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Engineering Statement
Digital Companion Channel Application for K24EX
For Operation on Channel 26
October 2006

This Engineering Statement has been prepared on behalf of Spokane Television, Inc. ("Spokane TV"), licensee of TV translator station K24EX at Wenatchee, Washington. This material has been prepared in connection with a digital companion channel application for operation on Channel 26.

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: 10-17-2006 Time: 07:26:54

Record Selected for Analysis

NEW BSFDTT -20060630BQE WENATCHEE WA US
Channel 26 ERP 0.35 kW HAAT 00001 m RCAMSL 00624 m STRINGENT MASK
Latitude 047-22-52 Longitude 0120-17-16
Status APP Zone Border
Dir Antenna Make CDB Model 00000000020741 Beam tilt N Ref Azimuth 0.0
Last update 00000000 Cutoff date 00000000 Docket
Comments
Applicant SPOKANE TELEVISION, INC.

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	0.350	290.8	34.6
45.0	0.323	33.0	13.0
90.0	0.179	303.1	31.4
135.0	0.000	33.0	2.0
180.0	0.000	33.0	2.0
225.0	0.000	33.0	2.0
270.0	0.176	33.0	11.3
315.0	0.309	204.0	29.9

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 quite zone

Proposed facility OK toward Table Mountian

Proposed facility is within the Canadian coordination distance
Distance to border = 179.9km

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	
26	NEW	WENATCHEE WA	BSFDTT	20060630BQE

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
18	K18AD	EAST WENATCHEE, ETC. WA	14.8	LIC	BLTT	-19841203ID
19	K63BZ	ELLENSBURG WA	56.1	APP	BDISTT	-20061002AEP
19	K19AU	OMAK/OKANOGAN WA	141.1	LIC	BLTT	-19870923IB
23	KNDO	YAKIMA WA	95.7	LIC	BLCT	-1836
24	K24AI	QUINCY WA	37.3	LIC	BLTT	-19840716IA
24	K24EX	WENATCHEE WA	0.0	LIC	BLTTL	-20020304AGX
25	K59EK	THE DALLES OR	196.0	CP	BDISTT	-20060221ADG
25	K25FP	ELLENSBURG WA	56.1	LIC	BLTTL	-19971103IP
25	KNDU	RICHLAND WA	167.2	LIC	BLCT	-19800708KE
25	KMYQ	SEATTLE WA	153.9	APP	BPCDT	-19991022ABF
26	KCDT	COEUR D'ALENE ID	269.7	LIC	BLET	-20030807AAU
26	K26CK	CRAIGMONT, ETC. ID	325.7	LIC	BLTT	-19890921IH
26	K26DB	ASTORIA OR	300.2	LIC	BLTT	-19911016IG
26	NEW	BEND OR	376.0	APP	BSFDTL	-20060630BRL
26	K26AY	CORVALLIS, ETC. OR	380.5	LIC	BLTT	-20040909AAB
26	K26FV	ELGIN OR	302.4	LIC	BLTT	-20011212AAD
26	K26FQ	JOHN DAY OR	343.3	LIC	BLTT	-20020318AAV
26	NEW	MADRAS/CULVER OR	331.1	APP	BSFDTT	-20060630CDL
26	K26GJ	PORTLAND OR	275.5	LIC	BLTTL	-20040419AAA
26	K26HS	TILLAMOOK OR	350.3	CP	BNPTTL	-20000829AQV
26	K26FG	WASCO/HEPPNER OR	179.0	LIC	BLTTL	-19980903JF
26	K54AO	BREMERTON WA	185.2	CP	BDISTTL	-20051221AJC
26	K54AO	BREMERTON WA	185.2	CP	BDFCDTT	-20060919AAC
26	K26GV	OMAK WA	139.4	LIC	BLTTL	-20050419AAX
26	KNDU	RICHLAND WA	167.2	CP	BPCDT	-19991027ACK
27	K54DU	RICHLAND WA	147.0	CP	BPTTL	-20050330AOZ
27	KBTC-TV	TACOMA WA	167.9	LIC	BLEDT	-20030425ABJ
27	K28FT	WALLA WALLA WA	206.2	LIC	BLTTL	-19900813IH
27	KCWK-LP	YAKIMA WA	95.8	LIC	BLTTL	-20040122ABW
29	KIMA-TV	YAKIMA WA	95.8	LIC	BLCT	-2586
33	KWPX	BELLEVUE WA	127.0	CP	BPCT	-20050428AAJ
33	KWPX	BELLEVUE WA	127.1	LIC	BLCT	-19990312KE
33	K33EH	QUINCY WA	37.3	LIC	BLTT	-19951215JA
34	K34EM	WENATCHEE WA	10.4	LIC	BLTT	-19971030JA

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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 4DR-4-2HW antenna proposed in this application. The highest calculated power density from the proposed antenna alone occurs at 8 meters from the base of the antenna support structure. At this point the power density is calculated to be 5.9 μW/cm², which is 1.6% of 363 μW/cm² (the FCC standard for uncontrolled environments at the Channel 26 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 23, 2006

Erik C. Swanson

Wenatchee DCC Ch26 - Scala 4DR-4-2HW

ERP	350	Watts H (avg)	
	0	Watts V (avg)	
AGL	9	less 2m is	7 meters
Maximum is	5.91	uW/cm² at	8 meters