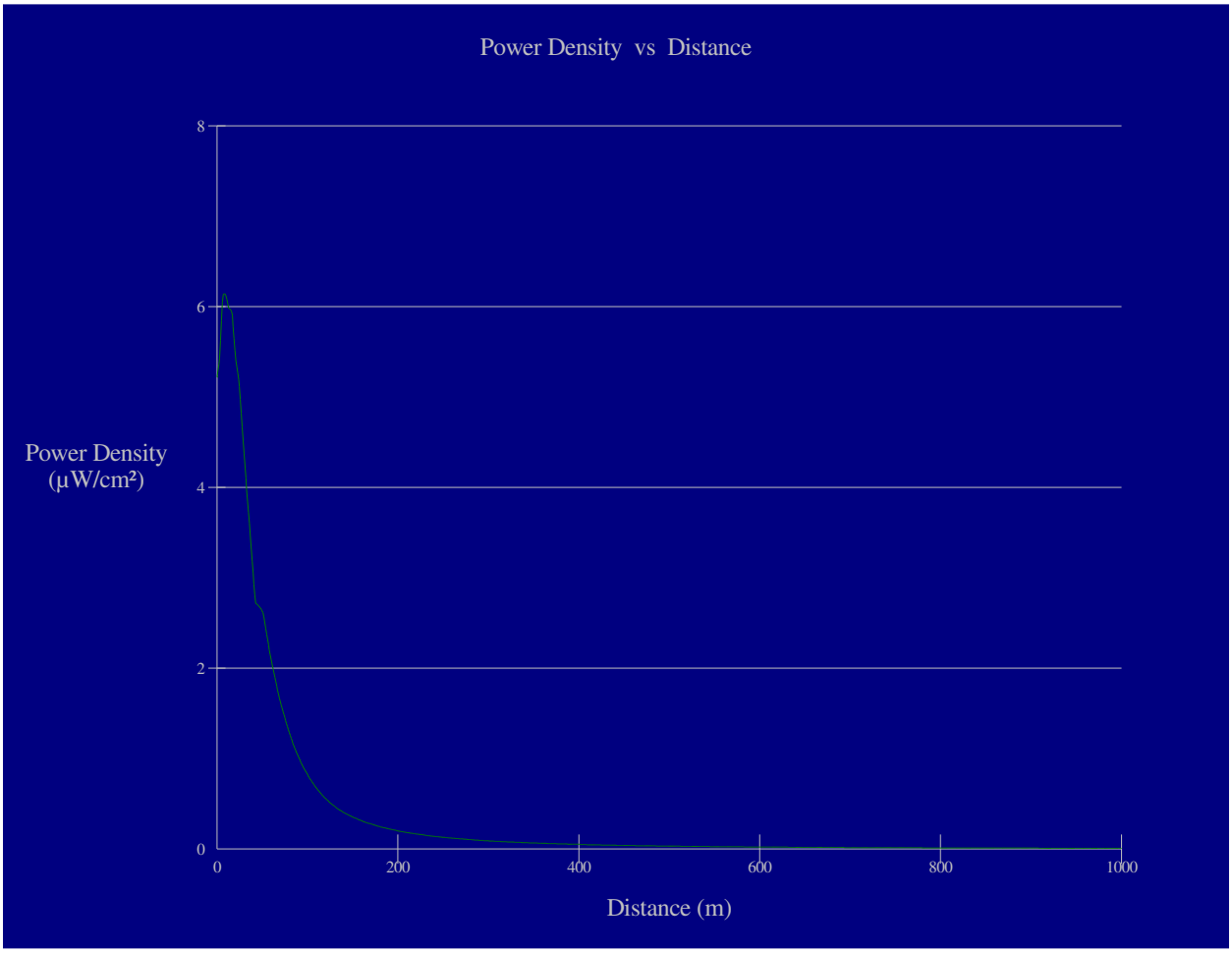
Ground level power densities have been calculated for locations extending from the base of the

tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the element pattern for the dipole antenna proposed for use. The highest calculated ground level power density occurs at a distance of 8 meters from the base of the antenna support structure. At this point the power density is calculated to be 6.1 $\mu W/cm^2$.

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.



Ground-Level RF Exposure **OET FMModel**

Aberdeen 281D

Antenna Type:	Shively 6020-1 dipole
No. of Elements:	1
Element Spacing:	1.0 wavelength
Distance:	1000 meters
Horizontal ERP:	zero kW
Vertical ERP:	0.250 kW
Antenna Height:	38 meters AGL

Maximum Calculated Power Density is 6.1 µW/cm^2 at 8 meters from the antenna structure.