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**Engineering Statement
Minor Modification of K16JZ-D
Channel 22 at McDermitt, NV
November 2023**

This Engineering Statement has been prepared on behalf of Quinn River TV Maintenance District ("QRTV"), licensee of digital TV translator station K16JZ-D at McDermitt, NV. This material has been prepared in connection with an application for displacement to UHF Channel 22.

I. Background

On November 7, 2023, Gray Television Licensee, LLC ("Gray"), permittee of new digital TV station KWNV at Winnemucca, Nevada (Facility ID No. 776269) received approval via a Report and Order in MM Docket No. 23-286 to modify its Ch 7 authorization for KWNV to Ch 16. The planned KWNV Ch16 facility at Winnemucca will be located just 69 kilometers from QRTV's translator K16JZ-D at McDermitt, and the K16JZ-D contour will be overlapped by the KWNV Noise Limited Contour. Therefore, QRTV requests displacement of K16JZ-D to Ch 22.

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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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: 2023.11.07 16:42:06

Study build station data: LMS TV 2023-11-03

Proposal: K16JZ-D D22 LD APP MCDERMITT, NV
 File number: K16JZ-D-CH22
 Facility ID: 54293
 Station data: User record
 Record ID: 1524
 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	KAID	D21	DD	LIC	BOISE, ID	BLEDT20120719ABH	271.5 km
No	K21OS-D	D21	LD	LIC	BEOVAWE, NV	BLANK0000218423	142.9
No	K21FO-D	D21	LD	LIC	WINNEMUCCA, NV	BLANK0000145192	69.1
No	KRID-LD	D22	LD	LIC	BOISE, ID	BLANK0000001109	271.4
No	KIPT	D22	DD	LIC	TWIN FALLS, ID	BLEDT20120808ABN	299.8
No	K22GM-D	D22	LD	LIC	BATTLE MOUNTAIN, NV	BLDTT20120514ADF	143.1
No	K22KB-D	D22	LD	LIC	ELY, ETC., NV	BLDTT20140717ABY	356.7
No	K22NG-D	D22	LD	LIC	EUREKA, NV	BLANK0000218579	283.8
No	K22NU-D	D22	LD	LIC	GOLCONDA, NV	BLANK0000150392	57.7
No	K22FH-D	D22	LD	LIC	HAWTHORNE, NV	BLDTT20100630BZY	363.5
No	KNPB	D22	LD	LIC	RENO, NV	BLANK0000063431	317.1
No	K22JC-D	D22	LD	LIC	SILVER SPRINGS, NV	BLDTT20121204ACN	272.2
No	K22GW-D	D22	LD	LIC	WELLS, NV	BLANK0000220450	238.3
No	K22LY-D	D22	LD	LIC	BAKER VALLEY, OR	BLANK0000067879	329.8
No	K23FR-D	D23	LD	LIC	WINNEMUCCA, NV	BLANK0000145193	69.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D22
 Mask: Stringent
 Latitude: 41 37 56.60 N (NAD83)
 Longitude: 117 44 30.40 W
 Height AMSL: 1706.6 m
 HAAT: 0.0 m
 Peak ERP: 0.150 kW
 Antenna: KAT-KBBU1X2(75/25) (ID 1005700) 0.0 deg
 Elev Pattn: Generic

49.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.149 kW	302.8 m	32.2 km
45.0	0.037	-154.2	8.0
90.0	0.002	-364.8	3.8
135.0	0.004	-372.9	4.7
180.0	0.048	38.1	9.5
225.0	0.031	402.4	26.6
270.0	0.004	418.7	17.1
315.0	0.042	395.6	28.0

Database HAAT does not agree with computed HAAT
 Database HAAT: 0 m Computed HAAT: 83 m

Distance to Canadian border: 819.0 km

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Distance to Mexican border: 1005.4 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 219.6 degrees Distance: 553.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 94.8 degrees Distance: 1061.1 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

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

No IX check failures found.

III. Antenna Structure Registration Not Required

The proposed antenna will be installed on a 60 foot tower at the Eagle Creek communications site. The tower will be less than 200 feet tall and there are no airports within 5 miles of the site coordinates. Therefore this structure is exempted from FCC Antenna Structure Registration.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	41-37-56.6 north
Longitude	117-44-30.4 west
Measurements (Meters)	
Overall Structure Height (AGL)	18.3
Support Structure Height (AGL)	18.3
Site Elevation (AMSL)	1694.0
Structure Type	
LTOWER - Lattice Tower	

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.

$$S(\mu W / cm^2) = \frac{33.4 \times AdjERP(Watts)}{D^2}$$

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 (10.6 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 0.200 at these angles, based on the manufacturer's vertical plane pattern for the horizontally-polarized Kathrein broadband panel antenna proposed in this application. This relative field value yields a worst-case adjusted average effective radiated power of 6 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 1.8 $\mu W/cm^2$, which is 0.5% of 345.3 $\mu W/cm^2$ (the FCC maximum for uncontrolled environments at the Channel 22 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 500 meters from the base of the antenna support structure. Section 1.1307 of the Commission's Rules exempts applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's 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 RF exposure at this site is required in this application.

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.

Erik C. Swanson, P.E.

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Section 73.622(j),)	MB Docket No. 23-286
Table of Allotments, Television Broadcast)	RM-11960
Stations (Winnemucca, Nevada))	

**REPORT AND ORDER
(Proceeding Terminated)**

Adopted: November 7, 2023

Released: November 7, 2023

By the Chief, Video Division, Media Bureau:

1. The Video Division, Media Bureau (Bureau), has before it a Notice of Proposed Rulemaking¹ issued in response to a Petition for Rulemaking filed by Gray Television Licensee, LLC (Petitioner or Gray),² the licensee of unbuilt television station KWNV(DT) (KWNV or Station), channel 7, Winnemucca, Nevada (Winnemucca). The Petitioner has requested the substitution of UHF channel 16 for VHF channel 7 in the Table of TV Allotments.³ The Petitioner filed comments in support of the petition, as required by the Commission's rules (rules),⁴ reaffirming its commitment to apply for channel 16.⁵ No other comments were received.

2. We conclude that the public interest would be served by substituting channel 16 for channel 7 at Winnemucca. In support of its channel substitution request, Gray states that building out its new station on a UHF channel will avoid well-documented issues with indoor digital VHF reception.⁶ Gray observes that the Commission has recognized the deleterious effects manmade noise has on the reception of VHF channel signals, and the large variability in the performance of indoor antennas receiving UHF and VHF signals, with the substantial majority poorly receiving high-VHF channel signals compared to UHF channel signals.⁷

3. We also find that the proposal complies with all relevant technical requirements for amendment of the Table of TV Allotments, including the interference protection requirements of section 73.616 of the rules,⁸ and further demonstrates that the proposed channel 16 facility will provide full

¹ *Amendment of Section 73.622(j), Table of Allotments, Television Stations (Winnemucca, Nevada)*, MB Docket No. 23-286, Notice of Proposed Rulemaking, DA 23-749 (rel. Aug. 22, 2023) (*NPRM*).

² Petition of Gray Television Licensee, LLC for Rulemaking (filed June 15, 2023 and amended on Aug. 8, 2023 to include a portion of the filing which was inadvertently omitted) on file at LMS File No. 0000195678 (Petition).

³ 47 CFR § 73.622(j).

⁴ 47 CFR §§ 1.415, 1.419; *see also Buffalo, Iola, Normangee, and Madisonville, Texas*, MB Docket No. 07-279, Report and Order, 24 FCC Rcd 8192, 8194, para. 9 (MB 2009).

⁵ *NPRM* at para. 2.

⁶ *Id.* Gray was granted a construction permit for this station on September 13, 2022 (LMS File No. 0000195678).

⁷ *NPRM* at para. 2.

⁸ 47 CFR § 73.616. The Commission recently amended its rules, including combining parts of sections 73.616(a) (Post-transition DTV station interference protection), 73.622(a), and 73.623(a) into one rule that includes all requirements for modifying a television allotment, modified section 73.622(a) (Table of TV allotments). *See*

principal community coverage to Winnemucca.⁹ In addition, proposed channel 16 noise limited service contour (NLSC) almost entirely encompasses the authorized channel 7 NLSC, and Gray does not propose a change in transmitter location.¹⁰ We also note that no viewers will lose any existing service because as a permittee, Gray has not commenced operations in Winnemucca.

4. As proposed, channel 16 can be substituted for channel 7 at Winnemucca in compliance with the principal community coverage requirements of section 73.625(a) of the rules,¹¹ at coordinates 41° 00' 31.0" N and 117° 46' 13.0" W. In addition, we find that this channel change meets the technical requirements set forth in sections 73.616 and 73.623 of the rules with the following specifications:¹²

<u>City and State</u>	<u>Channel</u>	<u>Power (kW)</u>	<u>Antenna HAAT (m)</u>	<u>Service Pop.</u>
Winnemucca, Nevada	16	20	651	21,494

5. We also conclude that good cause exists to make this channel change effective immediately upon publication in the Federal Register, pursuant to section 553(d)(3) of the Administrative Procedure Act.¹³ An expedited effective date is necessary in this case to ensure that KWNV can operate with improved service to its viewers as quickly as possible.

6. Accordingly, pursuant to the authority contained in sections 4(i), 5(c)(1), 303(g), (r) and 307(b) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 155(c)(1), 303(g), (r), and 307(b), and sections 0.61, 0.204(b), and 0.283 of the rules, 47 CFR §§ 0.61, 0.204(b), and 0.283, **IT IS ORDERED**, That effective immediately upon the date of publication in the Federal Register, the Table of Allotments, section 73.622(j) of the Commission's rules, 47 CFR § 73.622(j), **IS AMENDED**, with respect to the community listed below, to read as follows:

<u>City and State</u>	<u>Channel No.</u>
Winnemucca, Nevada	16

7. **IT IS FURTHER ORDERED**, That within 10 days of the effective date of this Order, Gray Television Licensee, LLC shall submit to the Commission a minor change application for a construction permit (Form 2100, Schedule A) specifying channel 16.

8. **IT IS FURTHER ORDERED**, That pursuant to section 801(a)(1)(A) of the Congressional Review Act, 5 U.S.C. § 801(a)(1)(A), the Commission **SHALL SEND** a copy of the Order to Congress and to the Government Accountability Office.

9. **IT IS FURTHER ORDERED**, That should no petitions for reconsideration or petitions

Amendment of Part 73 of the Commission's Rules to Update Television and Class A Television Broadcast Station Rules, and Rules Applicable to All Broadcast Stations, MB Docket No. 22-227, Report and Order, FCC 23-72 at para. 38 (rel. Sept. 19, 2023) (*Part 73 Amendment R&O*). The *Part 73 Amendment R&O* also relocated section 73.616(c), specifying the protected facilities of TV allotments, to new section 73.619(d). *Part 73 Amendment R&O* at para. 37. The amended rules are not effective as of the date of release of this *Report and Order* and as such we continue to make reference to the rules as currently numbered.

⁹ See 47 CFR § 73.625(a). The Commission also recently amended its rules to create a new section 73.618 (Antenna location and principal community coverage), which relocates, verbatim, the language from section 73.625(a) (DTV coverage of principal community and antenna system). *Part 73 Amendment R&O* at para. 37. As the amended rules are not yet effective, we continue to make reference to 47 CFR § 73.625(a).

¹⁰ *NPRM* at para. 2; Petition, Engineering Statement at 1-2. Gray proposes an increase in ERP from one kW to 20 kW and in HAAT from 649 to 651 meters. Petition, Engineering Statement at 1-2.

¹¹ 47 CFR § 73.625(a).

¹² 47 CFR §§ 73.616, 73.623.

¹³ 5 U.S.C. § 553(d)(3).

for judicial review be timely filed, MB Docket No. 23-286 and RM-11960 **SHALL BE TERMINATED** and its docket closed.

10. For further information concerning the proceeding listed above, contact Joyce L. Bernstein, Video Division, Media Bureau, Joyce.Bernstein@fcc.gov.

FEDERAL COMMUNICATIONS COMMISSION

Barbara A. Kreisman
Chief, Video Division
Media Bureau