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**Engineering Statement
Displacement of KJYY-LD
Channel 29 at Portland, OR
February 2021**

I. Background

This Engineering Statement has been prepared on behalf of Horizon Media, LLC ("Horizon"), licensee of digital LPTV station KJYY-LD at Portland, Oregon. The translator currently operates on Channel 26.

On December 2, 2020, a Report & Order (DA 20-1435) was released in MB Docket No. 20-334, approving the substitution of Channel 26 for Channel 8 at Portland, for use by full-power station KGW(TV). KGW has now filed its application for construction permit on Channel 26 (FCC File No. 0000132731). The two stations would not be able to operate on the same channel in Portland without experiencing extensive interference. KJYY-LD is classified as a secondary station, and therefore must seek modification to eliminate this interference. Accordingly, Horizon is filing this displacement application on Channel 29

II. Interference 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 authorized or pending proposed facilities. This study was performed using the Commission's TVStudy software.

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This study utilizes a grid spacing of 0.5 km, and a terrain extraction increment of 0.2 km, in order to demonstrate interference protection to KVAL-TV on Channel 28 at Eugene. These same parameters should be used for review of this proposal.

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 interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

Study created: 2021.02.11 13:25:49

Study build station data: LMS TV 2021-02-11

Proposal: KJYY-LD D29 LD APP PORTLAND, OR
 File number: KJYY-CH29
 Facility ID: 49733
 Station data: User record
 Record ID: 984
 Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KODT-LP	N14-	TX	LIC	SALT CREEK, OR	BLTTL20050309ACO	81.9 km
No	NEW	D28	LD	APP	: EUGENE, OR	BNPDTL20090825BHT	160.9
No	K28FP-D	D28	LD	LIC	ASTORIA, OR	BLANK0000073365	139.3
No	K28MH-D	D28	LD	CP	BEND, OR	BLANK0000068954	186.8
Yes	KVAL-TV	D28	DT	APP	EUGENE, OR	BLANK0000127644	167.5
No	NEW	D28	LD	APP	EUGENE, OR	BNPDTL20090825BFA	167.4
No	K28CQ-D	D28	LD	LIC	HOOD RIVER, OR	BLDTT20120514ACX	82.0
No	K40MP-D	D28	LD	LIC	Madras, OR	BLANK0000063058	146.7
Yes	KOPB-TV	D28	LD	LIC	PORTLAND, OR	BLANK0000068708	12.0
Yes	K28IH-D	D28	LD	LIC	RAINIER, OR	BLDTT20091103AAJ	82.1
No	K28MJ-D	D28	LD	LIC	TILLAMOOK, OR	BLDTT20111209DLD	97.7
No	K29KU-D	D29	LD	LIC	BEND, OR	BLANK0000121241	153.0
No	K29KR-D	D29	LD	LIC	CAMAS VALLEY, OR	BLDTT20121025ABP	289.6
No	K29NI-D	D29	LD	LIC	CAVE JUNCTION, OR	BLANK0000068674	366.3
No	K29MU-D	D29	LD	LIC	COOS BAY, OR	BLANK0000063913	269.4
Yes	KEPB-TV	D29	DT	LIC	EUGENE, OR	BLDTT20050127AHY	167.5
No	K29JN-D	D29	LD	LIC	GOLD BEACH, OR	BLDTT20110513AAO	366.8
No	KDKF	D29	DT	LIC	KLAMATH FALLS, OR	BLCDT20080215APO	380.4
No	K29EL-D	D29	LD	LIC	LA GRANDE, OR	BLDTT20120625ABJ	376.4
No	K29EG-D	D29	LD	LIC	MILTON, ETC, OR	BLDTT20101122AJO	336.0
Yes	K29AZ-D	D29	LD	LIC	NEWPORT, OR	BLDTT20111208ABT	140.9
No	K29LL-D	D29	LD	LIC	PHOENIX, TALENT, OR	BLANK0000064257	351.3
No	K51FK-D	D29	LD	LIC	Rockaway Beach, OR	BLANK0000063315	112.7
No	K29NO-D	D29	LD	LIC	THE DALLES, OR	BLANK0000068895	115.2
Yes	K29IA-D	D29	LD	LIC	CENTRALIA, ETC., WA	BLDTT20090618ABC	128.4
No	NEW	D29	LD	APP	ELLENBURG, WA	BNPDTL20090825AKK	241.6
No	NEW	D29	LD	APP	ELLENSBURG, WA	BNPDTL20090825AEN	232.3
No	K29ED-D	D29	LD	LIC	EVERETT, WA	BLDTL20110812ACJ	282.4
Yes	K29IB-D	D29	LD	LIC	GRAYS RIVER, ETC., WA	BLDTT20100511ACN	135.9
No	K29JB-D	D29	LD	LIC	MOSES LAKE, WA	BLDTL20131206AUE	311.5
No	KRLB-LD	D29	LD	CP	RICHLAND, ETC, WA	BLANK0000029420	264.7
No	KCYU-LD	D29	LD	LIC	YAKIMA, WA	BLANK0000072828	197.6
No	K30QL-D	D30	LD	CP	ASTORIA, OR	BLANK0000071978	150.2
No	KOAB-TV	D30	LD	LIC	BEND, OR	BLDTT20111104AIS	126.5
No	K30MO-D	D30	LD	CP	EUGENE, OR	BNPDTL20100728ADJ	160.5

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No	KOMO-TV	D30	DT	LIC	SEATTLE, WA	BLANK0000126112	242.5
Yes	KPDx	D30	DT	LIC	VANCOUVER, WA	BLANK0000107795	17.1
No	KUNW-CD	D30	DC	LIC	YAKIMA, WA	BLDTL20090923ACQ	198.0

Non-directional AM stations within 0.8 km:
 KDZR 1640 L ND2 D LAKE OSWEGO, OR BL19980422KA
 KDZR 1640 L ND2 N LAKE OSWEGO, OR BL19980422KA

Directional AM stations within 3.2 km:
 KKPZ 1330 L DA1 U PORTLAND, OR BL3374

Record parameters as studied:

Channel: D29
 Mask: Stringent
 Latitude: 45 27 16.40 N (NAD83)
 Longitude: 122 33 5.30 W
 Height AMSL: 351.0 m
 HAAT: 0.0 m
 Peak ERP: 15.0 kW
 Antenna: SUP-SBP UPC2X2 (ID 101910) 270.0 deg
 Elev Pattn: Generic

50.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	15.0 kW	297.4 m	56.2 km
45.0	3.27	280.1	47.1
90.0	0.002	157.5	8.0
135.0	0.002	251.8	9.8
180.0	0.002	251.3	9.7
225.0	3.27	267.4	46.5
270.0	15.0	260.8	54.1
315.0	12.2	306.4	55.6

Database HAAT does not agree with computed HAAT
 Database HAAT: 0 m Computed HAAT: 259 m

Distance to Canadian border: 316.9 km

Distance to Mexican border: 1495.1 km

Conditions at FCC monitoring station: Ferndale WA
 Bearing: 360.0 degrees Distance: 389.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 106.6 degrees Distance: 1524.8 km

Study cell size: 0.50 km
 Profile point spacing: 0.20 km

Maximum new IX to full-service and Class A: 0.50%
 Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal KJYY-CH29 ----

Proposal receives 17.09% interference from scenario 1
 No IX check failures found.

III. AM Stations

While there is one non-directional AM station located with 0.8 km of the proposed KJYY-LD facility, and one directional AM station located within 3.2 km, the resulting construction permit should not bear a condition requiring any proof-of-performance analysis related to those stations. The proposed KJYY-LD facility on Channel 29 will not involve any construction on the tower, as it will use the existing Channel 26 broadband antenna and transmission line.

IV. RF Exposure 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.

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

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.

Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground (18 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.125 at these angles, which is a typical value for horizontally-polarized 2-level panel antennas such as the Superior Broadcast Products UPC2X2 antenna proposed in this application. This relative field value yields a worst-case adjusted average effective radiated power of 234.4 watts at depression angles between 45 and 90 degrees below the horizontal. Assuming this power and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density from the proposed facility is calculated to be 24.2 $\mu W/cm^2$, which is 6.5% of 373.3 $\mu W/cm^2$ (the FCC maximum for uncontrolled environments at the Channel 29 frequency).

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 exposure in excess of FCC guidelines.

February 12, 2021

Erik C. Swanson, P.E.