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**Proposed Translator  
Channel 286D at Coos Bay, OR  
To Rebroadcast KMHS(AM) 1420 kHz Coos Bay, OR  
November 2017**

**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 maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

## SEARCH PARAMETERS

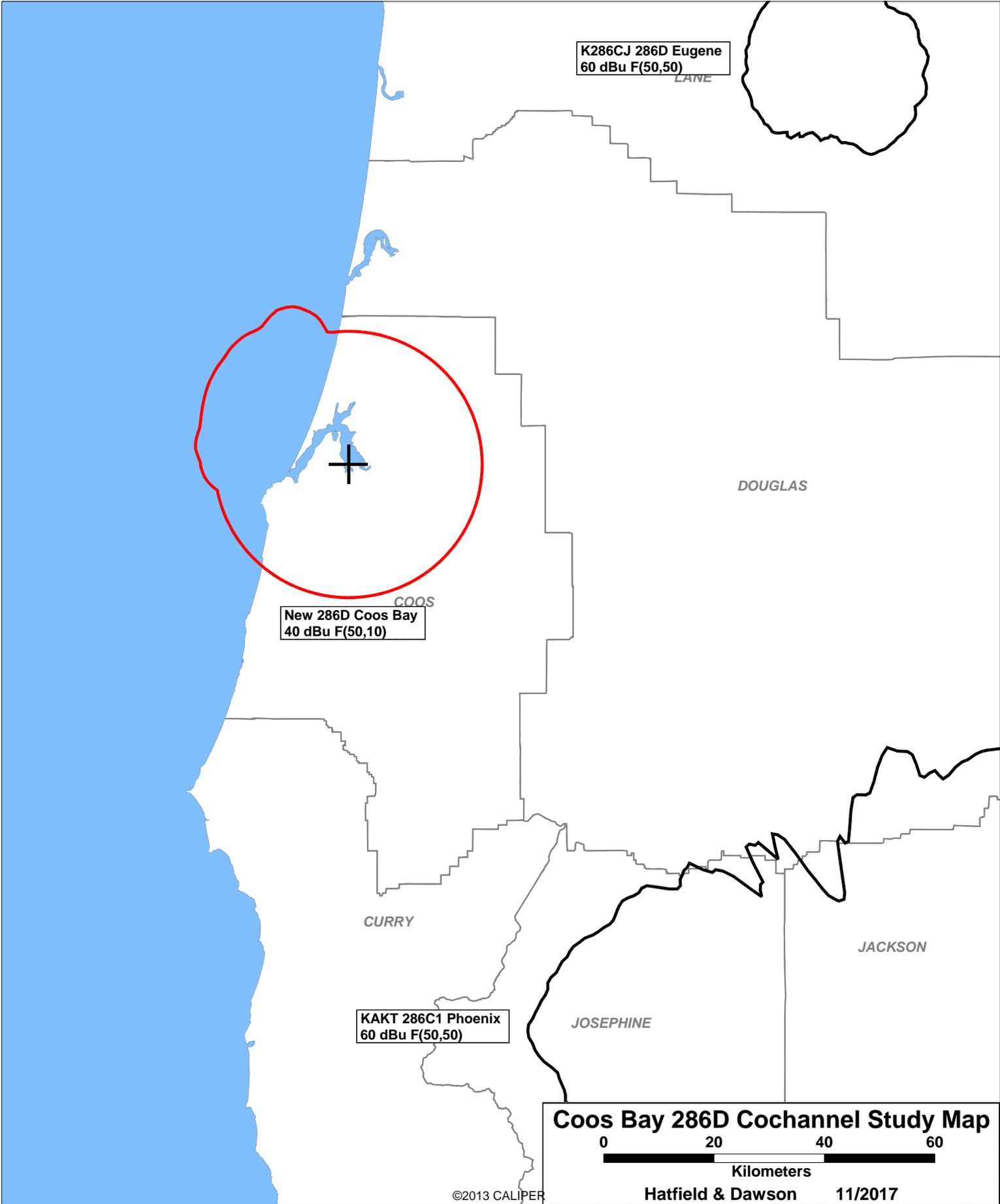
FM Database Date: 171024

Channel: 286A 105.1 MHz  
 Latitude: 43 22 7  
 Longitude: 124 12 11  
 Safety Zone: 50 km  
 Job Title: COOS BAY 286

Page 1

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K283AD LIC	ROSEBURG OR	BLFT-941207TH	283D 104.5	0.043 206.0	43-12-24 123-21-47	104.5	70.51 0.00	0 TRANS
KDUK-FM LIC	FLORENCE OR	BLH-70727AIU	284C 104.7	68.000 707.0	44-17-28 123-32-18	27.2	115.60 20.60	95 CLEAR
K285FH LIC	GLIDE OR	BLFT-50210AUD	285D 104.9	0.010 863.0	43-11-44 123-06-57	102.0	90.32 0.00	0 TRANS
K285GA LIC	GOLD BEACH OR	BLFT-90824AFS	285D 104.9	0.077 DA 714.0	42-23-50 124-21-50	187.0	108.71 0.00	0 TRANS
NEW-T APP	COOS BAY OR	BNPFT-70801AHI	286D 105.1	0.250 0.0	43-22-07 124-12-11	0.0	0.00 0.00	0 TRANS
K286CJ LIC	EUGENE OR	BLFT-60623AAA	286D 105.1	0.099 312.0	44-00-07 123-06-47	50.8	112.59 0.00	0 TRANS
KAKT LIC	PHOENIX OR	BLH-901001KD	286C1 105.1	52.000 166.0	42-25-41 123-00-04	136.5	143.37 -56.63	200 SHORT
K287BF LIC	GLIDE OR	BLFT-50929AJL	287D 105.3	0.010 962.0	43-21-48 123-03-22	90.0	92.97 0.00	0 TRANS
KUPO-LP LIC	PORT ORFORD OR	BLL-70206AAF	288L1 105.5	0.100 -42.8	42-44-57 124-29-44	199.1	72.82 43.82	29 CLEAR

===== END OF FM SPACING STUDY FOR CHANNEL 286 =====



K286CJ 286D Eugene  
60 dBu F(50,50)

New 286D Coos Bay  
40 dBu F(50,10)

KAKT 286C1 Phoenix  
60 dBu F(50,50)

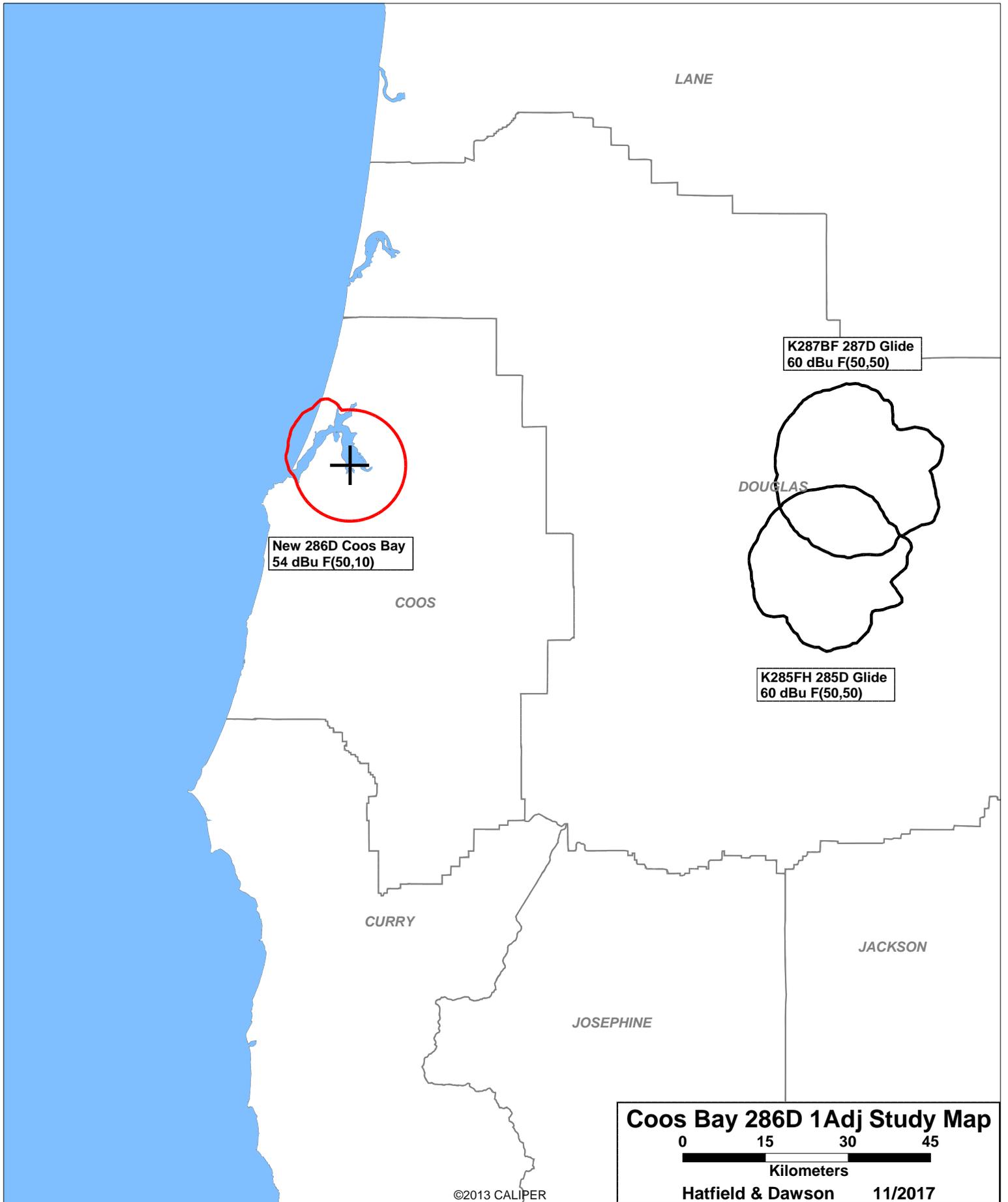
**Coos Bay 286D Cochannel Study Map**

0 20 40 60

Kilometers

Hatfield & Dawson 11/2017

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**Coos Bay 286D 1 Adj Study Map**

0 15 30 45

Kilometers

Hatfield & Dawson 11/2017

## Facilities Proposed

The proposed operation will be on Channel 286D (105.1 MHz) with an effective radiated power of 0.250 kilowatts. Operation is proposed with a 2-element circularly-polarized omni-directional half-wave-spaced antenna. The antenna will be side-mounted on an existing tower with FCC Antenna Structure Registration Number 1258231. This tower is also used by KMHS(AM) and KMHS-FM.

## 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 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed translator antenna system assume a Type 1 element pattern, which is the element pattern for the SWR FM1-2HW antenna proposed for use. The highest calculated ground level power density occurs at a distance of 65 meters from the base of the antenna support structure. At this point the power density is calculated to be 1.2  $\mu W/cm^2$ , which is 0.6% of 200  $\mu W/cm^2$  (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 500 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

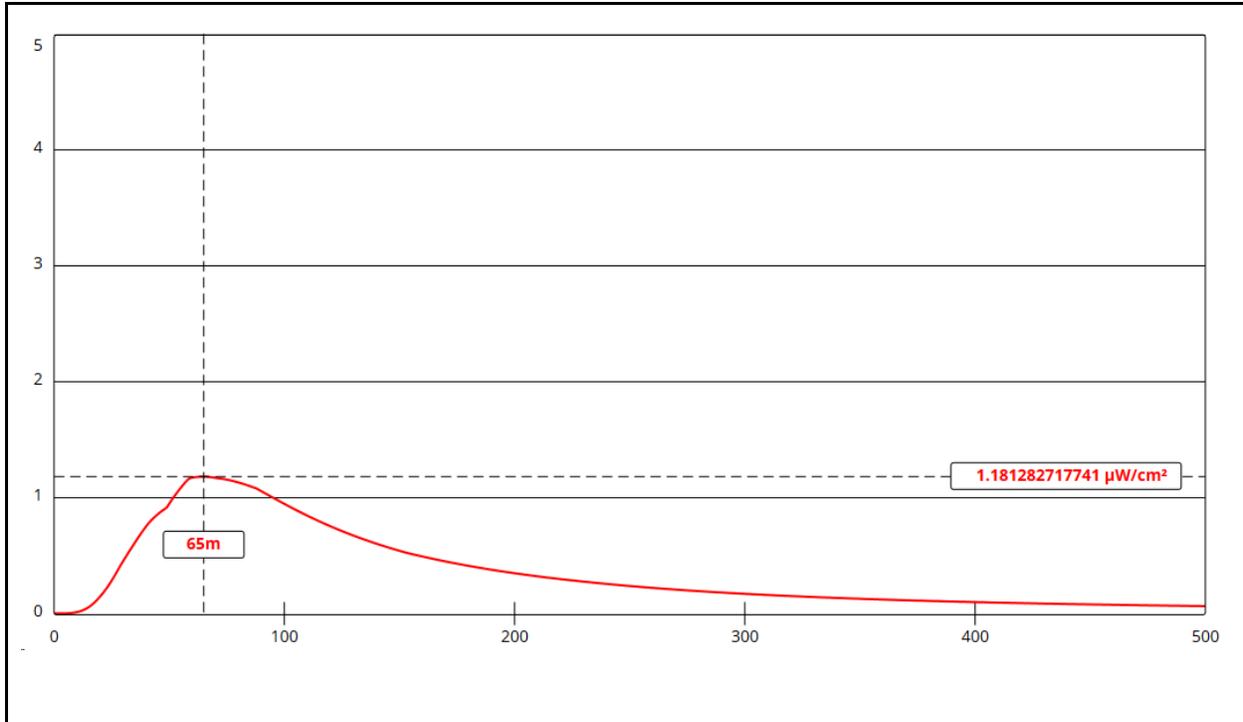
existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

Public access to the tower is restricted by a locked gate and the antenna tower is posted with warning signs. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

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.

#### **AM Station KMHS**

The translator antenna will be installed on the tower used by AM station KMHS 1420 kHz. KMHS operates with 1 kilowatt nondirectional daytime, 40 watts nondirectional nighttime. The tower is 98.8 electrical degrees tall, or 27.4% of the station wavelength. Using Tables 1-4 in OET Bulletin No. 65, the fencing distance requirement for this station is 2 meters from the tower base. The tower is fenced to at least this distance.



### Ground-Level RF Exposure

OET FMModel

#### Coos Bay 286D

Antenna Type: SWR FM1-2HW (Type 1)  
 No. of Elements: 2  
 Element Spacing: 0.5 wavelength

Distance: 500 meters  
 Horizontal ERP: 250 watts  
 Vertical ERP: 250 watts

Antenna Height: 43 meters AGL

Maximum Calculated Power Density is 1.2  $\mu\text{W}/\text{cm}^2$  at 65 meters from the antenna structure.



Transmitter Site Map  
 NAD27 Conus  
 USNG 10TDN-10TDP  
 CalTopo.com

