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**FM Translator K235DA
Channel 235D at Juneau, AK
To Rebroadcast KINY(AM) 800 kHz Juneau, AK
November 2018**

Allocation Study

The instant application proposes to modify the original construction permit for K235DA Juneau, to change the transmitter site to an existing tower on Heintzelman Ridge.

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. There are no cochannel or adjacent-channel stations close enough to warrant the inclusion of detailed allocation study maps to demonstrate 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.

The attached map of the 34 dBu F(50,10) contour demonstrates compliance with the US-Canada FM Agreement in that this contour does not overlap any Canadian territory.
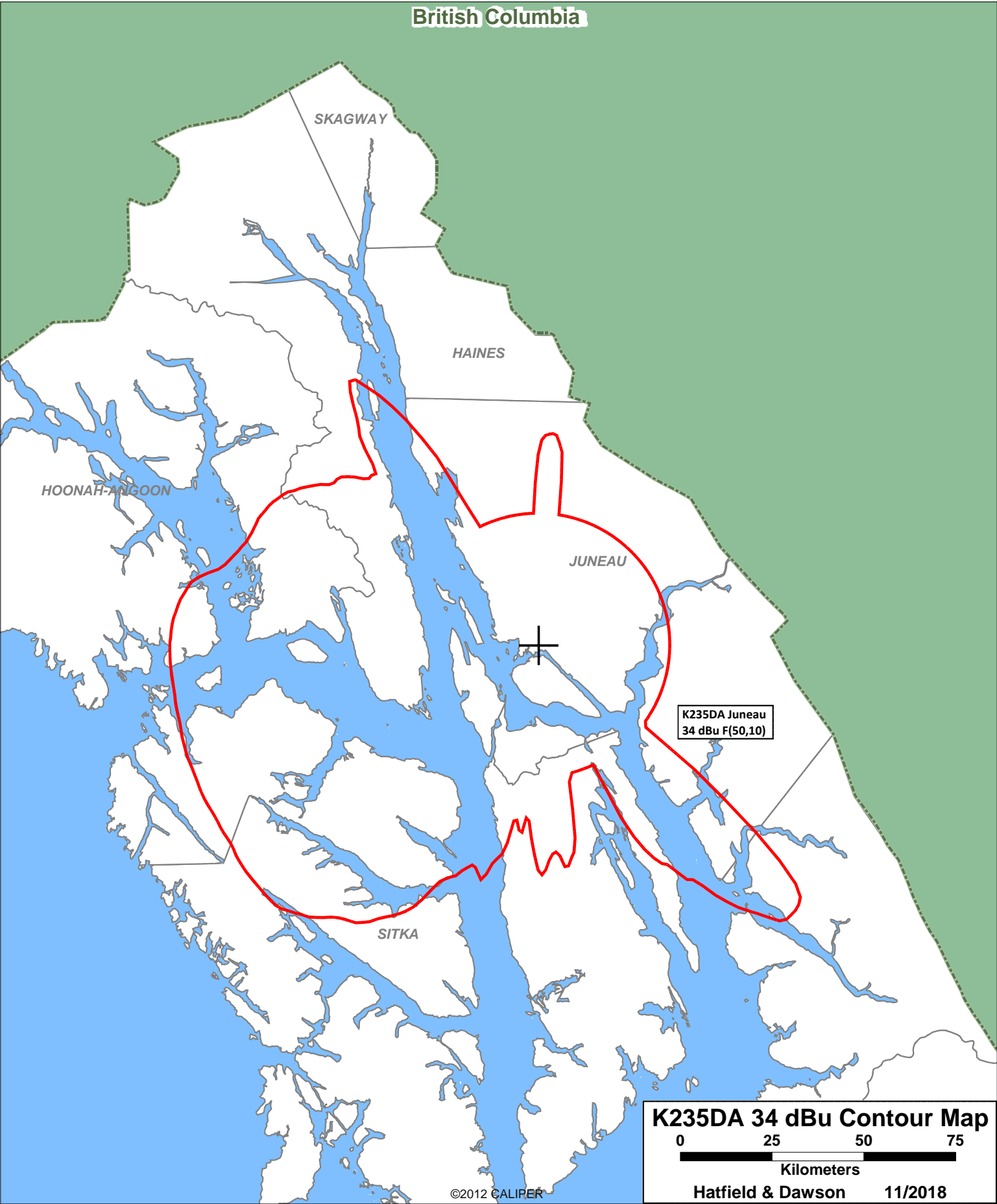
Other Translators

FM translator K278CO currently rebroadcasts the programming of KINY(AM) at Juneau. The area of overlap between the two translators' 60 dBu contours will exceed 50% of the proposed K235DA

60 dBu contour area, and therefore the FCC would consider these to serve "substantially the same area". However, K278CO has recently been approved to relocate from Juneau to Hoonah (see construction permit BPFT-20181003AJN). K235DA will not commence operation with the facilities proposed herein until such time as K278CO completes its relocation to Hoonah (or at the very least discontinues operation at Juneau in preparation for relocation to Hoonah). As is demonstrated on the contour map exhibit included in this application, there will be no overlap of the 60 dBu contours of K235DA Juneau and K278CO Hoonah, and therefore there will be no violation of the multiple translator rule.

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FMSTUDY.EXE     Copyright 2016, Hatfield & Dawson, LLC      Version 4.01
================================================================================
SEARCH PARAMETERS                              FM Database Date: 181102
      Channel: 235A    94.9 MHz                          Page   1
     Latitude:  58 22 11
    Longitude: 134 33  8
  Safety Zone:  50 km
    Job Title: K235DA JUNEAU


Call    City            Channel ERP(kW)    Latitude Bearing    Dist   Req
Status   St  FCC File No.  Freq. HAAT(m)   Longitude deg-True   (km)   (km)
================================================================================
K235DA  JUNEAU            235D   0.250     58-17-29  140.2     11.36      0
 CP     AK  BNPFT-80508ABY  94.9   0.0     134-25-41            0.00 TRANS

          ════  END OF FM SPACING STUDY FOR CHANNEL 235  ════
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British Columbia

SKAGWAY

HAINES

HOONAH-ANGOON

JUNEAU

K235DA Juneau
34 dBu F(50,10)

SITKA

©2012 CALIPER

K235DA 34 dBu Contour Map

0   25   50   75

Kilometers

Hatfield & Dawson   11/2018

Facilities Proposed

The proposed operation will be on Channel 235D (94.9 MHz) with an effective radiated power of 0.250 kilowatts. Operation is proposed with an existing 2-element, circularly-polarized antenna which is mounted on an existing tower on Heintzelman Ridge, having FCC Antenna Structure Registration Number 1220012.

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 antenna system have been made using the appropriate element pattern for the Nicom BKG77-2 (0.85 wavelength) antenna to be used. The highest calculated ground level power density from this proposal occurs at a distance of 10 meters from the base of the antenna support structure. At this point the power density is calculated to be 4.2 μW/cm², which is 0.4% of 1000 μW/cm^2 (the FCC standard for controlled environments) and 2.1% of 200 μW/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 of K235DA 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

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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.

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.
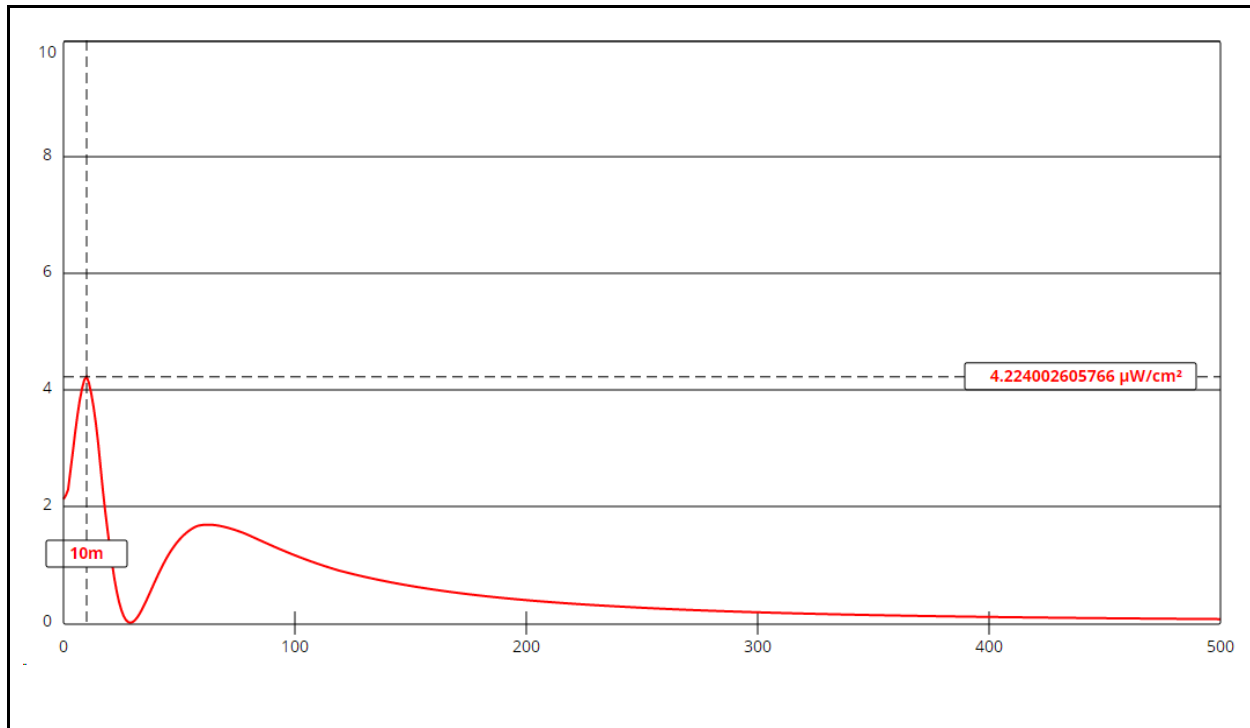
Ground-Level RF Exposure   **OET FMModel**

K235DA Juneau
Antenna Type: Nicom BKG77-2 (Type 2)
No. of Elements: 2
Element Spacing: 0.85 wavelength

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

Antenna Height: 23 meters AGL

Maximum Calculated Power Density is 4.2 µW/cm² at 10 meters from the antenna structure.

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