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Engineering Statement
Digital Flash Cut Application for K41GG
Channel 41 at Rockaway Beach, OR
March 2010

This Engineering Statement has been prepared on behalf of Rural Oregon Wireless TV, Inc., licensee of TV translator station K41GG at Rockaway Beach, Oregon. This material has been prepared in connection with an application for digital flash cut.

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

Census data selected: 2000

Post DTV Transition Database Selected

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 03-26-2010 Time: 12:33:16

Record Selected for Analysis

K41GG USERRECORD-03 ROCKAWAY, ETC. OR US
Channel 41 ERP 0.975 kW HAAT 397. m RCAMSL 00493 m SIMPLE MASK
Latitude 045-44-38 Longitude 0123-56-23
Status APP Zone 2 Border
Dir Antenna Make usr Model USRPAT03 Beam tilt N Ref Azimuth 160.
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)	51.0 dBu F(50,90) (km)
0.0	0.004	302.9	12.6
45.0	0.002	266.3	10.7
90.0	0.016	309.7	19.4
135.0	0.593	341.2	39.6
180.0	0.721	484.3	45.4
225.0	0.039	493.0	28.2
270.0	0.002	493.0	14.9
315.0	0.001	486.8	12.6

Contour Overlap to Proposed Station

Contour Overlap Evaluation to Proposed Station Complete

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is within the Canadian coordination distance
Distance to border = 277.2km

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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Start of Interference Analysis

Proposed Station

Channel	Call	City/State	ARN
41	K41GG	ROCKAWAY, ETC. OR	USERRECORD03

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
40	K40IT-D	FLORENCE OR	198.9	LIC	BLDTT	-20100114AEF
40	K40AM	HOOD RIVER, ETC. OR	183.0	LIC	BLTT	-19940505JE
40	KOIN	PORTLAND OR	97.2	LIC	BLCDT	-20050613ABB
40	K40EG	TILLAMOOK OR	60.6	LIC	BLTT	-19960130JA
41	KBND-LP	BEND OR	276.4	CP	BDFCDTL	-20090430ABC
41	KBND-LP	BEND OR	276.4	LIC	BLTT	-20041025AEO
41	KBND-LP	BEND OR	276.4	CP MOD	BMPDTL	-20090521AEQ
41	KORY-CA	EUGENE OR	204.1	LIC	BLTTA	-20020722ABH
41	K41KL-D	GLENDALE, ETC. OR	352.4	CP MOD	BMPDTT	-20080528ACT
41	K41IX	MEDFORD OR	376.1	LIC	BLTT	-20060227ADC
41	KORK-LD	PORTLAND OR	84.4	APP	BSTA	-20090413AFO
41	KORK-LD	PORTLAND OR	96.0	LIC	BLDTL	-20090908ACU
41	K41IP	RAINIER OR	96.1	CP	BDFCDTL	-20090630AFJ
41	K41IP	RAINIER OR	96.1	LIC	BLTT	-20070209ABP
41	K41JQ	ROSEBURG OR	286.1	LIC	BLTTL	-20090831ABF
41	K41JQ	ROSEBURG OR	286.1	CP	BDFCDTL	-20091113AAT
41	K41CL	WASCO/HEPPNER OR	262.5	LIC	BLTTL	-19980903JG
41	K41KK-D	WILLIAMS OR	400.9	CP	BDCCDTT	-20061030AHB
41	K41CK	ELLENSBURG WA	297.0	LIC	BLTT	-19890227IN
41	K41KT-D	GRAYS RIVER WA	85.2	LIC	BLDTT	-20100218ADE
41	K41KT-D	GRAYS RIVER WA	85.2	CP	BDISTT	-20060323AIE
41	K21HL	PATEROS WA	393.1	APP	BDISDTL	-20090810ACS
41	K21HL	PATEROS WA	393.1	APP	BDISTTL	-20081022ABU
41	KCYU-LD	YAKIMA WA	278.3	LIC	BLDTL	-20081219AAC
42	K42IR	ASTORIA OR	60.4	LIC	BLTTL	-20090327AIA
42	K42CZ	LINCOLN CITY, ETC. OR	110.1	LIC	BLTT	-19930608IF
42	KPXG-LD	PORTLAND OR	96.0	LIC	BLDTL	-20090828ACK
42	K42CM	CENTRALIA, ETC. WA	112.8	LIC	BLTT	-19910320IO
42	K42CM	CENTRALIA/CHEHALIS WA	112.8	CP	BDFCDTT	-20060227ADV
42	K42IO	ODELL WA	192.2	CP	BNPTTL	-20000831CLQ
43	K43EJ	TILLAMOOK OR	60.6	LIC	BLTT	-19940610IK
44	K44HM	RAINIER OR	96.1	LIC	BLTT	-20070209ABN
44	K44AV	ROCKAWAY OR	0.0	LIC	BLTT	-20030610AAH
45	K45CV	CORVALLIS OR	157.7	LIC	BLTT	-19930604IG
48	K48GC	FLORENCE OR	199.1	LIC	BLTTA	-20020701AAI
49	KAMK-LP	EUGENE OR	204.1	CP	BDISTTL	-20051230AAL

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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.

$$S(mW/cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

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.

ROWT owns and is filing applications for digital flash cut for its six TV translators operating from this transmitter site. Calculations of the power density produced by these facilities 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
K20HT-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 μW/cm²	339 μW/cm²	16.7%
K36GU-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 μW/cm²	403 μW/cm²	14.0%
K41GG-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 μW/cm²	423 μW/cm²	13.4%
K44AV-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 μW/cm²	435 μW/cm²	13.0%
K47CD-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 μW/cm²	447 μW/cm²	12.7%
K51FK-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 μW/cm²	463 μW/cm²	12.2%

Nearby FM translator K291BI operates with an ERP of less than 100 Watts and is therefore excluded from this study.

(For TV translators, 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 digital flash cut facilities at this site (were their maxima to coincide) is 82% of the FCC standard for uncontrolled environments.

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.

March 26, 2010
Erik C. Swanson, P.E.