

March 2013
New FM Translator
Lewiston, Idaho Channel 280D
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 Radio Palouse for a new FM translator on Channel 280D at Lewiston, Idaho. The instant Form 349 application incorporates a minor amendment to the original tech box proposal, now proposing operation from a different transmitter site. 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 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

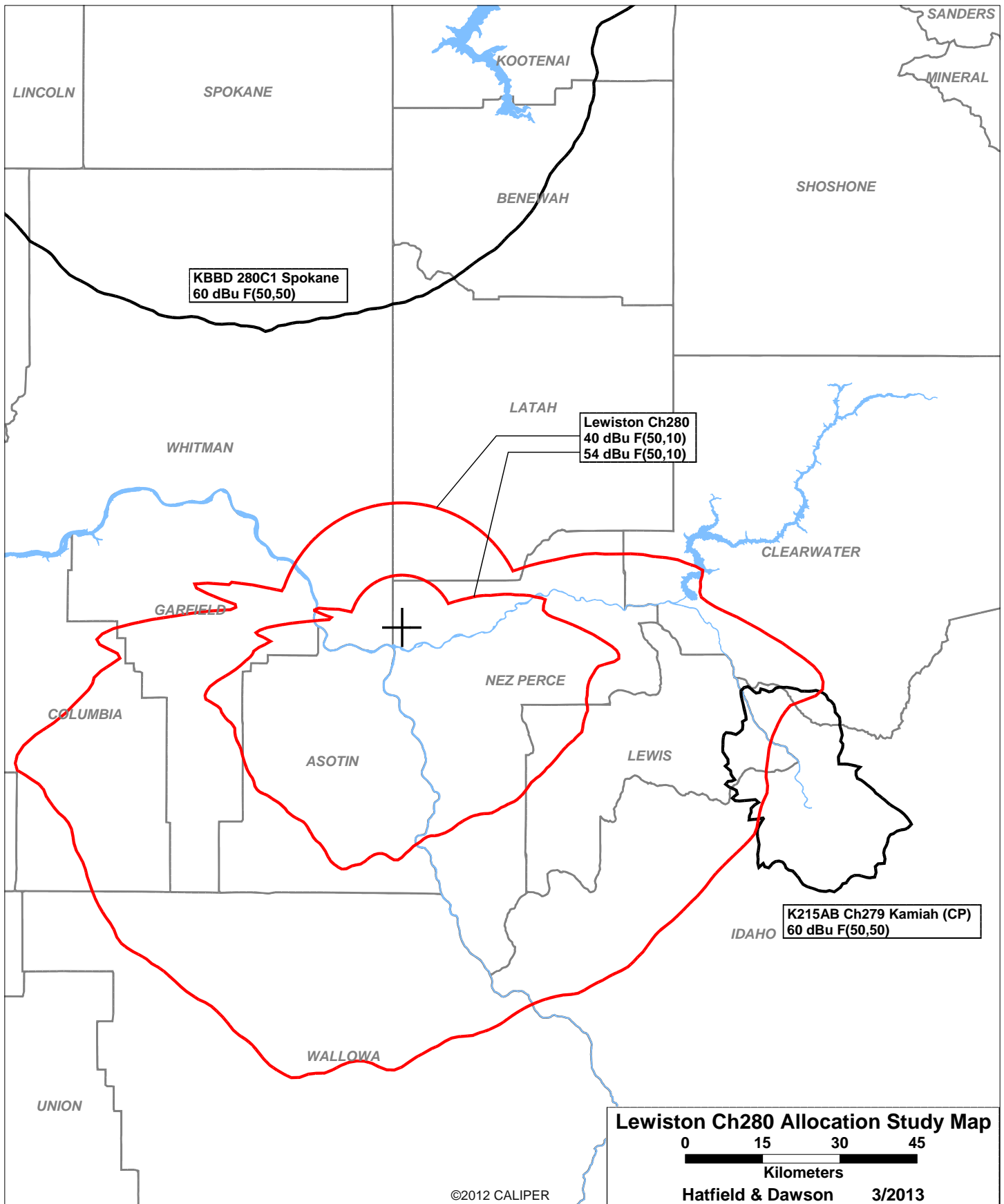
The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited 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.

```
=====
SEARCH PARAMETERS                               FM Database Date: 130311
Channel: 280A    103.9 MHz                      Page 1
Latitude: 46 27 38
Longitude: 117 1 0
Safety Zone: 50 km
Job Title: LEWISTON 280
```

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K278AR LIC	MOSCOW ID	BLFT-20813ABP	278D 103.5	0.005 598.0	46-48-41 116-54-49	11.4	39.79 0.00	0 TRANS
K215AB CP	KAMIAH ID	BPFT-00429AAA	279D 103.7	0.133 464.0	46-10-17 116-02-15	112.8	81.98 0.00	0 TRANS
NEW-T APP	LEWISTON ID	BNPFT-30312AED	280D 103.9	0.250 597.0	46-27-34 117-01-51	263.5	1.10 0.00	0 TRANS
KBBD LIC	SPOKANE WA	BLH-20802AAS	280C1 103.9	39.000 432.0	47-36-04 117-17-53	350.6 SS	128.59 -71.41	200 SHORT
KHTR LIC	PULLMAN WA	BLH-870112KB	282C1 104.3	24.000 509.0	46-48-40 116-54-55	11.2	39.73 -35.27	75 SHORT

===== END OF FM SPACING STUDY FOR CHANNEL 280 =====



**March 2013
New FM Translator
Lewiston, Idaho Channel 280D
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 an antenna to be mounted on an existing tower with FCC Antenna Structure Registration Number 1245154.

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.

Since the Commission staff does not recognize the PSI FML "double V" antenna as being equivalent to the Jampro "double V" antenna for purposes of evaluation using the FMModel software, calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the "worst case" element pattern for a "ring stub" antenna. Under this worst-case assumption, the highest calculated ground level power density occurs at a distance of 20 meters from the base of the antenna support structure. At this point the power density is calculated to be 11.7 $\mu W/cm^2$.

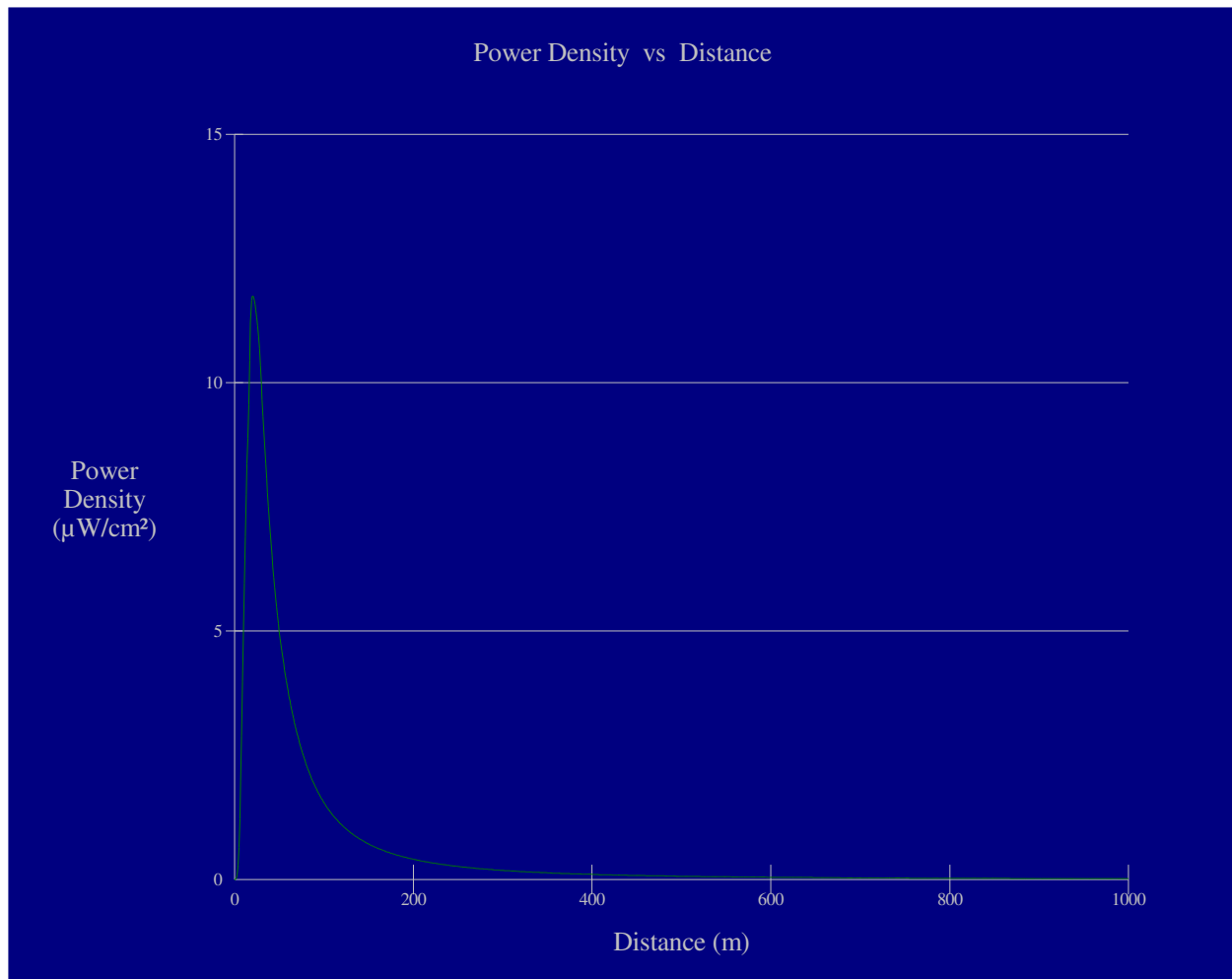
Calculations of the power density produced by Lewiston Ch280 and the other stations at this transmitter site are summarized in the following table:

Call	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Max Exposure	Gen Pub FCC Limit	% of Limit
Lewiston 280	0.250 kW avg PSI FML-2 half wave (ring stub assumed)	FMMModel	15 m	11.7 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	5.9%
K265AP	0.108 kW avg model unknown (ring stub assumed)	FMMModel	15 m	25.6 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	12.8%
KATW	100 kW avg SHI 6810-8 full wave	FMMModel	52 m	109.7 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	54.9%
KIDQ-LP	11.4 kW peak PSILP8AWR	0.100	30 m	2.4 $\mu\text{W}/\text{cm}^2$	366 $\mu\text{W}/\text{cm}^2$	0.7%

(For TV translators and LPTV stations, the relative field value indicated is the maximum value which occurs at 45 degrees or more below the horizontal, based on the manufacturer's vertical plane pattern. The resulting adjusted ERP value is assumed to be radiated straight down to a point 2 meters above ground level at the base of the tower.)

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of Lewiston 280 and the present operation of the other stations at this site (were their maxima to coincide, which they do not) is 74.3% of the FCC standard for uncontrolled environments.

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

Lewiston Ch280

Antenna Type: PSI FML-2 half-wave (ring-stub assumed for this study)

No. of Elements: 2

Element Spacing: 0.5 wavelength

Distance: 1000 meters

Horizontal ERP: 0.250 kW

Vertical ERP: 0.250 kW

Antenna Height: 15 meters AGL

Maximum Calculated Power Density is $11.7 \mu\text{W}/\text{cm}^2$ at 20 meters from the antenna structure.