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**Engineering Statement  
Digital Flash Cut Application for K44AV  
Channel 44 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 K44AV 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: 13:00:57

Record Selected for Analysis

K44AV USERRECORD-04 ROCKAWAY OR US  
Channel 44 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 USRPAT04 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

Channel	Proposed Station	ARN
44	Call City/State K44AV ROCKAWAY OR	USERRECORD04

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
36	K36GU	ROCKAWAY & VICINITY OR	0.0	LIC	BLTT	-20030610AAE
41	K41GG	ROCKAWAY, ETC. OR	0.0	LIC	BLTT	-20010420AAU
43	NEW	ASTORIA OR	60.4	APP	BNPDTL	-20091112AFY
43	K43JY-D	FLORENCE OR	198.9	LIC	BLDTT	-20100114AEG
43	KATU	PORTLAND OR	97.2	LIC	BLCDDT	-20050407KXN
43	K43EJ	TILLAMOOK OR	60.6	LIC	BLTT	-19940610IK
44	K44FH	COOS BAY OR	262.6	CP	BDFCDTL	-20091029AAB
44	K44FH	COOS BAY OR	262.6	LIC	BLTTL	-20090302AEL
44	K44JP-D	COTTAGE GROVE OR	229.7	LIC	BLDTT	-20091029ABP
44	K44JB-D	GRANTS PASS OR	369.5	LIC	BLDTT	-20080206AAM
44	KDOV-LP	MEDFORD OR	393.9	LIC	BLTTL	-20080812ABO
44	KOXO-LD	NEWBERG OR	96.0	CP	BDCCDTL	-20061025ADM
44	K44AH	PRINEVILLE, ETC. OR	275.6	LIC	BLTT	-19970724JE
44	K44AH	PRINEVILLE, ETC. OR	275.6	CP	BDFCDTT	-20090630ACJ
44	K44HM	RAINIER OR	96.1	LIC	BLTT	-20070209ABN
44	K44CK	CHELAN WA	372.2	LIC	BLTT	-19940609JD
44	K39DM	ELLENSBURG WA	297.0	APP	BDISDTL	-20090824AKU
44	NEW	ELLENSBURG WA	297.0	APP	BSFDTL	-20060630CDC
44	KVEW	KENNEWICK WA	373.8	LIC	BLCDDT	-20090326ACW
44	K44EN	METHOW WA	393.8	LIC	BLTT	-19960506KM
44	KPST	SEATTLE WA	246.9	LIC	BLCDDT	-20080128AAK
44	KPST	SEATTLE WA	246.9	CP	BPCDDT	-20080609AAG
45	K45CV	CORVALLIS OR	157.7	LIC	BLTT	-19930604IG
45	KNMT	PORTLAND OR	97.1	LIC	BLCDDT	-20060619AAM
45	NEW	TOKELAND WA	110.7	APP	BNPDTL	-20100222AAY
47	KUNP-LP	PORTLAND OR	96.2	LIC	BLTTL	-20060809ABC
47	K47CD	ROCKAWAY OR	0.0	LIC	BLTT	-20030610AAF
47	KCST-LP	HOQUIAM WA	142.1	LIC	BLTTL	-20090330AIY
48	K48GC	FLORENCE OR	199.1	LIC	BLTTA	-20020701AAI
51	KMOR-LP	EUGENE OR	204.1	LIC	BLTTL	-19930204IC
51	K51JB-D	FLORENCE OR	198.9	CP	BDISTT	-20051128ALP
51	K51FK	NEHALEM, ROCKAWAY OR	0.4	LIC	BLTTL	-19990528JF
51	KOXO-CA	NEWBERG OR	96.0	LIC	BLTTA	-20070831ADA
51	KHPN-LP	WARRENTON OR	60.4	LIC	BLTTL	-20090324ADI
51	KHPN-LP	WARRENTON OR	40.9	APP	BSTA	-20090427ADA
51	KHPN-LP	WARRENTON OR	40.9	CP	BPTTL	-20090427ACZ
52	KXPDL-LP	EOLA OR	127.6	LIC	BLTTL	-20080122ACK
52	KXPDL-LP	SALEM OR	127.6	APP	BSTA	-20061116ADO
52	K52ET	TILLAMOOK OR	60.6	LIC	BLTT	-19970124JG

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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.

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

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 $\mu\text{W}/\text{cm}^2$	339 $\mu\text{W}/\text{cm}^2$	16.7%
K36GU-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	403 $\mu\text{W}/\text{cm}^2$	14.0%
K41GG-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	423 $\mu\text{W}/\text{cm}^2$	13.4%
K44AV-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	435 $\mu\text{W}/\text{cm}^2$	13.0%
K47CD-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	447 $\mu\text{W}/\text{cm}^2$	12.7%
K51FK-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	463 $\mu\text{W}/\text{cm}^2$	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.