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**Engineering Statement  
Digital Flash Cut Application for K47CD  
Channel 47 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 K47CD 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: 13:31:29

Record Selected for Analysis

K47CD USERRECORD-05 ROCKAWAY OR US  
Channel 47 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 USRPAT05 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

Station  
KUNP-LP 47 PORTLAND OR BLTTL20060809ABC causes

Contour overlap to Digital LPTV station  
K47CD 47 ROCKAWAY OR USERRECORD05  
Required D/U ratio: 2.0

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	Call	City/State	ARN
47	K47CD	ROCKAWAY OR	USERRECORD05

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
44	K44AV	ROCKAWAY OR	0.0	LIC	BLTT	-20030610AAH
46	NEW	EUGENE OR	204.2	APP	BNPDTL	-20090825AXF
46	KGWZ-LD	MADRAS & CULVER OR	96.0	CP	BPDTT	-20090924ABB
46	KGWZ-LD	MADRAS & CULVER OR	179.3	LIC	BLDTT	-20090921ACJ
47	NEW	BEND OR	283.7	APP	BNPTTL	-20000830AIW
47	NEW	BEND OR	276.3	APP	BNPTTL	-20000807AEH
47	NEW	BEND OR	276.5	APP	BNPTTL	-20000810AAY
47	NEW	BEND OR	283.7	APP	BNPTTL	-20000830ASA
47	K47AV	COTTAGE GROVE OR	229.8	LIC	BLTT	-19860113IE
47	K47AV	COTTAGE GROVE OR	229.7	CP	BDFCDTT	-20081003AEI
47	K47GI	GRANTS PASS OR	377.4	LIC	BLTTA	-20090318AEJ
47	K47GI	GRANTS PASS OR	377.4	CP	BDFCDTA	-20091102AAJ
47	K47GI	GRANTS PASS OR	377.4	APP	BDFCDTA	-20060728ABI
47	NEW	KLAMATH FALLS OR	387.8	APP	BNPTTL	-20000802ADV
47	K47LD-D	PHOENIX, TALENT OR	394.6	LIC	BLDTT	-20080528ACV
47	K47KH	PORT ORFORD OR	336.4	CP	BDFCDTT	-20090813AAF
47	K47KH	PORT ORFORD OR	336.7	LIC	BLTT	-20090618ABL
47	KUNP-LP	PORTLAND OR	96.2	LIC	BLTTL	-20060809ABC
47	K52AK	PRINEVILLE OR	275.6	CP	BDISTT	-20061212ABI
47	K47HT	ROSEBURG OR	286.0	LIC	BLTTL	-20030129ALF
47	KCST-LP	HOQUIAM WA	142.1	LIC	BLTTL	-20090330AIY
47	NEW	OTHELLO WA	383.9	APP	BNPDTL	-20090825AMA
47	K47LG-D	POINT PULLEY, ETC. WA	219.6	LIC	BLDTT	-20090529AMN
47	K54DU	RICHLAND WA	360.8	APP	BDISDTL	-20081209AAF
47	K57HB	SEATTLE WA	242.3	APP	BPTTL	-20020807AAR
47	KWCC-LD	WENATCHEE WA	336.5	LIC	BLDTL	-20090825BSD
47	NEW	YAKIMA WA	280.6	APP	BNPDTL	-20090825AMK
47	NEW	YAKIMA WA	274.4	APP	BNPDTL	-20090825BIM
47	NEW	YAKIMA WA	277.6	APP	BNPDTL	-20090825AMW
48	K48GC	FLORENCE OR	199.1	LIC	BLTTA	-20020701AAI
48	K48GC	FLORENCE OR	199.1	CP	BDFCDTL	-20090818AAC
48	K44HM	RAINIER OR	96.1	APP	BDISDTT	-20091013AFF
49	KAMK-LP	EUGENE OR	204.1	CP	BDISTTL	-20051230AAL
50	K50CE	HOOD RIVER OR	183.1	CP	BPTT	-20070822AAV
50	K50CE	HOOD RIVER OR	183.0	LIC	BLTT	-19880603IK
50	K50IK	LINCOLN CITY OR	110.1	LIC	BLTT	-20040402ACM
50	K50GG	SALEM OR	104.9	LIC	BLTTL	-20020916ABF
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	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

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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.