HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
9500 GREENWOOD AVE. N.
SEATTLE, WASHINGTON 98103

JAMES B. HATFIELD, PE
BENJAMIN F. DAWSON III, PE
THOMAS M. ECKELS, PE
STEPHEN S. LOCKWOOD, PE
DAVID J. PINION, PE

PAUL W. LEONARD, PE
ERIK C. SWANSON, EIT
THOMAS S. GORTON, PE

TELEPHONE
(206) 783-9151
FACSIMILE
(206) 789-9834
E-MAIL
hatdaw@hatdaw.com

MAURY L. HATFIELD, PE
CONSULTANT
BOX 1326
ALICE SPRINGS, NT 5950
AUSTRALIA

Engineering Statement
Digital Companion Channel Application for K40EE
For Operation on Channel 38
October 2006

This Engineering Statement has been prepared on behalf of Spokane Television, Inc. ("Spokane TV"), licensee of TV translator station K40EE at Pullman, Washington. This material has been prepared in connection with a digital companion channel application for operation on Channel 38.

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 unacceptable interference to other stations.

Summary Study

1990 Census data selected
TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 10-19-2006 Time: 12:10:59

Record Selected for Analysis

PULL38 USERRECORD-02 PULLMAN WA US
Channel 38 ERP 6. kW HAAT 345. m RCAMSL 01124 m STRINGENT MASK
Latitude 046-51-43 Longitude 0117-10-26
Status APP Zone 2 Border
Dir Antenna Make usr Model USRPAT02 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	2.857	323.8	47.7
45.0	2.496	325.7	47.1
90.0	3.745	265.3	46.2
135.0	5.645	315.6	51.0
180.0	5.881	347.0	52.9
225.0	3.985	370.3	51.8
270.0	2.535	419.3	51.0
315.0	2.898	395.1	51.0

Contour Overlap to Proposed Station

Station
KMNZ-LP 38 COEUR D'ALENE ID BLTTL20041115AFH causes

Contour overlap to Digital LPTV station
PULL38 38 PULLMAN WA USERRECORD02
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 quite zone

Proposed facility OK toward Table Mountian

Proposed facility is within the Canadian coordination distance
Distance to border = 237.6km

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 Call	City/State	ARN
38	PULL38	PULLMAN WA	USERRECORD02

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
23	K23HT	ST MARIES ID	80.2	LIC	BLTT	-20060718AAH
24	KQUP	PULLMAN WA	0.1	LIC	BLCT	-20040520AJL
34	KGPX	SPOKANE WA	82.7	LIC	BLCT	-19990809AAA
35	K35BW	LEWISTON ID	46.7	LIC	BLTT	-19890203IC
35	KUID-TV	MOSCOW ID	32.0	LIC	BPRM	-20020805ABD
35	KUID-TV	MOSCOW ID	25.3	APP	BPET	-20041019ABU
37	NEW	LEWISTON ID	46.7	APP	BSFDTT	-20060630COI
38	KMNZ-LP	COEUR D'ALENE ID	102.3	LIC	BLTTL	-20041115AFH
38	NEW	KALISPELL MT	246.9	APP	BNPTTL	-20000829AJS
38	KCFW-TV	KALLISPELL MT	246.9	CP	BPCDT	-19991026ABY
38	K63CC	MADRAS & CULVER OR	399.5	CP	BPTT	-20040217AAD
38	K38AH	PENDLETON, ETC. OR	245.7	LIC	BLTT	-19950612II
38	NEW	ELLENSBURG WA	248.3	APP	BSFDTT	-20060630CBF
38	KTNW	RICHLAND WA	171.7	LIC	BLEDT	-20030429AAW
38	KOMO-TV	SEATTLE WA	399.9	LIC	BLCDT	-19991221AAQ
38	K69BF	STEMILT, ETC. WA	248.9	CP	BPTT	-20041207AAT
39	K39CT	COTTONWOOD, ETC. ID	103.5	LIC	BLTT	-19911104IR
39	K39FD	ELGIN OR	177.8	LIC	BLTT	-20011212AAC
39	K39DL	MOSES LAKE WA	181.4	LIC	BLTTL	-19980107JB
39	KHBA-LP	SPOKANE WA	80.3	CP	BPTTL	-20050427ABS
40	K40EE	PULLMAN WA	0.0	LIC	BLTT	-19951130JT
41	K41FJ	COEUR D'ALENE, ETC. ID	102.3	LIC	BLTT	-20021023AAB
41	K41GW	JULIAETTA ID	48.4	LIC	BLTT	-20020122ABK
45	K45FZ	LEWISTON ID	46.7	LIC	BLTT	-20030605AEE
45	K36EW	COLLEGE PLACE WA	129.9	LIC	BLTTL	-19900813II
46	K59BA	GRANGEVILLE ID	103.5	CP	BPTT	-20030620AAP
46	K46HV	PULLMAN WA	20.4	CP	BNPTTL	-20000829AQR
46	K46FL	WALLA WALLA WA	141.6	LIC	BLTT	-20020211AAA

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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.

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 level using the manufacturer's vertical plane pattern for the Scala SL-8 antenna proposed in this application. The highest calculated power density from the proposed antenna alone occurs at 19 meters from the base of the antenna support structure. At this point the power density is calculated to be 11.5 μW/cm², which is 3.6% of 411 μW/cm² (the FCC standard for uncontrolled environments at the Channel 38 frequency).

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.

October 20, 2006

Erik C. Swanson

Pullman DCC Ch38 - Scala SL-8

ERP	6000	Watts H (avg)	
	0	Watts V (avg)	
AGL	37	less 2m is	35 meters
Maximum is	11.45	uW/cm² at	19 meters