

March 2013
New FM Translator
Cook, Washington Channel 264D
Background & Allocation Study

Background

The instant long-form application is being filed in response to the Commission's February 26, 2013 Public Notice (DA 13-283, Report No. AUC-03-83-D), announcing the opening of a window for the filing of FCC Form 349 FM translator construction permit applications for 713 "tech box" proposals from the March 2003 filing window.

Included among the tech box proposals listed in Attachment A of the Public Notice was the proposal by M.S.W. Communications, L.L.C., for a new FM translator on Channel 264D at Cook, Washington. The instant Form 349 application incorporates a minor amendment to the original tech box proposal, now proposing operation from a different transmitter site. As is demonstrated on the attached contour map exhibit, the proposed 60 dBu contour overlaps the original tech box 60 dBu contour.

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 Portland, Oregon, the nearest edge of which is located fully 74 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

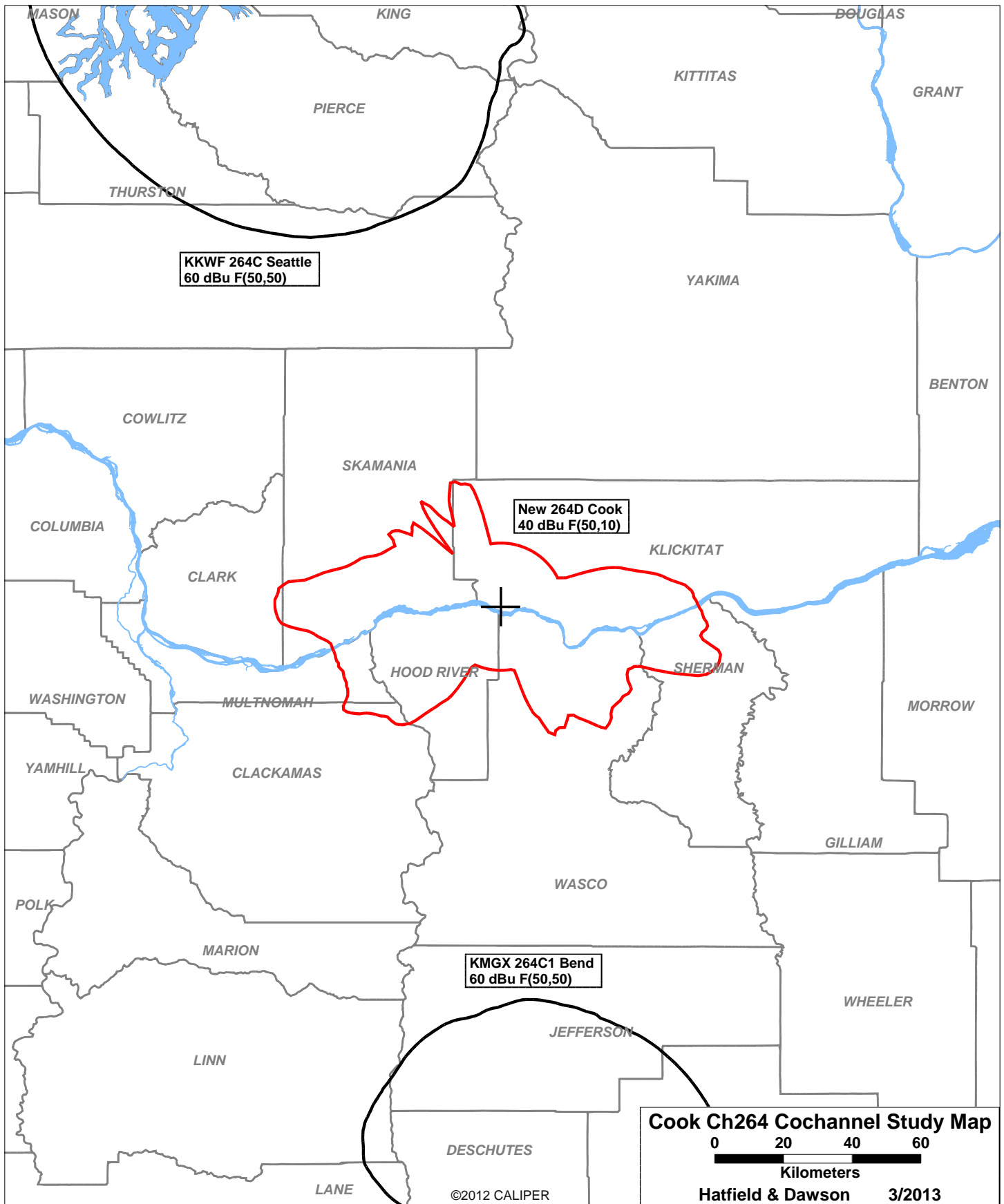
The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited 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 proposed facility will operate with an ERP of less than 100 watts. Therefore there are no spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

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SEARCH PARAMETERS                               FM Database Date: 130318
Channel: 264A    100.7 MHz                      Page 1
Latitude: 45 42 41
Longitude: 121 25 58
Safety Zone: 32 km
Job Title: COOK 264
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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KHRV LIC	HOOD RIVER OR	211A BLED-01109ABT	211A 90.1	0.065 227.0	45-39-45 121-28-14	208.4	6.18 -3.82	10 SHORT
KKRZ LIC	PORTLAND OR	262C BLH-11214AAE	262C 100.3	100.000 470.0	45-31-21 122-44-45	258.8	104.55 9.55	95 CLOSE
KKRZaux LIC	PORTLAND OR	262C BXLH-30617ABD	262C 100.3	40.000 409.0	45-31-21 122-44-46	258.9	104.57 0.00	0 AUX
KMGX LIC	BEND OR	264C1 BLH-5892	264C1 100.7	50.000 158.0	44-04-40 121-19-49	177.4	181.72 -18.28	200 SHORT
NEW-T APP	COOK WA	264D BNPFT-30317BSD	264D 100.7	0.050 637.0	45-43-20 121-26-16	342.1	1.27 0.00	0 TRANS
KKWF LIC	SEATTLE WA	264C BLH-81120AFT	264C 100.7	68.000 DA 707.0	47-30-14 121-58-29	348.5	203.54 -22.46	226 SHORT
KKWFaux LIC	SEATTLE WA	264C BXLH-10327AAL	264C 100.7	50.000 DA 388.0	47-32-35 122-06-25	346.1	210.06 0.00	0 AUX
KXL-FM LIC	PORTLAND OR	266C BLH-00503ACD	266C 101.1	100.000 502.0	45-30-58 122-43-59	258.3	103.72 8.72	95 CLOSE
KXL-aux LIC	PORTLAND OR	266C BLH-970715KE	266C 101.1	22.500 395.0	45-30-57 122-43-52	258.3	103.58 0.00	0 AUX

===== END OF FM SPACING STUDY FOR CHANNEL 264 =====



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RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 264D (100.7 MHz) with an effective radiated power of 99 watts. Operation is proposed with an antenna to be mounted on an existing tower on Burdoin Mountain.

The antenna support structure does 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

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.

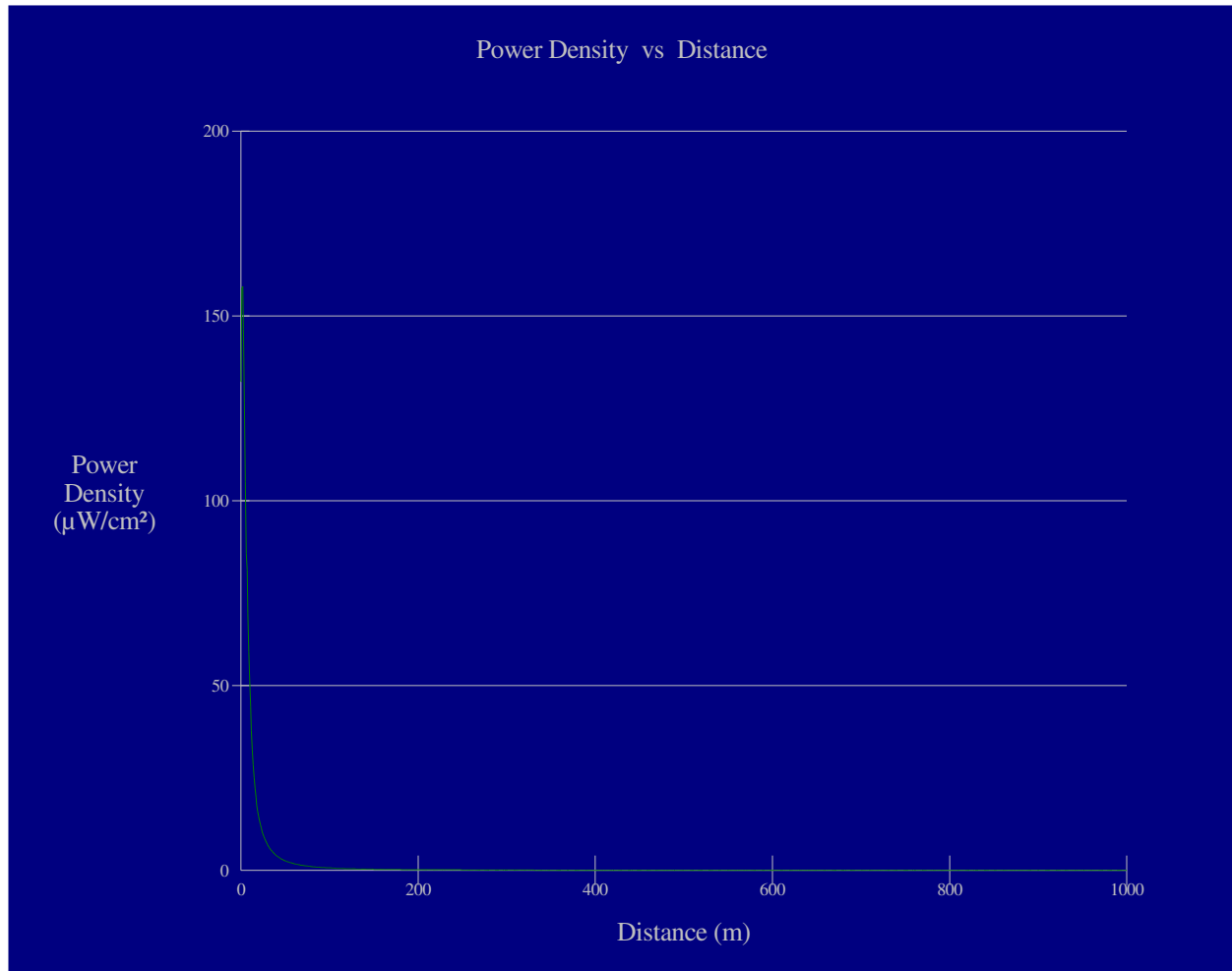
D is the distance in meters from the center of radiation to the calculation point.

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 FM translator antenna system assume a Type 1 element pattern, which is the "worst case" element pattern. The highest calculated ground level power density occurs at a distance of 2 meters from the base of the antenna support structure. At this point the power density is calculated to be 158.0 $\mu W/cm^2$, which is 79% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

A search of the FCC database indicates that there are no other broadcast users of this site.

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 exposure in excess of FCC guidelines.



Ground-Level RF Exposure

OET FMModel

Cook 264D

Antenna Type: ring-stub element model assumed

No. of Elements: 1

Element Spacing: 1 wavelength

Distance: 1000 meters

Horizontal ERP: 0.099 kW

Vertical ERP: 0.099 kW

Antenna Height: 7 meters AGL

Maximum Calculated Power Density is 158.0 $\mu\text{W}/\text{cm}^2$ at 2 meters from the antenna structure.