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**Engineering Statement
Minor Modification Application for K50CE
Channel 50z at Hood River, OR
August 2007**

This Engineering Statement has been prepared on behalf of Columbia Gorge TV, Inc., licensee of TV translator station K50CE at Hood River, Oregon. This material has been prepared in connection with a minor modification application.

I. Allocation Study

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any facilities with which contour overlap exists. This study was performed using the SunDTV program from V-Soft Communications and a 1 km grid spacing. The SunDTV program identically duplicates the FCC's OET-69 processing program.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations. Based on the foregoing allocation and interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

Summary Study

1990 Census data selected
TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 08-10-2007 Time: 17:50:00

Record Selected for Analysis

K50CE USERRECORD-04 HOOD RIVER OR US
Channel 50 ERP 1.2 kW HAAT 576. m RCAMSL 00802 m
Latitude 045-44-31 Longitude 0121-34-43
Status APP Zone 2 Border Offset Z
Dir Antenna Make usr Model USRPAT04 Beam tilt N Ref Azimuth 120.
Last update Cutoff date Docket
Comments
Applicant

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Not full service station

Facility meets maximum power limit

Azimuth (Deg)	ERP (kW)	HAAT (m)	74.0 dBu F(50,50) (km)
0.0	0.021	61.3	2.5
45.0	0.035	575.8	6.6
90.0	0.793	389.5	15.0
135.0	0.733	526.8	17.4
180.0	1.040	498.4	18.7
225.0	0.080	200.3	6.0
270.0	0.000	289.2	1.0
315.0	0.000	248.6	1.0

Contour Overlap Evaluation from LPTV Station to Full Service TV & DTV

Station inside contour of station
KPDX 49 VANCOUVER WA BLCT 19990909AAD

Contour Overlap Evaluation from LPTV to Full Service TV & DTV Complete

Contour Overlap Evaluation from LPTV Station to LPTV Stations

Station inside contour of station
K51EH 51 THE DALLES OR BDFCDTL 20060331BEZ

Contour overlap to station
K51EH 51 THE DALLES OR BLTTL 19931014JG
Offset Proposed Z Offset Protected - Required D/U ratio: -15.0

Contour Overlap Evaluation from LPTV to LPTV Stations Complete

Contour Overlap to Proposed Station

Contour Overlap Evaluation to Proposed Station Complete

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountain

Proposed facility is within the Canadian coordination distance
Distance to border = 309.0km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

		Proposed Station		
Channel	Call	City/State	ARN	
50	K50CE	HOOD RIVER OR	USERRECORD04	

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
49	KPDX	VANCOUVER WA	94.4	LIC	BLCT	-19990909AAD
51	K51EH	THE DALLES OR	36.0	CP	BDFCDTL	-20060331BEZ
51	K51EH	THE DALLES OR	36.0	LIC	BLTTL	-19931014JG

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Study of this proposal found the following interference problem(s):

NONE.

II. NIER Study

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.

$$S(\mu W/cm^2) = \frac{[(0.4) \text{ VERP} + \text{AERP}] \times 33.40981 \times F^2}{(\text{Distance})^2}$$

Where: VERP = total peak visual ERP in Watts
AERP = aural ERP in Watts
F = relative field factor in the downward direction
Distance = 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.

Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground (19 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.125 at these angles, based on the manufacturer's vertical plane pattern for the 2-level horizontally-polarized Kathrein broadband UHF panel antenna array proposed in this application. This relative field value yields a worst-case adjusted peak effective radiated power of 18.75 Watts at depression angles between 45 and 90 degrees below the horizontal. Assuming an average effective radiated power of 9.4 Watts, and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is

calculated to be $0.9 \mu\text{W}/\text{cm}^2$, which is 0.2% of $458 \mu\text{W}/\text{cm}^2$ (the FCC maximum at the Channel 50 visual carrier frequency 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 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 non-ionizing radiation at this site is required in this application.

Public access to the transmitter site is restricted. 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 radiation in excess of FCC guidelines.

August 14, 2007

Erik C. Swanson